



Nederland Fire Protection District Resolution 2023-11

A RESOLUTION OF THE BOARD OF DIRECTORS OF THE NEDERLAND FIRE PROTECTION DISTRICT TO UPDATE CISTERN SIZE REQUIREMENTS USING ADOPTED FIRE CODE, AND TO HAVE CONTRIBUTIONS TO THE COMMUNITY CISTERN FUND REFLECT THOSE REQUIREMENTS.

WHEREAS, the Nederland Fire Protection District (the "District") has adopted the 2018 edition of the International Fire Code ("IFC"); and

WHEREAS, Section 507.1 of the IFC requires an approved water supply capable of providing the required fire flow for fire protection to premises upon which facilities, buildings, or portions of buildings which are hereinafter constructed or moved into or within the jurisdiction; and

WHEREAS, Section 102.5 of the IFC states the construction and design provisions of the code shall apply including, but not limited to, water supplies; and

WHEREAS, Section 102.8 of the IFC allows the District to use NFPA 1142 for determining required fire flow duration; and

WHEREAS, the Boulder County standard for Emergency Water Supply for Firefighting (Form W/05) allows the cistern size to be determined by the square footage of the structure, and a monetary contribution to a community cistern fund in lieu of the placement of an individual fire cistern on site.

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE NEDERLAND FIRE PROTECTION DISTRICT THAT:

Adopt the required cistern size to meet fire flow duration as found in NFPA 1142, and that the contributions to the Community Cistern Fund reflect those requirements, as presented and attached to this resolution by a majority vote of the directors present and voting.

DATED: _____, 2023 NEDERLAND FIRE PROTECTION DISTRICT

Nederland Fire Protection District, 650 Lower W 4th Street, PO Box 155, Nederland, CO 80466
Ph: 303-258-9161. In an emergency call 911.

By:

ATTEST:

NEDERLAND FIRE CISTERN REQUIREMENTS – 2023 UPDATE

NFPA 1142 - Calculating Minimum Water Supplies in Rural/Suburban Areas

$$WS_{min} = \frac{VS_{tot}}{OHC}(CC) \times 1.5$$

WS_{min} = minimum water supply in gallons

VS_{tot} = total volume of structure in ft³ (sq footage x 10 for use in NFPD)

OHC = occupancy hazard classification number

CC = construction classification number

1.5 = exposures factor required for NFPD

Example, 1,575sqft residence:

$$WS_{min} = [(1,575 \times 10) / 7](1.5) = 3,375 \text{ gallons}$$

Initial Arriving Gallonage (IAG)

Future 5601 capacity (90%) = 750 (.9) = 675 gallons

5641 capacity (90%) = 3,000 (.9) = 2700 gallons

IAG = 3,375 gallons

Using NFPA 1142 formula, Initial Arriving Gallonage (IAG), and International Fire Code (IFC), dwelling sizes are placed into 3 categories.

0-1600, 1601-3600, 3601 sq.ft. and greater.

House size	Community Cistern Contribution	Cistern Size
min – 1,600 sq.ft.	\$10k (contribution preferred)	3,500 gallons (if required based on location)
1,601 – 3,600 sq.ft.	\$15k	7,000 gallons
3,601 – max	\$20k	NFPA 1142

Cistern Size

For most homes (1,601-3600 sq.ft.) 7,000 gallons @ \$17k, cistern plus labor, freight, and excavation OR \$15k contribution to Community Cistern Fund.

Strategic Cistern Placement

- Collected contributions to the Cistern Fund used to install, upgrade, maintain community cisterns or replace/maintain water tenders.
- Reduce water supply issues in areas with high wildfire risk.
- Greater impact in areas with high WUI concentrations (St Anton, Bonanza, Hummer).
- Remote areas with access issues (Fourth of July, Sherwood, CR103).