

Windham Residential Sprinkler Discussion

May 2018
Updated November 2024

Sprinkler References in Town Ordinances

- Fire Prevention and Life Safety Code – Chapter 70
 - Section 70-4 Fire Suppression
 - Covers commercial uses only
- <https://ecode360.com/37093301?highlight=&searchId=12704153747205014#43402682>
- Land Use Ordinance - Chapter 120
 - Section 525 (B) Mixed use dwelling <https://ecode360.com/37095891#37095890> (no amendment date)
 - Section 550 (D) (1) Rooming House <https://ecode360.com/37095891#37096079> (no amendment date)
 - Section 555 C (8) (F) Private dead-end Roads <https://ecode360.com/37095891#37096181>
(Streets last amended 2018 this section appears to be 2009)
 - Section 911 B (5) (5) (a) (ii) dead-end streets
<https://ecode360.com/37097459?highlight=120-911&searchId=12703805345298599#37097459>
(Streets last amended 2018 this section appears to be 2009)
 - Section 812 (g) Subdivision Sufficient Water
<https://ecode360.com/37096780?highlight=&searchId=12704067648057745#37096780>
(no amendment date)
 - Section 414 F (7) (C) (1) Enterprise Development District (2014)
<https://ecode360.com/37392243#37392243>

Model Building Codes

- State adopted building code (MUBEC) is the International Building Code and the International Residential Building Code. Both of these codes as written require all single family and two family homes to be sprinkled. The State removed these sections when they adopted these codes.
- The State has also adopted the NFPA 101 Life Safety Code, which as written requires all single family and two family homes to be sprinkled. Again when the State adopted this code they removed this section.

Fire Marshal's Office Report to Legislature 2021

When Maine fire departments have recorded sprinkler systems in a home operating, the effectiveness of those systems has been 97% (see table 3). Effective means the sprinkler system either completely extinguished the fire or contained it until the fire department arrived. In both cases, the fire was held to the area/room of origin.

Operation Effectiveness	Count	%
Operated and Effective	60	95%
Operated and NOT Effective	5	5%
Total	65	100%

Fire Marshal's Office Report to Legislature 2021

Examining fire spread is another way of evaluating the potential impact of fire sprinkler systems in a home. In looking at Table 2 below fewer than half of the fires in Maine homes get past the room of origin. However, when it does spread beyond the room of origin, the outcomes are grim. In every category 50 to 90% of the injuries, deaths and property loss occur when the fire spreads beyond the room of origin.

Area of Origin	Frequency	Civilian Deaths	Civilian Injuries	FF Deaths	FF Injuries	Property Loss	Contents Loss	Total Loss
Confined to Room	2,795	14	144	0	17	\$21,167,214	\$6,050,782	\$27,217,996
Outside of room	2,664	77	184	1	234	\$133,759,394	\$44,034,301	\$177,793,695
Total	5,459	91	328	1	251	\$154,926,608	\$50,085,083	\$205,011,691
% of Fire Damage when the fire escapes the room of origin.		84.6%	56.1%	100.0%	93.2%	86.3%	87.9%	86.7%



THE TRUTH ABOUT HOME FIRE SPRINKLERS

Fires in the home pose one of the biggest threats to the people of your community. In 2022, U.S. fire departments responded to an estimated 1,504,500 fires. These fires caused 3,790 civilian deaths. Of those deaths, roughly 72% occurred in the home, the very place people feel most safe.

All national safety codes include fire sprinklers as a minimum safety requirement for new home construction. Homes built without sprinklers lack a crucial element of fire protection. Because sprinklers have been around for so long, the evidence is clear that they are a proven way to protect lives and property against fires at home—responding quickly and effectively to the presence of a nearby fire, and requiring minimal maintenance by homeowners.



Fast Facts

- In 2022, there was a civilian fire death every 3 hours and 14 minutes in the United States.
- The risk of dying in a reported home fire is 89% lower if sprinklers are present.



Access the 2024 NFPA® report, “US Experience with Sprinklers,” at nfpa.org/sprinklereport.

Myths vs Facts

MYTH: A smoke alarm provides enough protection.

FACT: Smoke alarms can alert occupants to the presence of danger, but do nothing to extinguish the fire. In a fire, sprinklers can control and may even extinguish a fire in less time than it would take the fire department to arrive.

MYTH: Newer homes are safer homes.

FACT: Today’s home fires become deadly in as little as 2 minutes. Modern home construction methods, unprotected lightweight construction materials, furnishings made of synthetic materials, and technology (including the increasing presence of lithium-ion batteries), can create a highly toxic environment, greater fuel load, and faster fires.

MYTH: Home fire sprinklers often leak or activate accidentally.

FACT: Leaks are rare, and are no more likely than leaks from a home’s plumbing system. Home fire sprinklers are calibrated to activate when it senses a significant heat change—typically at 135°F-1650°F. Sprinklers don’t operate in response to smoke, cooking vapors, steam, or the sound of a smoke alarm.

MYTH: When a fire occurs, every sprinkler will activate and everything in the house will be ruined.

FACT: Home fire sprinklers operate independently. In the event of a fire, typically only the sprinkler closest to the fire will

activate, spraying water directly on the fire, leaving the rest of the house dry and secure. According to the report, in 85% of home fires where sprinklers were activated, only one sprinkler turned on.

MYTH: Sprinklers are unattractive and will ruin the aesthetics of the home.

FACT: New home fire sprinkler models are very unobtrusive, can be mounted flush with walls or ceilings, and can be concealed behind decorative covers.

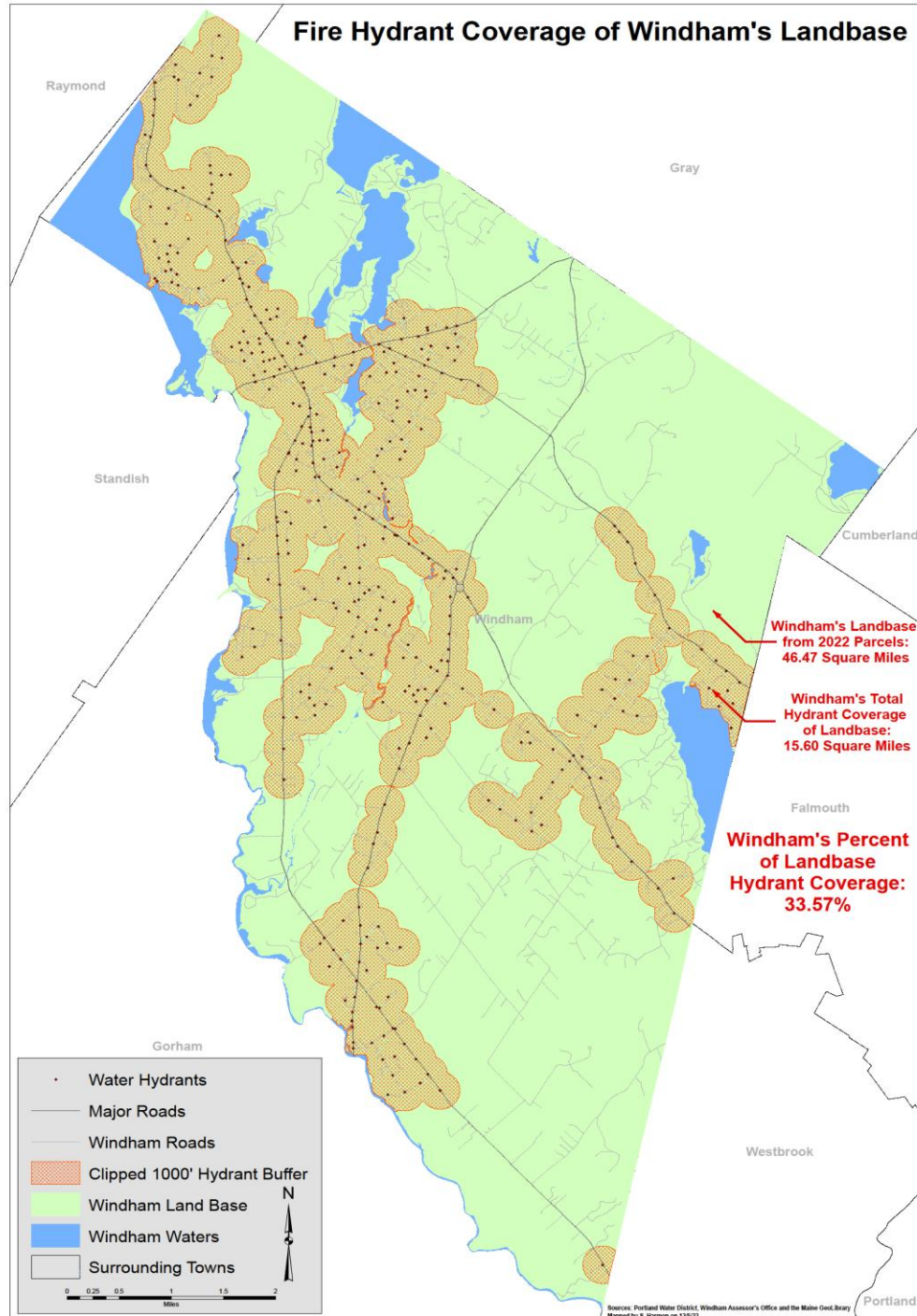
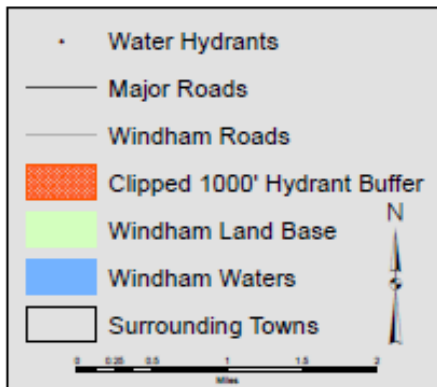
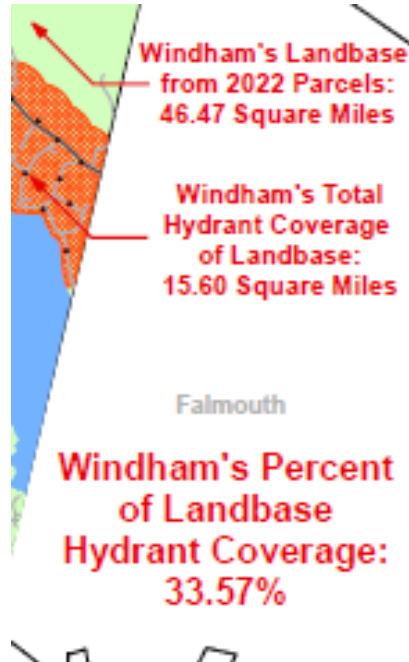
MYTH: Sprinklers are not practical in colder climates, as the pipes will freeze and cause water damage.

FACT: With proper installation, sprinklers will not freeze. NFPA 13D, *Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes*, includes guidelines on proper insulation to prevent pipes from freezing.

MYTH: The water damage caused by sprinklers will be more extensive than fire damage.

FACT: In a fire, sprinklers quickly control flames, heat, and smoke. Any water damage from the sprinkler will typically be much less severe than the damage caused by water from firefighting hose lines. Sprinklers use approximately 90% less water on a fire than a fire department hose line would.

Current Conditions



Current Conditions

- 4 Cisterns
 - Thornbury Way 10,000 gallons
 - Balsam Lane 10,000 gallons
 - Cross Ridge 15,000 gallons (to be installed)
 - Lockland Drive 30,000 gallons (to be installed)

- 175 Residential Sprinklers Systems
 - All but three are in approved sub-divisions

Current Conditions Cont.

10 Dry Hydrants – Location	Condition	
Anderson Rd @ SDIX	Private – Operational	
Brand Rd @ Belanger Ave	Not operable has a leak	
Harding Drive @ # 25	Not operable pond is dry	
Highland Cliff @ #26	Dredged and replaced 2018	Completed for \$7,500
Highland Cliff @ #166	Dredged and replaced 2018	Completed for \$7,500
Lady Slipper Way @ #10	Being replaced fall 2024	Quote \$4,680.00 w/out piping
Land of Nod @ Morgan Lane	Operational needs to be dredged	Quote \$4,200.00
Lasky Road	Privately owned – intermittent	
Strawberry Lane	Not operatable not installed to standard	
Perks Peak Rd	Operational installed 2020	

Cisterns

- For a Cisterns to be considered an ISO static water supply it requires 30,000 gallons.
- Most commonly two 15,000 gallon buried concrete tanks.
- Approximate tank cost \$53,000 with installation at approximately \$15,000 for a total of \$68,000.
- Maintenance Required
 - Require annual testing
 - Easement for maintenance and use
 - Any repairs are a confined space
 - Must be filled and refilled after use
- Could consume buildable land within the subdivision
- Provides a finite source of water for the general area

Dry Hydrants

- Piping installed into a static water supply; brook, river, pond or lake.
- Provides a water source to the general area
- Maintenance Required:
 - Plowing
 - Back flushing
 - Dredging
 - Annual testing.
- Average cost to install new is \$40,000 to NFPA 1142 specifications.
- Under NFPA 1 Uniform Fire Code, Fire ponds need to be installed, tested and approved before actual building occurs.
- Could consume buildable land within the subdivision
- Long term, soils may not support the pond and would be subject to drought

Residential Sprinklers

- Pump and 300-gallon tank located in the basement of each residence. With a direct connection on the outside of the home
- Installed to NFPA Standard or State approved Life Safety System
- Living spaces protected by sprinkler heads
 - Garages, attics, closets and bathrooms not required to have sprinkler heads
- Locally the average cost for a 30x30 two story colonial with attached two car garage with bonus room is \$16,000 per system (piping, fittings, tank, pump, labor)
- Activation at the time of the fire once temperature is reached.(155°-165°F)

Residential Sprinkler Data

- Average Damage:
 - \$2,166 in sprinkled building
 - \$45,019 in non-sprinkled building
- Fires in sprinkled dwellings used an average of 341 gallons of water, fires in non-sprinkled dwellings used an average of 2,935 gallons of water.
- 90% of fires controlled by a SINGLE sprinkler head.

*<https://homefiresprinkler.org/fire-department-15-year-data>

Water Main Extension

- Average cost to install new water main is approx. \$90/ft which includes:
 - 8” DI pipe, excavation and back fill
 - Not including any blasting or ledge hammering
- PWD inspection and testing fees range \$2000-\$10,000
- Hydrant
 - Complete hydrant assembly is approx. \$10,000

Fire Department Response

- Equipment
 - 3 front line engines with 1,000 gallons each
(One is Gorham's)
 - 2 Ladders
 - 1 with 400 Gallons
 - 1 with 400 Gallons
 - 2 Pumper-Tankers
 - 1 with 2800 gallons
 - 1 with 2000 gallons
- In areas without public water, we automatically request the two closest tank trucks from neighboring towns.
 - Rural water operations require additional apparatus, personnel and travel to shuttle water
- Average response 8.6 minutes (from 9-1-1 call to arrival)