

**STEAMBOAT SPRINGS FIRE PREVENTION SERVICES  
ADMINISTRATIVE  
POLICY & PROCEDURE MANUAL**

**SECTION:** 4  
**POLICY NO.:** 1258.2D  
**DATE:** January 16, 2008  
**PAGE:** 1

**SUBJECT:** Water Supply Standards for the Steamboat Springs Rural Fire Protection District

**PERSONNEL AFFECTED:** Steamboat Springs Fire Rescue inspectors reviewing submittals for all new subdivisions/newly created buildable lots upon which facilities, buildings or portions of buildings are hereafter constructed or moved into or within the Steamboat Springs Rural Fire Protection District (SSRFPD).

**PURPOSE:** Uniform guidelines for the establishment of Water Supplies and Fire Hydrants that:

- 1.) Enhance firefighter safety.
- 2.) Meet local fire suppression requirements.
- 3.) Provide water for structure and wildland fire suppression efforts.

**POLICY:**

**1.0 GENERAL PROVISIONS**

- 1.1 Required Water Supply for Fire Protection.** An approved water supply shall be provided for the use of the fire protection service to protect all new subdivisions/newly created buildable lots upon which facilities, buildings or portions of buildings are hereafter constructed or moved into or within SSRFPD, other than an **Exempt Agricultural Building (as defined below) while used solely for agricultural purposes**, from exterior fire sources or to suppress structure fires within the area of the jurisdiction. (APPENDIX A – Water Supply Policy Outline)
  
- 1.2 Type of Water Supply.** A water supply may consist of fixed water supply mains, pressure tanks, elevated tanks, or other fixed water systems; reservoirs, cisterns, or underground storage tanks utilizing dry hydrants; tender shuttle; or any other method capable of providing the required fire flow that is approved by the Authority Having Jurisdiction (AHJ). **All water supply systems shall be accessible by access roads that meet the current Fire Apparatus Access Road Standards.**

### **1.3 Required Type of Water Supply for new subdivisions/newly created buildable lots.**

- 1.3.1** Fixed water supply system shall be required for new subdivisions/newly created buildable lots containing 25 or more buildable lots. Hydrants shall be laid out on the roadway such that no structure is further than 1000 feet from a hydrant, as hose can be laid by fire apparatus.
- 1.3.2** A minimum of one dry hydrant water supply system shall be required for new subdivisions/newly created buildable lots containing 24 or less buildable lots (except as defined in section 1.3.3). Depending on the expanse of the development more than one dry hydrant may be required. Final number and location of dry hydrants shall be determined by the local AHJ.
- 1.3.3** Local Fire Department Mobile Water Supply Apparatus may be used for water supply to new subdivisions/newly created buildable lots with 1 to 7 buildable lots with structures of 3600 square foot or less and where all access roads and driveways meet the current Fire Apparatus Access Road Standards.
- 1.3.4** The Authority Having Jurisdiction is authorized to require a water supply for any structure that is determined by size, occupancy classification, location or other factors that pose a significant risk.

## **2.0 SPECIFICATIONS**

**2.1 FIXED WATER SYSTEM** – A pressurized water system having water pipes serving fire hydrants and designed to furnish required fire flow, over and above domestic consumption at total build out for a minimum two hour fire event. The system shall:

- 2.1.1** Supply a minimum flow of 500 gpm at 20 pounds per square inch (psi) residual pressure for a 1-hour period excluding domestic demand at total build out for a minimum two hour fire event.
- 2.1.2** Have fire hydrants that are designed with supply mains that are 6 inch diameter pipe or greater.
- 2.1.3** Have fire hydrants on fixed water systems that are painted in accordance with the Steamboat Springs Fire Prevention Services' "Dry Hydrant Manual" and meet mountain standard specifications.
- 2.1.4** Be annually tested, flushed and inspected. A copy of the annual inspection shall be submitted to the AHJ.
- 2.1.5** Other – Comparable and adequate alternative fire protection water supply systems designed by a registered Colorado Engineer and approved by the local AHJ.

**2.2 DRY HYDRANTS** - Dry hydrants from reservoirs, cisterns, under ground storage tanks, etc shall be designed by a registered Engineer to furnish required fire flow plus 10 %, over and above domestic consumption and be tested with local AHJ present. Additional design criteria may be found in the Steamboat Springs Fire Prevention Services' "Dry Hydrant Manual". Additionally:

- 2.2.1** Each dry hydrant shall be capable of supplying a minimum of 500 gpm (at elevation) at draft without interruption for a minimum of 1 hour excluding domestic demand. (plus 10 % for ISO)
- 2.2.2** Reservoirs – Must hold a minimum of 33,000 gallons of usable water. Care should be taken in design to account for silt infiltration, winter ice conditions, livestock use, drought years, etc.
- 2.2.3** Cisterns – Must hold 33,000 gallons minimum useable water supply for structures excluding domestic demand.
- 2.2.4** Under Ground Storage Tanks – Must hold 33,000 gallons minimum useable water supply for structures excluding domestic demand.
- 2.2.5** Annual testing, flushing and inspection of all dry hydrant systems and their supply source used for fire protection are required. A copy of the annual inspection shall be submitted to the AHJ.
- 2.2.6** Other – Comparable and adequate alternative fire protection water supply systems designed by an engineer and approved by the local AHJ.

**2.3 MOBILE WATER SUPPLY APPRATUS** – Shall be supplied by the local jurisdiction and be designed primarily for transporting (pickup, transporting, and delivering) water to fire emergency scenes to be applied by other vehicles or pumping equipment.

### 3.0 PLAN SUBMITTALS

#### 3.1 PERMIT PROCESS

- 3.1.1** To obtain a permit (*if required*), the applicant shall first file an application in writing on a form furnished by the AHJ for that purpose. Every such application shall:
1. Identify and describe the work, activity, operation, practice or function to be covered by the permit for which application is made.
  2. Describe the land on which the proposed work, activity, operation, practice or function is to be done by legal description, street address or similar description that will readily identify and definitively locate the proposed building, work, activity, operation, practice or function.
  3. Indicate the use or occupancy for which the proposed work, activity, operation, practice or function is intended.
  4. Be accompanied by plans, diagrams, computation and specifications and other data as required in Section 3.2 of this policy.

5. Be signed by the applicant or the applicant's authorized agent.
6. Give such other data and information as may be required by the AHJ.

### 3.2 PLANS AND SPECIFICATIONS

- 3.2.1 Two sets of plans, engineering calculations, diagrams and other data shall be submitted with each application for a permit. All plans for systems shall be designed by a registered engineer.
- 3.2.2 Plans and specifications shall be drawn to scale upon substantial paper and shall be of sufficient clarity to indicate the location, nature and extent of the work proposed and show in detail that it will conform to the provisions of this policy and all relevant laws, ordinances, rules and regulations.
- 3.2.3 Site plans shall include topography, width and percent of grade of access roads, landscape and vegetation details, locations of structures or building envelopes, existing or proposed overhead utilities, occupancy classification of buildings, and site water supply systems.
- 3.2.4 Other Data and Substantiation. When required by the AHJ, the plans and specifications shall include additional data and substantiation as requested.
- 3.2.5 Vicinity Plan. In addition to the requirements for site plans, plans shall include details regarding the vicinity within 300 feet of property lines or 1000 feet of the structure, whichever is less, including other structures, slope, vegetation, fuel breaks, water supply systems, and access roads

### 4.0 DEFINITIONS

- **AHJ** - is the Authority Having Jurisdiction.
- **BUILDABLE LOT**  
A lot or parcel that meets all applicable requirements for building including but not limited to: wastewater disposal, well and septic spacing, setbacks, access, zoning and building requirements and any site specific restrictions imposed as part of a County Land Use Approval or Subdivision approval. Provided that it meets one or more of the following criteria:
  - A. Was created by deed or plat recorded in the Office of the Routt County Clerk and was not created in violation of Colorado state law or the Routt County Zoning and Subdivision Regulations and met the minimum lot area required for the Zone District in which it was located when it was created.
  - B. Has received Non-conforming lot approval per Section 3.5.5 of these Regulations.
- **DRY HYDRANT** – An arrangement of pipe permanently connected to a water source, other than a pressurized water supply system, that provides a ready means of water supply for

fire-fighting purposes and that utilizes the drafting (suction) capability of fire department pumpers.

- **EXEMPT AGRICULTURAL BUILDING** - is any building or structure that is exempt from the requirement that a building permit be obtained for such building or structure pursuant to Routt County Resolution 85-064, as amended by Routt County Resolution 02-044, and as it may be further amended from time to time hereafter.
- **FIXED WATER SYSTEM** – A pressurized water system having water pipes serving pressurized fire hydrants and designed to furnish required fire flow, over and above domestic consumption.
- **MOBILE WATER SUPPLY APPARATUS** – A vehicle designed primarily for transporting (pick-up, transporting, and delivering) water to fire emergency scenes to be applied by other vehicles or pumping equipment to a fire.

APPROVED BY: Jay Muhme, Fire Marshal

SIGNATURE: Jay Muhme  
DATE: 1/16/08

APPROVED BY: Bob Struble, Assnt. Fire Chief

SIGNATURE: Robert D Struble  
DATE: 1-23-08

APPROVED BY: Steamboat Springs Rural Fire Protection District Board, Steve Hilley, Board President

SIGNATURE: Steve Hilley  
DATE: 1-24-08

SUPERSEDES POLICY OF: \_\_\_\_\_

**APPENDIX A**  
**WATER SUPPLY POLICY**  
**OUTLINE**

- I. New Subdivisions/Newly Created Buildable Lots
  - A. 25 or more buildable lots:
    - 1. Fixed water supply system.
      - a.) 500 gpm @ 20 psi residual for one hour excluding domestic demand.  
Minimum storage capacity of 33,000 gallons.
      - b.) Hydrants no further than 1000 ft. to any structure.
    - 2. Access roads and driveways must meet all road standards.
  - B. 24 or fewer buildable lots (except as defined in Section C. below) :
    - 1. Dry hydrant water supply system.
      - a.) 500 gpm @ elevation at draft for one hour excluding domestic demand.  
Minimum storage capacity of 33,000 gallons.
      - b.) Depending on the expanse of the development more than one dry hydrant may be required. Final number and location of dry hydrants shall be determined by the local AHJ.
    - 2. Access roads and driveways must meet all road standards.
  - C. 1 to 7 buildable lots with single-family homes of 3600 sq. ft. or less:
    - 1. Mobile water supply apparatus may be used to meet criteria.
    - 2. Access roads and driveways must meet all road standards.
  - D. The Authority Having Jurisdiction (AJH) is authorized to require a water supply for any structure that is determined by size, occupancy classification, location or other factors to pose a significant risk.

NOTE: This policy exempts agricultural buildings no matter what size.  
Storage capacity is plus 10% per ISO.