



North Lincoln Fire & Rescue District #1

Office of the Fire Marshal

PO Box 200, Lincoln City, OR 97367

541-996-2233

541-996-5344 (Fax)

Website: www.nlfr.org

ACCESS & WATER SUPPLY

FIRE CODE REQUIREMENTS

for

PLANNING AND DEVELOPMENT

North Lincoln Fire & Rescue District is an independent government agency providing fire and EMS emergency response and fire prevention services to the District: Lincoln City, Coastal Lincoln County (north of the Siletz River) and a small portion of SW Tillamook County (Cascade Head).

Our role in the pre-construction process is primarily to assess access and water supply for your proposed project based upon the 2019 Oregon Fire Code. The information we provide you will be based upon the amount of detail that is available on the project. Occasionally, submitted plans will also reveal details which can easily be corrected before construction begins (e.g., A garbage dumpster is to be housed adjacent to a combustible wall – Not permissible).

The complete text of the 2019 Oregon Fire Code (OFC) is available at:

<https://codes.iccsafe.org/content/OFC2019P1>

ACCESS

Fire apparatus access roads...

...must extend to within 150' of all portions of a 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. 2019 OFC 503.1.1

...must have an unobstructed width of 20' and an unobstructed vertical clearance of 13' 6". 2019 OFC 503.2.1

...shall not be obstructed in any manner, including the parking of vehicles. 2019 OFC 503.4

...shall be designed and maintained to support fire apparatus (75,000 lbs.) and provide all-weather driving capabilities. 2019 OFC 503.2.3 & D102.1

...shall have an inside turning radius of 30' and an outside turning radius of 50'. 2019 OFC 503.2.4

...shall not exceed 10 percent in grade (Except as approved by the *fire code official*). 2019 OFC D103.2

Dead-end fire apparatus access roads in excess of 150' in length must be provided with an *approved* area for turning around fire apparatus. 2019 OFC 503.2.5 (See Figure D103.1)

Where a fire hydrant is located on a fire apparatus access road, the minimum width shall be 26'. 2019 OFC D103.1

When a building's highest roof surface exceeds 30' from the ground, an *aerial* fire apparatus access road shall be provided. 2019 OFC D105.1

Aerial fire apparatus access roads...

...must be 26' in width, with an inside turning radius of 30' and an outside turning radius of 56'.
 2019 OFC D105.2

...must be located not less than 15' and not greater than 30' from the building, and must be positioned parallel to one entire side of the building as approved by the *fire code official*.
 2019 OFC 105.3

Overhead utility and power lines shall not be located over the aerial fire apparatus access road or between the aerial fire apparatus road and the building.
 2019 OFC 105.4

FIRE-FLOW REQUIREMENTS

Building construction type (Concrete, Heavy Timber, Sheet-metal, Ordinary 2" x 4", etc.), building size, and built-in automatic fire protection systems are the primary factors which determine fire-flow requirements for buildings other than one- and two-family dwellings.

Complete detailed information is available in Appendix B of the OFC. A portion of Table B105.1(2) is printed below to provide a starting point for consideration.

**TABLE B105.1(2)
 REFERENCE TABLE FOR TABLES B105.1(1) AND B105.2**

FIRE-FLOW CALCULATION AREA (square feet)					FIRE FLOW (gallons per minute) ^b	FLOW DURATION (hours)
Type IA and IB ^a	Type IIA and IIIA ^a	Type IV and V-A ^a	Type IIB and IIIB ^a	Type V-B ^a		
0-22,700	0-12,700	0-8,200	0-5,900	0-3,600	1,500	2
22,701-30,200	12,701-17,000	8,201-10,900	5,901-7,900	3,601-4,800	1,750	
30,201-38,700	17,001-21,800	10,901-12,900	7,901-9,800	4,801-6,200	2,000	
38,701-48,300	21,801-24,200	12,901-17,400	9,801-12,600	6,201-7,700	2,250	
48,301-59,000	24,201-33,200	17,401-21,300	12,601-15,400	7,701-9,400	2,500	
59,001-70,900	33,201-39,700	21,301-25,500	15,401-18,400	9,401-11,300	2,750	
70,901-83,700	39,701-47,100	25,501-30,100	18,401-21,800	11,301-13,400	3,000	3
83,701-97,700	47,101-54,900	30,101-35,200	21,801-25,900	13,401-15,600	3,250	
97,701-112,700	54,901-63,400	35,201-40,600	25,901-29,300	15,601-18,000	3,500	
112,701-128,700	63,401-72,400	40,601-46,400	29,301-33,500	18,001-20,600	3,750	
128,701-145,900	72,401-82,100	46,401-52,500	33,501-37,900	20,601-23,300	4,000	4
145,901-164,200	82,101-92,400	52,501-59,100	37,901-42,700	23,301-26,300	4,250	
164,201-183,400	92,401-103,100	59,101-66,000	42,701-47,700	26,301-29,300	4,500	
183,401-203,700	103,101-114,600	66,001-73,300	47,701-53,000	29,301-32,600	4,750	
203,701-225,200	114,601-126,700	73,301-81,100	53,001-58,600	32,601-36,000	5,000	
225,201-247,700	126,701-139,400	81,101-89,200	58,601-65,400	36,001-39,600	5,250	
247,701-271,200	139,401-152,600	89,201-97,700	65,401-70,600	39,601-43,400	5,500	
271,201-295,900	152,601-166,500	97,701-106,500	70,601-77,000	43,401-47,400	5,750	
295,901-Greater	166,501-Greater	106,501-115,800	77,001-83,700	47,401-51,500	6,000	
—	—	115,801-125,500	83,701-90,600	51,501-55,700	6,250	
—	—	125,501-135,500	90,601-97,900	55,701-60,200	6,500	

One- and two-family dwellings up to 3,600 square feet require 1,000 gallons per minute (gpm) from the water system at the fire hydrant. Those same one- and two-family homes with full automatic sprinkler systems will require only 500 gpm.

Complete automatic fire sprinkler coverage of any structure provides opportunity for favorable reduction in water supply, hydrant number and location, and even fire apparatus access requirements. It is also the most reliable and effective life safety protection available!

FIRE HYDRANTS

Fire hydrants must be available in proximity to structures in accordance with 2019 OFC Table C102.1.

**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. The fire code official is authorized to modify the location, number and distribution of fire hydrants based on site-specific constraints and hazards.

R-3 occupancies (Buildings with less than 3 dwelling units) must have a fire hydrant within 600' of all exterior portions of the structure with the approval of the fire code official. 2019 OFC 507.5.1

If you have other, more specific questions about the Oregon Fire Code, please feel free to contact me.

Ed Ulrich
Fire Marshal

fulrich@nlfr.org