Portland Fire & Rescue

Fire & Life Safety Requirements for Fire Department Access and Water Supplies

Based on the 2019 Oregon Fire Code as amended by the City of Portland and adopted as the 2021 Portland Fire Code.

This guide is intended to provide assistance in the application of the Fire Code in all areas served by Portland Fire & Rescue

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11/2021

NOTE TO USER

Authority and Scope

Portland Fire & Rescue has elected to administer and enforce the 2019 Oregon Fire Code under the authority granted to us by ORS 476.030. The Oregon Fire Code is the International Fire Code, 2018 Edition, as published and copyrighted by the International Code Council, which has been amended and adopted by the Oregon State Fire Marshal's Office. Portland Fire & Rescue enforces the Oregon Fire Code with local amendments and adopted as the 2021 Portland Fire Code.

Portland Fire & Rescue has prepared this guide to provide good faith guidance to building officials, contractors, architects, business owners, and the general public on local interpretations and practices that are considered to be in compliance with the Oregon Fire Code. The intent is to clarify aspects of the code that are vague or non-specific by addressing selected issues under normal conditions. The requirements of this guide shall not be construed as altering any existing code, law or regulation which may require fire protection features not covered or alluded to in these requirements, nor shall they waive any requirements of any code, law or regulation. The reader is cautioned that the guidance detailed in this guide may or may not apply to their specific situation, and that Portland Fire & Rescue retains final authority to determine compliance.

This document is adopted as part of the Portland Fire Code per section 501.1 of the 2021 edition. References in this document to either the Oregon Fire Code (OFC) or the Portland Fire Code (PFC) shall be construed as one in the same under the authority of the Portland Fire Code.

Link to the 2021 Portland Fire Code

2021 Portland Fire Code: 2021 Portland Fire Code | ICC Digital Codes (iccsafe.org)

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FIRE APPARATUS ACCESS

Fire apparatus access roads shall be in accordance with all applicable requirements of the International Fire Code and this Guide. Access shall consist of roadways, public and private streets, fire lanes, parking lot lanes or a combination thereof. (OFC Ch.2)

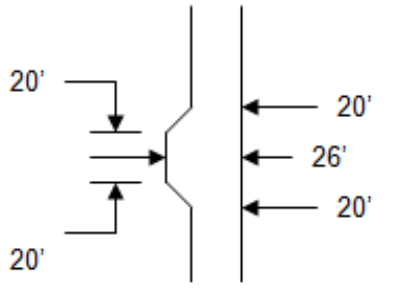
FIRE APPARATUS ACCESS ROAD EXCEPTION FOR AUTOMATIC SPRINKLER PROTECTION: When buildings are completely protected with an approved automatic fire sprinkler system installed in accordance with OFC Section 903.3.1.1, 903.3.1.2 or 903.3.1.3, the requirements for fire apparatus access may be modified as approved by the fire code official. (OFC 503.1.1)

ADDITIONAL ACCESS: The fire code official is authorized to require more than one fire apparatus access road based on the potential for impairment of a single road by vehicle congestion, condition of terrain, climatic conditions or other factors that could limit access. (OFC 503.1.2)

FIRE APPARATUS ACCESS ROAD WIDTH AND VERTICAL CLEARANCE: Fire apparatus access roads shall have an unobstructed driving surface width of not less than 20 feet, exclusive of shoulders, and an unobstructed vertical clearance of not less than 13 feet 6 inches. (OFC 503.2.1) See Example.

Note: When serving two or less dwelling units or Group U accessory buildings, the driving surface may be reduced to 12 feet, although the unobstructed width shall be 20 feet. Turning radius for curves and turnarounds on 12 feet wide roads shall comply with the inside turning radius and outside turning radius of 25 feet and 45 feet respectively. (OFC 503.2.4 & D103.3 exception)

FIRE APPARATUS ACCESS ROADS WITH FIRE HYDRANTS: Where a fire hydrant is located on a fire apparatus access road, the minimum road width shall be 26 feet within 20 feet of the hydrant, exclusive of shoulders, to provide a staging area for apparatus on the access road. See Appendix D for exceptions. (OFC D103.1)



MINIMUM CLEARANCE AROUND A FIRE HYDRANT

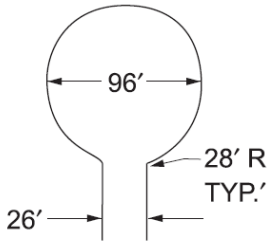
SURFACE AND LOAD CAPACITIES: Fire apparatus access roads shall be of an all-weather surface that is easily distinguishable from the surrounding area and is capable of supporting not less than 12,500 pounds point load (wheel load or gross wheel position weight) and 75,000 pounds live load (gross vehicle weight). Documentation from a registered engineer that the final construction is in accordance with the requirements of the Fire Code and this Guide may be requested. (OFC 503.2.3 & D102.1)

TURNING RADIUS: The required turning radius of a fire apparatus access road shall have an inside turning radius and outside turning radius of not less than 25 feet and 45 feet respectively, measured from the same center point. (OFC 503.2.4 & D103.3 exception) See Example

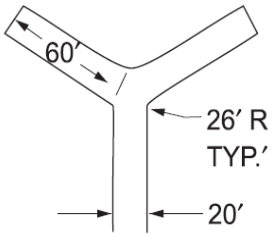
FIRE APPARATUS ACCESS ROAD DISTANCE FROM BUILDINGS AND TURNAROUNDS: Access roads shall be within 150 feet of all portions of the facility and all portions of the exterior walls of the first story of the building as measured by an approved route around the exterior of the building or facility. When the building is equipped throughout with an approved automatic sprinkler system, access roads shall be within 250 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. (OFC 503.1.1) See Example.

An approved turnaround is required if the remaining distance to an approved intersecting roadway, as measured along the fire apparatus access road, is greater than 300 feet. (503.2.5 & D103.4)

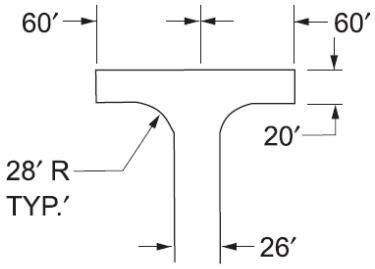
DEAD END ROADS AND TURNAROUNDS: Dead end fire apparatus access roads in excess of 300 feet in length shall be provided with an approved turnaround. Diagrams of approved turnarounds are shown below: (OFC 503.2.5, D103.4 & Figure D103.1)



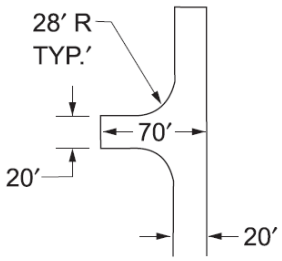
96′ DIAMETER CUL-DE-SAC



60-FOOT "Y"

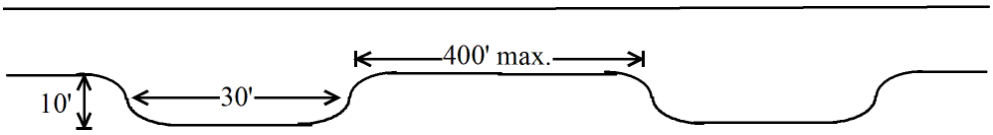


120′ HAMMERHEAD



ACCEPTABLE ALTERNATIVE TO 120′ HAMMERHEAD

TURNOUTS: When a fire apparatus access road exceeds 400 feet in length, turnouts 10 feet wide and 30 feet long shall be provided in addition to the required road width and shall be placed no more than 400 feet apart, unless otherwise approved by the fire code official. These distances may be adjusted based on visibility and sight distances. (OFC 503.2.2)



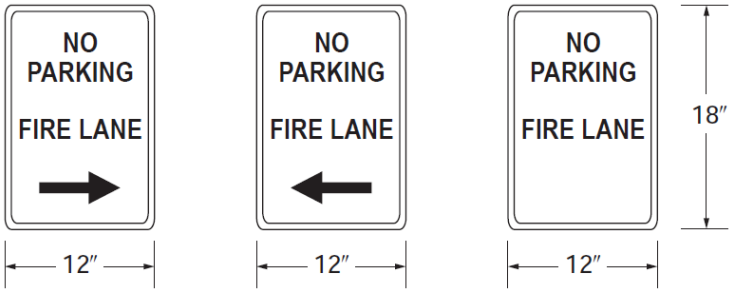
BRIDGES AND ELEVATED SURFACES: Private bridges shall be designed and constructed in accordance with the State of Oregon Department of Transportation and the American Association of State Highway and Transportation Officials (AASHTO) HB-17. Bridges and elevated surfaces shall be designed for a live load sufficient to carry the imposed loads of fire apparatus. A building permit shall be obtained for the construction of the bridge if required by the building official of the jurisdiction where the bridge is to be built. The design engineer shall prepare a special inspection and structural observation program for approval by the building official. The design engineer shall give, in writing, final approval of the bridge to Portland Fire & Rescue after construction is completed. Maintenance of the bridge shall be the responsibility of the party or parties that use the bridge for access to their property. Portland Fire & Rescue may at any time, for due cause, ask that a registered engineer inspect the bridge for structural stability and soundness at the expense of the property owner(s) the bridge serves. Vehicle load limits shall be posted at both entrances to bridges when required by the *fire code official*. (OFC 503.2.6)

GRADE: The grade of a fire apparatus access road shall not exceed 15% for unsprinklered properties. When approved fire sprinklers are installed and topographical conditions will not allow a lesser grade, a maximum grade of 18% will be allowed. (OFC 503.2.7 & D103.2)

ANGLES OF APPROACH AND DEPARTURE: Intersections and turnarounds shall be as level as possible with the exception of crowning for water run-off which can include slopes up to 5% maximum. Grades on stop-controlled approaches to intersections shall not exceed 5% for an approach distance of not less than 50 feet. (OFC 503.2.8, D103.2 and D103.3.2)

OBSTRUCTION OF FIRE APPARATUS ACCESS: Fire apparatus access roads shall not be obstructed in any manner, including the parking of vehicles. The minimum widths and clearances established in OFC Section 503.2.1 shall be maintained at all times. Traffic calming devices shall be prohibited unless approved by the fire code official. (OFC 503.4 & OFC 503.4.1)

NO PARKING SIGNS: Where fire apparatus roadways are not of sufficient width to accommodate parked vehicles and 20 feet of unobstructed driving surface, "No Parking" signs shall be installed on one or both sides of the roadway and in turnarounds. Roads 26 feet wide or less shall be posted on both sides as a fire lane. Roads more than 26 feet wide to 34 feet wide shall be posted on one side as a fire lane. Signs shall read "NO PARKING - FIRE LANE" and shall be posted every 100 feet and installed with a clear space above grade level of 7 feet. Signs shall be 12 inches wide by 18 inches high and shall have red letters on a white reflective background. (OFC 503.3 & OFC D103.6) See Example.



Note: Standards adopted by PBOT may supersede requirements of the Fire Code and this Guide. Please reference ORS 368.039) and refer to the PBOT Development Review Manual for public streets and connections or, for private rights of way, see Approved Permanent Rule for Private Rights of Way for more information.

PAINTED CURBS: Where required or provided, fire apparatus access roadway curbs shall be painted red and marked "NO PARKING FIRE LANE" at a minimum of 20 foot intervals. Lettering shall have a stroke of not less than 1 inch wide by 6 inches high. Lettering shall be of contrasting colors. (OFC 503.3)

GATES: Gates securing fire apparatus roads shall comply with all of the following: (PFC D103.5)

- Where a single gate is provided, the gate width shall be not less than 20 feet unobstructed.
- Where no turning movement is required within 30 feet of either side of the gate, the minimum width may be reduced to 14 feet in width.
- Where a fire apparatus road consists of a divided roadway, the gate width shall be not less than 12 ft wide.
- Gates serving one- or two- family dwellings shall be a minimum of 12 feet in width.
- Gates shall be set back at least 30 feet from the intersecting roadway.
- Gates shall be of the swinging or sliding type.
- Construction of gates shall be of materials that allow manual operation by one person.
- 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 to the lock is installed at the gate location. Methods of locking shall be approved by the *fire code official*.
- Gate components shall be maintained in an operative condition at all times and replaced or repaired when defective.
- Electric gates shall be equipped with a means for operation by fire department personnel that has been approved by the fire code official.
- Electric gate operators shall be listed in accordance with UL 325.
- Gates intended for automatic operation shall be designed, constructed and installed to comply with the requirements of ASTM F2200.
- Bollards are an approved alternate if they can be readily removed by one person, and they shall not be locked with a padlock or chain unless they are capable of being removed by means of a forcible entry tool or approved locking device.

PREMISES IDENTIFICATION: New and existing buildings shall have approved address numbers, building numbers or approved building identification placed in a position that is plainly legible and visible from the street or road fronting the property, including monument signs. These numbers shall contrast with their background. Address numbers shall be Arabic numerals or alphabet letters. Numbers shall be a minimum of 4 inches high with a minimum stroke width of ½ inch. Where required by the *fire code official*, address identification shall be provided in additional *approved* locations to facilitate emergency response. Where access is by means of a private road and the building cannot be viewed from the public way, a monument, pole or other sign or means shall be used to identify the structure(s). (OFC 505.1)

ADDITIONAL ACCESS ROADS – COMMERCIAL & INDUSTRIAL DEVELOPMENTS: **Buildings exceeding** 30 feet or three stories in height shall have at least two separate means of fire apparatus access. (OFC D104.1)

Buildings having a gross area of more than 62,000 square feet shall have at least two separate means of fire apparatus access. Buildings having a gross building area of up to 124,000 square feet may have a single fire apparatus access road provided all buildings served by the single access road are equipped throughout with an approved automatic sprinkler system. (OFC D104.2)

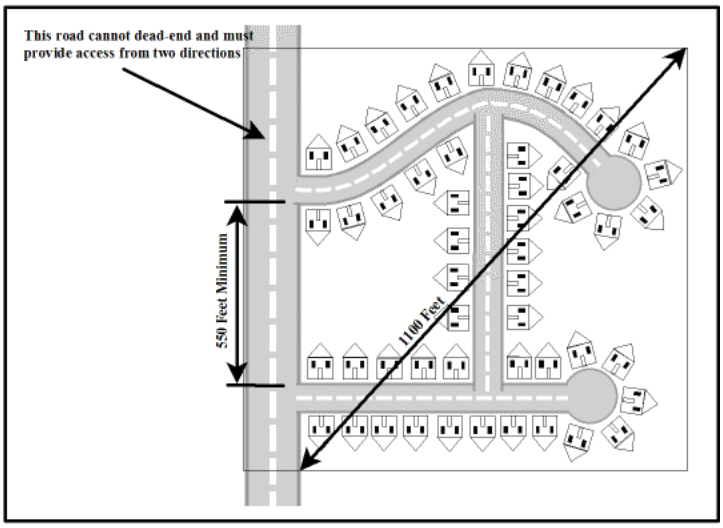
ADDITIONAL ACCESS ROADS – MULTIPLE-FAMILY RESIDENTIAL DEVELOPMENTS:
Multiple- family residential projects having more than 100 dwelling units shall be equipped throughout with two separate means of fire apparatus access. Projects having up to 200 dwelling units may have a single fire apparatus access road provided all buildings, including nonresidential occupancies, are equipped throughout with an approved automatic sprinkler system. (OFC D106)

Note: For buildings exceeding three stories or 30 feet in height OFC Appendix D104 supersedes D106.

Multiple-family residential projects exceeding 200 dwelling units shall be provided with two separate and approved fire apparatus access roads regardless of whether they are equipped with an approved automatic sprinkler system.

ADDITIONAL ACCESS ROADS – ONE- OR TWO-FAMILY RESIDENTIAL: Development of one- or two-family dwellings where the number of dwelling units exceeds 30 shall be provided with two separate and approved fire apparatus access roads. Where there are more than 30 dwelling units on a single public or private fire apparatus access road and all dwelling units are equipped throughout with an approved automatic sprinkler system, a single access will be allowed. (OFC D107)

MULTIPLE ACCESS ROADS 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. (OFC D104.3, D106.3 & D107.2)



AERIAL FIRE APPARATUS ACCESS ROADS: Buildings or portions of buildings or facilities exceeding 30 feet (9144 mm) in height above the lowest level of fire department vehicle access shall be provided with *approved* fire apparatus access roads capable of accommodating fire department aerial apparatus.

An aerial fire apparatus road is not required where the bottom of the eave of a sloped roof or the top of the parapet for a flat roof is not more than 30 feet (9144 mm) above grade measured to the point a ground ladder would be placed during emergency operations. (PFC D105.1) See Example.

Note: Aerial apparatus access roads are required where the fire department cannot reach the roof or upper stories with ground ladders. In order to use ground ladders only, there must be a minimum of two (2) separate ladder access points along the roof eave line or top of parapet which do not exceed 30 feet from the ground, regardless of the measurement of grade plane.

If the measurement, 30 feet to the roof eave line or top of parapet, is very close or in question, applicants may be asked to show the minimum two ladder points, see example "A", and a ladder placement diagram, see example "B", on their plan set.

AERIAL FIRE APPARATUS ACCESS ROADS – REQUIREMENTS:

- Aerial fire apparatus access roads shall have a minimum unobstructed width of 26 feet exclusive of shoulders or parking, in the immediate vicinity of any building or portion of building more than 30 feet in height that will accommodate aerial operations. (D105.2) See Example.
- The side of the building on which the aerial apparatus access road is positioned shall be approved by the fire code official.
- At least one of the required access routes meeting this condition shall be located within a minimum of 15 feet and a maximum of 30 feet from the building and shall be positioned parallel to one entire side of the building, a *dominant* side, or no less than 60 feet on a *dominant* side, required for operational purposes. (D105.3) See Example.
  - *The Dominant side shall be defined as the side (or a side) of the building where aerial equipment will have maximum access to the building.*
- The portions of aerial fire apparatus roads used for aerial operations shall be as flat as possible and shall not exceed 6% slopes in any direction for lengths up to 60 feet. (D105.5)
- Overhead utility and power lines shall not be located within the aerial fire apparatus access roadway or be located within 10 feet of an aerial ladder extended from the fire apparatus access road to the roof of the building or portion thereof. (D105.4 & D105.6)
  - *If 60 feet on a dominant side of the building is provided for Aerial Fire Apparatus Access, consideration must still be given that there will not be overhead utility or power lines within 10 feet of where an aerial fire apparatus ladder could be placed during firefighting operations. This could result in a need to provide greater than 60 feet in order to provide the 10-foot safety buffer.*

Note: For one- and two-family dwellings, an aerial fire apparatus access road will not be required when the vertical distance between the point a ground ladder would be placed during emergency operations and the highest roof surface is less than 30 feet or if provided with an approved fire sprinkler system per 903.3.1.3.

ALTERNATE TO AERIAL FIRE APPARATUS ROADS: Buildings complying with the following conditions will be exempt from the requirements of aerial fire apparatus access roads (D105.7):

1. The building is equipped with an approved automatic sprinkler system.
2. There are no combustible concealed attic spaces.
   Note: For NFPA 13R sprinklers systems to meet this condition the sprinkler system shall comply with ***one*** *of the four (4) options indicated at 2021 PFC 903.3.1.2.3 # 3 (items 3.1 through 3.4),* ***regardless*** *of the height of the roof assembly.* ***The selected option must be indicated on the plan submittal****.*
3. All stairway exit enclosures shall have a fire-resistance rating of not less than 2 hours.
4. The roof is essentially flat, having a slope four units vertical in 12 units horizontal (33.3-percent) or less.
5. Approved access is provided to the roof from all stairways. In buildings without an occupied roof, access to the roof from the top story shall be permitted to be by an alternating tread device, a ship's ladder or a permanent ladder that is constructed of noncombustible material **and** is a minimum of 30 inches between handrails; has a rise and run **of the stair or ladder** of 12 inches maximum and 4 inches minimum, and has handrails provided on both sides through a roof hatch or trap door not less than 36 inches (762 mm) wide and 8 feet (2438 mm) long (1011.12 - Exception and 1011.12.2 - Exception)

   Notes: 1. A construction guide for ships ladders or permanent ladders meeting the requirements of 1011.12 - Exception and where an alternate may be permitted can be found at: Construction Requirements meeting 1011.12 - Exception.

   2. Where guards are required in conjunction with meeting the Alternate to Aerial Fire Apparatus Roads, by OSSC/PFC 1011.13 and 1015.7, the Exception to 1015.7, regarding the use of fall arrest anchorage, shall NOT apply. Firefighters will generally not be able to utilize such anchors during firefighting operations and therefore require the guards for roof access. Section 1015.7 shall be met and the guards shall be installed in accordance with section 1015.
6. Building requiring standpipes are equipped with at least one standpipe that terminates on the roof.
   Note: The stairwell(s) with standpipes which extend to the non-occupied roof must be equipped with a ship's ladder or permanent ladder meeting the 1011.12 - Exception

FIREFIGHTING WATER SUPPLIES

COMMERCIAL BUILDINGS – REQUIRED FIRE FLOW: The minimum available fire-flow and flow duration for buildings other than one- and two-family dwellings, Group R-3 and R-4 buildings and townhouses, shall be as specified in OFC Tables B105.1(2) and B105.2. A reduction in required fire-flow from the tabular value, table B105.1(2), of up to 75% is allowed when providing an approved fire sprinkler system. In no case shall the resulting fire-flow be less than 1000 gpm at 20 psi residual when providing an NFPA 13 sprinkler system, or 1500 gpm at 20 psi residual when providing an NFPA 13R sprinkler system. (OFC Appendix B)

TABLE B105.2
REQUIRED FIRE FLOW FOR BUILDINGS OTHER THAN ONE- AND TWO-FAMILY DWELLINGS, GROUP R-3 AND R-4 BUILDINGS AND TOWNHOUSES

AUTOMATIC SPRINKLER SYSTEM (Design Standard)	MINIMUM FIRE FLOW (gallons per minute)	FLOW DURATION (hours)
No automatic sprinkler system	Value in Table B105.1(2)	Duration in Table B105.1(2)
Section 903.3.1.1 of the *International Fire Code*	25% of the value in Table B105.1(2)[a]	Duration in Table B105.1(2) at the reduced flow rate
Section 903.3.1.2 of the *International Fire Code*	25% of the value in Table B105.1(2)[b]	Duration in Table B105.1(2) at the reduced flow rate

For SI: 1 gallon per minute = 3.785 L/m.
a. The reduced fire flow shall be not less than 1,000 gallons per minute.
b. The reduced fire flow shall be not less than 1,500 gallons per minute.

Note: When a project is intending on using existing, or proposed new, City of Portland public fire hydrants, information regarding the fire flow of subject hydrants shall be obtained by the applicant and included in plan submittals.

*Applicants shall submit requests to the Portland Water Bureau at: Fire Flow Availability for Firefighting Purposes . Complete the "****Flow Availability Request Form****" and select the request for "****Modeled fire flow in gallons per minute at nearest hydrant at 20 psi residual pressure****".*

Projects using existing, or proposed new, private fire hydrants will also be required to provide fire flow information as part of their plan submittal. This shall also be the responsibility of the applicant to obtain and submit.

ONE - AND TWO - FAMILY RESIDENTIAL - REQUIRED FIRE FLOW: The minimum available fire flow for one and two-family dwellings, Group R-3 and R-4 buildings and townhouses, not exceeding 3,600 square feet shall be 1,000 gpm at 20 psi residual for duration of 1-hour. For one and two-family dwellings exceeding 3,600 square feet, the required fire flow shall be as specified in OFC Appendix B, Table B105.1(2) for the duration at the required flow rate.

The minimum available fire flow for one and two-family dwellings, Group R-3 and R-4 buildings and townhouses, not exceeding 3,600 square feet and provided with an approved automatic sprinkler system, NFPA 13D system or greater, shall be 500 gpm at 20 psi residual for a duration of 30 minutes. Greater than 3600 square feet and provided with an approved automatic sprinkler system, NFPA 13D system or greater, shall be ½ the value of table B105.1(2) at 20 psi residual pressure for a minimum of 1 hour.

For areas designated as "*Wildland Urban Interface Zones*" the minimum available fire flow shall be 1,750 gpm at 20 psi residual. See Zone map at www.portlandmaps.com, enter site address, select "Public Safety" and then "Hazard", see wildfire Hazard Area to determine if a property is within the "*Wildland Urban Interface Zone*".

RURAL BUILDINGS - REQUIRED FIRE FLOW: Required fire flow for rural and suburban areas in which adequate and reliable water supply systems do not exist shall be calculated in accordance with National Fire Protection Association Standard 1142, 2017 Edition. (OFC B107.1)

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

ACCESS AND FIREFIGHTING WATER SUPPLY DURING CONSTRUCTION: Approved fire apparatus access roadways and an approved water supply for fire protection, either temporary or permanent, shall be installed and operational prior to any combustible construction or storage of combustible materials on the site. (OFC 3312)

FOUR AND FIVE STORY WOOD FRAME STRUCTURES PREFIRE PLAN: Four and five story wood frame structures require a prefire protection plan. An approved prefire protection plan will be required prior to the permit being issued. (PFC 3308.3.1) Prefire protection plan requirements are found at: FOUR & FIVE STORY WFS PREFIRE PLAN

OCCUPANCY DURING CONSTRUCTION SAFETY PLAN (OSP): Where a location will remain occupied during construction or tenant improvement work, this includes both residential and non-residential occupancies, an Occupancy Safety Plan (OSP) will be required. This plan shall take into account maintaining a safe environment for the building occupants, addressing impairments of fire protection equipment, maintaining egress components, etc. See PFC chapter 33 and section 901.7.

FIRE HYDRANTS

FIRE HYDRANTS – COMMERCIAL BUILDINGS: Where a portion of a facility or building is more than 400 feet from a hydrant on a fire apparatus access road, as measured in an approved route around the exterior of the building, on-site fire hydrants and mains shall be provided. For buildings equipped throughout with an approved automatic sprinkler system the distance requirement may be increased to 600 feet. (OFC 507.5.1)

FIRE HYDRANTS – ONE- AND TWO-FAMILY DWELLINGS AND ACCESSORY STRUCTURES: Where a portion of a structure is more than 600 feet from a hydrant on a fire apparatus access road, as measured by an approved route around the exterior of the structure(s), on-site fire hydrants and mains shall be provided. (OFC 507.5.1)

FIRE HYDRANT NUMBER AND DISTRIBUTION: The minimum number and distribution of fire hydrants available to a building shall not be less than that listed in Table C 102.1.

TABLE C102.1
REQUIRED NUMBER AND SPACING OF FIRE HYDRANTS[h]

FIRE-FLOW REQUIREMENT (gpm)	MINIMUM NUMBER OF HYDRANTS	AVERAGE SPACING BETWEEN HYDRANTS[a, b, c, f, g] (feet)	MAXIMUM DISTANCE FROM ANY POINT ON STREET OR ROAD FRONTAGE TO A HYDRANT[d, f, g]
1,750 or less	1	500	250
1,751–2,250	2	450	225
2,251–2,750	3	450	225
2,751–3,250	3	400	225
3,251–4,000	4	350	210
4,001–5,000	5	300	180
5,001–5,500	6	300	180
5,501–6,000	6	250	150
6,001–7,000	7	250	150
7,001 or more	8 or more[e]	200	120

For SI: 1 foot = 304.8 mm, 1 gallon per minute = 3.785 L/m.

a. Reduce by 100 feet for dead-end streets or roads.
b. Where streets are provided with median dividers that cannot be crossed by fire fighters pulling hose lines, or where arterial streets are provided with four or more traffic lanes and have a traffic count of more than 30,000 vehicles per day, hydrant spacing shall average 500 feet on each side of the street and be arranged on an alternating basis.
c. Where new water mains are extended along streets where hydrants are not needed for protection of structures or similar fire problems, fire hydrants shall be provided at spacing not to exceed 1,000 feet to provide for transportation hazards.
d. Reduce by 50 feet for dead-end streets or roads.
e. One hydrant for each 1,000 gallons per minute or fraction thereof.
f. A 50-percent spacing increase shall be permitted where the building is equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1 of the *International Fire Code*.
g. A 25-percent spacing increase shall be permitted where the building is equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.2 or 903.3.1.3 of the *International Fire Code* or Section P2904 of the *International Residential Code*.
h. h. The fire code official is authorized to modify the location, number and distribution of fire hydrants based on site-specific constraints and hazards.

Note: A deficiency of up to 10 percent may be allowed where existing fire hydrants provide all or a portion of the required fire hydrant service. Regardless of the average spacing, fire hydrants shall be located such that all points on streets and access roads adjacent to a building are within the distances listed in Table C102.1 (C103.2 Exception).

CONSIDERATIONS FOR PLACING FIRE HYDRANTS SHALL BE AS FOLLOWS:

- Existing hydrants in the area may be used to meet the required number of hydrants as approved. Hydrants that are up to 600 feet away from the nearest point of a subject building that is protected with fire sprinklers may contribute to the required number of hydrants. Applicants may be required to obtain an access easement when requesting to use hydrants on adjacent properties. (OFC 507.5.1 & C104.1)
- Hydrants that are separated from the subject building by railroad tracks shall not contribute to the required number of hydrants unless approved by the fire code official.
- Hydrants that are separated from the subject building by divided highways or freeways shall not contribute to the required number of hydrants. Heavily traveled collector streets may be considered when approved by the fire code official. Hydrants that are accessible only by a bridge shall be acceptable to contribute to the required number of hydrants only if approved by the fire code official.
- When evaluating the placement of hydrants at apartment or industrial complexes, the first hydrant(s) to be placed shall be at the primary access and any secondary access to the site. After these hydrants have been placed, other hydrants shall be sited to meet the above requirements for spacing and minimum number of hydrants. (OFC C104)

FIRE HYDRANT DISTANCE FROM A FIRE APPARATUS ACCESS ROAD: Fire hydrants shall be provided along required fire apparatus access roads and adjacent public streets. (OFC C103.1)

CLEAR SPACE AROUND FIRE HYDRANTS: A 3-foot clear space shall be provided around the circumference of fire hydrants. (OFC 507.5.5) *Note, ORS 881.550(16) prohibits parking within 10 feet (3048 mm) of a fire hydrant.*

PHYSICAL PROTECTION: Where fire hydrants are subject to impact by a motor vehicle, guard posts, bollards or other approved means of protection shall be provided. (OFC 507.5.6 & OFC 312)

FIRE DEPARTMENT CONNECTIONS: A fire hydrant shall be located within **300** feet of a fire department connection (FDC) or as approved. Fire hydrants and FDC's shall be located on the same side of the fire apparatus access roadway or drive aisle. (OFC 507.5.1.1 Exception, OFC 912 & NFPA 13)

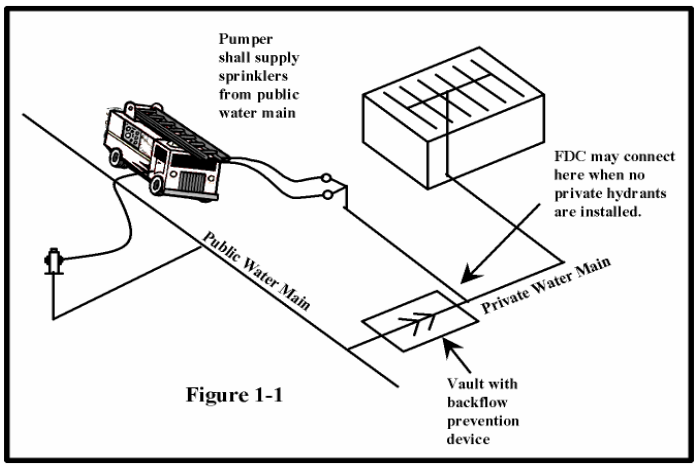


Figure 1-1

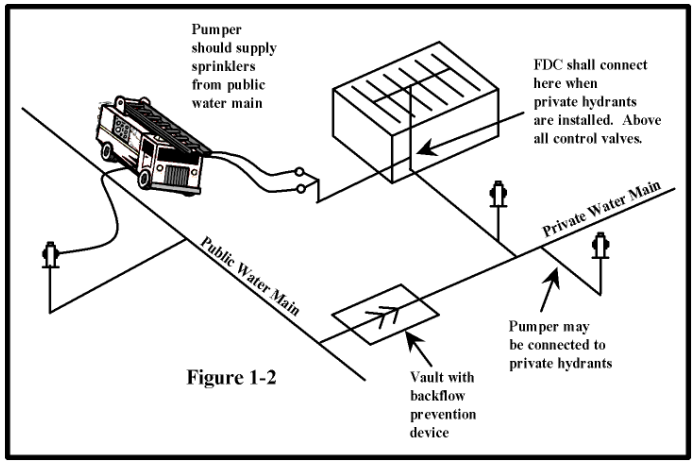


Figure 1-2

ADDITIONAL RESOURCES

KEY BOX: Where access to or within a structure or an area is restricted because of secured openings or where immediate access is necessary for life-saving or fire-fighting purposes, the *fire code official* is authorized to require a key box to be installed in an *approved* location. (OFC/PFC 506.1 & PCC 31.20.090)

Knox-Box: The *fire code official* has approved the "Knox-Box" as the access key box for use in the city of Portland. A Knox-Box, Knox padlock, or Knox key switch for gate access may be required. (OFC 506.1). For more information contact the Portland Fire Marshal's Office at 503-823-3712 or use the link: Lock box information: Lock Box Entry Systems

When required, detail the Knox-Box location on the plans near the front entry, mounted at about 6 ft. above ground level. Also, indicate on the plans that a "Lock Box" permit will be obtained from the Fire Marshal's Office.

HIGH PILED STORAGE: The High Piled Storage Statement of Understanding is used to clarify whether a facility or occupancy will be used, in full or in part, for High Piled Combustible Storage. If your project includes a storage component, please complete the High Piled Statement of Understanding and include with your plan set submission.

APPEALS: Fire Code How to File a Fire Code Appeal Building Code How to File a Building Code Appeal

REQUESTING A PRELIMINARY LIFE SAFETY MEETING: Life Safety Preliminary Meetings | Portland.gov

COLUMBIA SOUTH SHORE WELL FIELD WELLHEAD PROTECTION PROGRAM: If you are a property owner, business owner, or developer seeking a development permit within the protection area boundary, you are required to submit a Hazardous Materials Declaration and Inventory Form to establish the applicability of the wellhead protection regulations. To access this form and to find more information on the program, please follow this link: Wellhead Protection Program

MOUNTABLE CURBS: Where mountable curbs are proposed, the example found at the following link is approved for use by PBOT. Others mountable curb designs may be approved upon engineering review. CURBS

EMERGENCY RESPONDER RADIO COVERAGE: Emergency responder radio coverage must be provided in the buildings and locations listed at PFC section 510.1.1. An OSSC-FORM 918-ERRC shall be submitted, *with parts I and II completed,* at the time of initial permit application, even if the intent is to test out of this requirement.

SUBMITTING PLANS ONLINE (Single PDF process only): SUBMITTING PLANS & SUBMITTING CORRECTIONS