RURAL FIRE RESOURCE QUICK GUIDE
NH Rural Fire Protection Initiative
North Country RC&D
719 N Main Street – Room 220
Laconia, NH  03246
The NH Rural Fire Protection Task Force was convened in 1995 by the North Country and Southern NH Resource Conservation and Development (RC&D) Councils. The Task Force, representing over a dozen state, local and federal agencies worked over a period of one year developing the individual guidance sheets you will find in the NEW Rural Fire Resource Quick Guide and also organized two workshops to present the original material to local fire departments and other community leaders. Now over a decade later, the need for this information remains strong. The North Country and Southern NH RC&D Councils have updated the original materials so that they may continue to be timely and useful.

We were able to update the Guide, through the financial support of the NH Charitable Foundation, technical support from Jay Zaccone, Graphic Design and Printing Technology instructor and the students of Nashua High School North Technology Center and expert review and guidance provided by, Brad Simpkins, State Forester and staff of the NH Department of Economic Development Division of Forests & Lands, Sandra Crystall, PWS, Senior Resources Manager, NH Department of Environmental Services Wetlands Bureau and Merrimack, NH Deputy Chief (Ret.), Martin Carrier, NFPA Technical Committee on Forest and Rural Fire Protection, Rick DeMark, North Country RC&D Coordinator and Pat Tarpey, Karl Berardi and Ann Bowes, staff of the NH Rural Fire Protection Initiative. We thank you all for your invaluable input and support.

The original purpose and goals of the Rural Fire Resource Quick Guide remain the same: to put a ready reference in the hands of local fire service and other community leaders that want to strengthen their fire fighting capacities to save lives and property. We hope you find the materials useful.

The North Country and Southern NH RC&D Area Councils

**The Rural Fire Resource Quick Guide is a product of the NH Rural Fire Protection Initiative. Contributors include NH DEPT OF SAFETY/DIVISION OF FIRE SAFETY and DIVISION OF FIRE STANDARDS & TRAINING, NH DEPT OF RESOURCES & ECONOMIC DEVELOPMENT/DIVISION OF FORESTS & LANDS/FOREST PROTECTION BUREAU, NH DEPARTMENT OF ENVIRONMENTAL SERVICES/WETLANDS BUREAU, NH FOREST ADVISORY BOARD and USDA NATURAL RESOURCES CONSERVATION SERVICE. FUNDING FOR REPRINT OF THE RURAL FIRE RESOURCE QUICK GUIDE WAS PROVIDED BY THE ROBERT P. BURROUGHS AND ANNA B. STEARNS FUNDS OF THE NEW HAMPSHIRE CHARITABLE FOUNDATION, WITH ADDITIONAL FINANCIAL SUPPORT PROVIDED BY THE NH HOMELAND SECURITY AND EMERGENCY MANAGEMENT OFFICE, AND THE USDA NATURAL RESOURCES CONSERVATION SERVICE. LAYOUT AND PUBLISHING PROVIDED BY NASHUA HIGH SCHOOL NORTH TECHNOLOGY CENTER. THIS COMMUNITY DEVELOPMENT PROJECT IS SPONSORED AND ORGANIZED BY THE NORTH COUNTRY AND SOUTHERN NH RESOURCE CONSERVATION AND DEVELOPMENT AREA COUNCILS. ANY OPINIONS, FINDINGS, CONCLUSIONS OR RECOMMENDATIONS PRESENTED IN THIS PUBLICATION REFLECT VIEWS OF SPONSORING ORGANIZATIONS. ANY PRODUCT MENTIONED IS FOR INFORMATIONAL PURPOSES ONLY AND SHOULD NOT BE CONSIDERED A PRODUCT ENDORSEMENT.**

06/2010

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RuRa l FiRe Re s o uRc e

Quick Guide

A practical guide for communities to address rural fire prevention, preparation and suppression

For use by Fire Departments and community officials

What’s covered?
- Rural Fire Suppression Planning
- Water Supply Site Developments
- Water Resource Protection & Permitting
- Easement for Fire Protection
- Standards & Guidelines for Community Development
- Fire Protection Codes & Guidelines for Homes & Business
- Fire Wise Landscaping
- Improved Fire Insurance Rating
- Firebreaks
- Public Awareness & Education
- A Directory of Agencies & Organizations for Additional Help

To get your copy:
NH Rural Fire Protection Initiative
c/o New Hampshire Resource Conservation & Development Area Councils, Inc.
Call the Southern NH office at (603) 223-0083 or the North Country office at (603) 527-2093

This publication can be downloaded from the web at: www.nhrcd.net

For more information contact:
NH Rural Fire Protection Initiative
c/o North Country Resource Conservation & Development Area Council
719 N. Main Street, Room 220
Laconia, NH 03246
(603) 223-0083
northcountryrcd@metrocast.net

Southern NH Resource Conservation & Development Area Council
10 Ferry Street, Suite 422
Concord, NH 03301
(603) 223-0083
southernnhrcd@gmail.com
RURAL FIRE SUPPRESSION PLANNING

**Task**
Help the local Fire Department and/or Planning Boards gather information and develop a town-wide Fire Suppression Plan.

**Description**
A Rural Fire Suppression Plan for a town will help it inventory all available water supply points and their locations. This list can note reliability and supply time. The town and the fire department can use the plan to prioritize development locations and plan expenditures for fire suppression supply points.

**Potential Benefits**
- Useful plan for local citizens and administrators to plan expenditures of funds for protection of residential and forest lands within the town.
- Map of water supply points good for listing draft sites in different parts of the town.
- Long term goals of the town can be carried on even with changes in fire department personnel.

**Guidelines**
- Review the town’s firefighting equipment and size, and goals for protecting the town.
- The inventory of possible supply sites should include the following information:
  - Note whether the source can supply water year-round or only in the summer months.
  - Determine maximum reliable water supply and minimum pumping time for available supply.
- Location of supply sites along roads and off roads.
- Base the inventory on field reconnaissance throughout the town.
- Verify the inventory data using resource and USGS maps and look for possible remote supply sites.
- Assess the reliability and usability of each inventoried site along with costs to develop using the Site Evaluation Worksheet.
- Prepare an overall Inventory Summary Sheet of sites displayed on a town map along with an index to the worksheets.
- Consider digitizing locations on GIS system of enhanced 911 system.
- Help the town in setting up a priority schedule for developing new water supply sites by providing site specific details.
- Be sure the town understands the wetland permitting regulations that pertain to fire pond maintenance and dry hydrant installation. (See Quick Guide on Water Resource Planning & Permitting)
- The plan should be reviewed and updated by the Fire Department and Planning Board each year and a schedule of inspection and test pumping of dry hydrants developed.
Where to Get More Information and Assistance

- A good way to get started is to assess your community needs by completing a Community Questionaire and applying for a Rural Fire Water Resource Plan for your town. For more information contact:
  - NH Rural Fire Protection Initiative (603) 527-2093
  - or Southern NH RC&D (603) 223-0083
  - www.nhrccd.net

- NH Department of Environmental Services Wetlands Bureau
  - 29 Hazen Drive, PO Box 95
  - Concord, NH 03302-0095
  - (603)271-2147
  - wetmail@des.nh.gov
  - www.des.nh.gov/organization/divisions/water/wetlands

- New Hampshire Department of Resources and Economic Development Division of Forests and Lands
  - Forest Protection Bureau
  - PO Box 1856
  - Concord, NH 03302-1856
  - (603)271-2214

- NH Resource Conservation and Development Area Councils (See Directory).

- The National Fire Protection Association
  - 1 Batterymarch Park, PO Box 9101
  - Quincy, MA 02169-7471

References

- 2009 International Wildland-Urban Interface Code Available from:
  - International Code Council
  - 500 New Jersey Avenue, NW, 6th Floor
  - Washington, DC 20001
  - www.iccsafe.org

  - 3833 S. Development Avenue
  - Boise, ID 83705
  - www.nwcg.gov/pms/pubs/catalog.htm

Where to Get More Information and Assistance

- A good way to get started is to assess your community needs by completing a Community Questionaire and applying for a Rural Fire Water Resource Plan for your town. For more information contact:
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  - Quincy, MA 02169-7471
Consider the use of:

- Exhibits and displays.
- Roadside signs.
- Groups, such as scouts, 4-H, garden clubs, service club (using pre-assembled groups saves the time of organizing people.)
- Feature articles in local newspaper.
- News releases for Cable TV which offer free time for community activities.
- Local organizations’ newsletters, public service announcements offered free on radio station.
- School programs.
- Demonstrations (workshops by themselves or in conjunction with other events in the community).
- Activities at local and county fairs.
- Displays and or handouts at Town Meetings.
- Open house at the fire department.
- A recognized spokesperson on this issue in the communities.
- Workshops for planning board members, conservation commission members, board of selectmen and developers.
- Handouts for homeowners distributed at hardware stores and bulk mailing within the community zip code (expensive and doesn’t always coincide with community boundaries).
- Neighborhood programs in fire prone areas.

### REFERENCES:

- **Standard for Reducing Structure Ignition Hazards from Wildland Fires, NFPA 1144, 2008 Edition,** available from the National Fire Protection Association
  1 Battery March Park
  Quincy, MA 02169
  (617) 984-7476

### WHERE TO GET MORE INFORMATION AND ASSISTANCE:

- Firewise Communities is an excellent source of information and resources for both communities and residents. Visit their website at [www.firewise.org](http://www.firewise.org) for more public outreach information and ideas.
- The New Hampshire Department of Resources & Economic Development Division of Forests & Lands
  Forest Protection Bureau
  PO Box 1856
  Concord, NH 03302-1856
  (603) 271-2217
  719 North Main Street, Room 220
  Laconia, NH 03246
  (603) 527-2093
  [www.nhrcd.net](http://www.nhrcd.net)
  (Serving Belknap, Carroll, Coos and Grafton Counties)
- Southern NH Resource Conservation and Development Area Council, Inc.
  10 Ferry Street, Suite 422
  Concord, NH 03301
  (603) 223-0083
  [www.nhrcd.net](http://www.nhrcd.net)
  (Serving Cheshire, Hillsborough, Merrimack, Rockingham, Strafford and Sullivan Counties)
- The U.S. Department of AgricultureNatural Resources Conservation Service and County Conservation Districts (See Directory)

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**SITE EVALUATION WORKSHEET**

**WATER SUPPLY DEVELOPMENT FOR RURAL FIRE SUPPRESSION**

**Site Number**

**Date of Site Inventory**

**Town and or Community**

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**RURAL FIRE RESOURCE QUICK GUIDE**
RuRa l FiRe Re s oUrc e Qu i c k Gu i d e
North Country and Southern New Hampshire
Resource Conservation and Development Area Councils
Not for profit organizations working with USDA and others to conserve and improve natural and community resources in New Hampshire

**Task**

To improve building practices, defensible fire zones, emergency access and suppression preparedness and to reduce the incidence of fires through an awareness and education program targeting community decision makers and the public that live and work in wildfire prone areas in the community.

**Description**

The goal is to have target audiences implement practices and actions which reduce the impact of wildfire on people and property in the community.

**Potential Benefits**

- Planning boards, selectmen, conservation commissions, road agents, building code enforcement officers and developers can learn the need to address wildfire considerations when planning roads, subdivisions and other activities in areas where wildfires can start and spread.
- Residents and businesses in areas where wildfires can start and spread need to be aware of:
  - Fire safety practices which can reduce the incidence of fire.
  - Practices which can reduce the susceptibility and severity of fire related injury, loss of life, or damage to property.

**Guidelines**

- Design community public awareness programs to target specific audiences when possible. Include calls for action that are desirable, for example, planning boards and developers may be targeted to provide adequate access in new construction for fire equipment. Also, residents residents in woodland homes may be targeted to use fire resistant roof shingles and to use landscape practices to create a defensible fire zone. Provide enough information to show the need, consequences of actions and where to get further information.

Components of a program to target community decision makers:

- Schedule personal contacts with community decision makers.
- Provide a well prepared verbal presentation.
- Provide written materials to add background, details and support.
- Make a specific request for action.
- Show why the action is good for the community.
- Provide additional help in decision making and implementation and provide thanks.

Components which may be in a public awareness program:

- Develop a campaign strategy with the goals well clarified.
- Develop a relationship with reporters from local papers, radio and TV.
- Team up with County Conservation Districts, RC&Ds, and or the New Hampshire Division of Forests and Lands (DRED) to share resources and public information expertise.
1. height of the tallest adjacent vegetation, but not less than 25 feet. Those constructed along or close to property lines may require an easement or other agreement.

2. In specific areas of high hazard or to protect a special area, create a low grass cover by plowing, harrowing, bulldozing, liming, fertilizing and seeding to low growing grasses. Width may vary from 30 to 45 feet or more. This work may be repeated to meet the seasonal growth of weeds, etc. Where erosion may be a problem, use water bars, culverts and other water control structures along with grass or in combination with low growing green, herbaceous vegetation.

3. The width of the firebreak is determined by the degree of the slope and the height of available fuels. The guidelines are:

<table>
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   Erosion Control Requirements:

   1. Provide water bars or other structures to control surface runoff, prevent erosion and provide surface drainage. Space water bars according to “Best Management Practices (BMP’s) for Erosion Control on Timber Harvesting Operations in New Hampshire” or by using the following guide:

      1000 = water bar spacing in feet
      Grade in % + 2.0

   2. Vegetate all sections of firebreaks with grasses beneficial to wildlife or low growing grasses. Refer to Haul Road, Skid Trail, and Log Landing Stabilization section “BMP’s for the Erosion Control on Timber Harvesting Operations in New Hampshire” or NRCS Conservation Practice Standard “Critical Area Planting” Code 342 for appropriate seeding specifications.

   Maintenance Requirements:

   1. Inspect annually before each fire season and mow the vegetation in the firebreak if needed.

   2. In high hazard areas it may be necessary to maintain established firebreaks by exposing strips of mineral soil through annual plowing, harrowing, rototilling, bulldozing, or careful use of approved herbicides.

   3. To maintain most green vegetation less than 6 inches in height, mow sod firebreaks periodically throughout the growing season and once after the first killing frost in the fall.

   References


WHERE TO GET MORE INFORMATION AND ASSISTANCE

   • County Conservation District and Natural Resources Conservation Service Office. (See Directory)

   • New Hampshire Department of Resources and Economic Development, Division of Forests and Lands, Forest Protection Bureau (See Directory)

   • University of New Hampshire Cooperative Extension, Forestry and Wildlife Program, or contact the UNH Cooperative Extension office in your county. (See Directory)

GUIDELINES

   • Showed below is an example of a dry hydrant installation and the primary factors affecting maximum available flow:

   a) Diameter of pipe (6” minimum)
   b) Length of pipe and fittings (minimize length and number)
   c) Interior roughness
   d) Types of fittings
   e) Velocity Head
   f) Diameter of pipe

MAXIMUM FLOW [A] IS DEPENDENT ON:

   • Elevation above sea level [B]

   • Static Lift [C] 1. Intake elevation of pumper [D] (should be higher than hydrant outlet). 2. Avoid static lifts exceeding 17 feet.

   • Losses in Dry Hydrant
   a. Intake elevation of pumper [D]
   b. Strainer Type [F]
   c. Velocity Head [H]
   d. Diameter of pipe

   • Potential Benefits

   • Community benefits include: more strategically located water sources for fire fighting, fuel savings from not hauling water from remote sites, and fewer vehicles on the road during emergency situations.

   • Individual benefits include: security of knowing adequate water supply is near by, possible wildlife habitat and recreational uses available in a pond, and possible insurance reduction benefits.

   • A list of potential water supply sites which can be used in planning for future development within the town.

   • More closely spaced hydrant sites will reduce water shuttle distance and thereby reduce exposure to tanker/apparatus mishap.

WATER SUPPLY SITE DEVELOPMENTS
1. Loss in suction hose [I]
   a. Length
   b. Diameter

2. Installation depth at the water line should equal or exceed 4.0 feet for freeze protection.

3. Detailed investigation of adequate pump out locations in streams is needed to determine bed load movement and natural scour holes for use as sumps for the installation of the dry hydrant.

4. Static lift of greater than 10’ requires careful consideration/calculations.

The following information applies to the installation of a cistern:

The following information applies to the installation of a cistern:

- Lower suction pipe installed with anti-vortex 2.
- Provide connection for filling the tank 3.
- Installation depth at the water line 2.
- Detailed investigation of adequate pump out locations in streams is needed to determine bed load movement and natural scour holes for use as sumps for the installation of the dry hydrant.
- Static lift of greater than 10’ requires careful consideration/calculations.

- Various materials can be used for the installation of pipes and hydrants:
  1. Steel pipe for complete system is recommended for installations in streams or existing ponds which can’t be lowered to see material in bottom of the trench.
  2. Six or eight inch PVC Schedule 40 pipe with 3.5 foot steel riser is recommended in northern climates.
  3. Fabricated metal strainer or trash guard is recommended on the inlet of the intake pipe rather than a perforated pipe.
  4. PVC pipe must be placed on one foot of sand and covered with another foot of sand to protect it from rocks in the backfill or original material.
  5. Install guard posts on each side of riser (approximately 2 feet away) to protect from snow plows, vehicles, etc.
  6. The use of two 45 degree elbows instead of a 90 degree elbow when connecting the riser to the suction can reduce friction loss.

To protect soil, water, and plant resources and to reduce or prevent damage to buildings and timber stands from fire.

**DESCRIPTION**

A strip of mowed grass or fire-retarding vegetation installed in areas where damaging fires are likely or where fire may be prescribed as a cultural or protective measure. These strips provide natural impediments to fire and access routes for fire fighting equipment to control wildfires.

**POTENTIAL BENEFITS**

- Quicker access to wildfires in large tracts of forested land.
- Greater protection to residential areas in wooded areas.
- Increased wildlife habitat diversity with open space in wooded areas.
- Can be used as access roads for timber harvesting operations.
- Provides means of egress for emergency personnel as well as residents.

**GUIDELINES**

- Planning Considerations:
  1. The periods of highest fire hazard are:
     a. Early spring after snow is off the ground and before leaves are out.
     b. Late summer and early fall.
  2. Generally, adequate fire protection can be provided by well planned access systems. However, additional firebreaks are necessary where the likelihood of damaging fires is great, the value of resources is high, or in localities where fire fighting equipment and personnel are limited.
  3. Whenever possible, construct and maintain firebreaks to serve as emergency access roads for fire suppression crews and equipment. These are considered man made barriers.
  4. Droughty soils have high potential for fire and usually support vegetation commonly associated with fire, i.e., pine barrens and mixed oak ridges. However, if surface conditions are dry and fuel is available, soils of any drainage class are at risk.

- Design Specifications:
  1. Where possible, locate firebreaks and fire lanes across the general slope, at right angles to prevailing winds, or adjacent to highways, permanent logging roads, or boundaries. Avoid grades in excess of 15 percent unless adequate erosion control is provided.
  2. Whenever possible utilize natural barriers such as ridge tops, wetlands, open land, timber types and streams or man-made barriers such as access roads and trails.

- Construction Specifications:
  1. Remove all woody and low-growing flammable vegetation and debris from a strip of land equal in width to the...
Maintenance of hydrants and cisterns should include the following actions:
1. Hydrants should be back flushed and tested annually.
2. Inspect hydrants for any damage or leaks.
3. Inspect and ensure adequacy of guard posts and access roads to the hydrant or water source annually.
4. Keep annual records of all inspections and tests noting maximum withdrawal rates for a minimum of three years.

References
- National Fire Protection Associations Codes:
- NRCS Conservation Practice Standard "Dry Hydrant" Code 432.

Where to Get More Information and Assistance
- NH Resource Conservation and Development Area Councils (See Directory).
- County Conservation District and Natural Resources Conservation Service Field Offices (See Directory).
- New Hampshire Department of Resources and Economic Development Division of Forests and Lands Forest Protection Bureau PO Box 1856 Concord, NH 03302-1856 (603) 271-2214
- University of New Hampshire Cooperative Extension Forestry and Wildlife Program 118 Taylor Hall, 59 College Road Durham, NH 03824 (603) 862-3397 or contact the UNH Cooperative Extension office in your county. (See Directory)
- The National Fire Protection Association 1 Batterymarch Park, PO Box 9101 Quincy, MA 02169-9101 (617) 770-3000 www.nfpa.org

(This sheet may be duplicated for local use)
To assist the local fire department in achieving an improved insurance rating.

**DESCRIPTION**
An upgrading in Insurance Services Office (ISO) rating will be the result of improvements in water supply, equipment, training, dispatching, record-keeping and other factors in accordance with the ISO Public Protection Classification (PPC) Program.

**Potential Benefits**
- Reduced fire insurance premiums.
- Improvements in fire department operations result in better fire protection for residents of the town and saves lives.
- Achieving and maintaining an improved insurance rating will provide a framework for fire equipment design, fire equipment maintenance, water supply and training.

**Guidelines**
- Review the guidelines as set forth by the Insurance Services Office online at www.isomitigation.com.
- Map the town’s year-round water supplies, roads, and bridges.
- Review the fire department’s water supply apparatus and methods of delivering water to a fire.
- Review the fire department’s training procedures, subjects, frequency and attendance records.
- Review the fire department’s mutual aid plans with other area fire departments.

**Task**
To assist the local fire department in achieving an improved insurance rating.

**References**
- ISO’s Public Protection Classification (PPC) Program
- www.isomitigation.com

**Where to Get More Information and Assistance**
- ISO Community Hazard Mitigation Division
  4B Eves Drive, Suite 100
  Marlton, NJ 08053-3112
  iso_east@iso.com
- NH Insurance Department
  21 South Fruit Street, Suite 14
  Concord, NH 03301
  (603) 271-2261

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**Fire Hydrant General Design Information**

Allowable Lift (H_a) for Altitude of 1000 feet = 22.0 feet.
Total Suction Lift (H_t) = H+H_{L_1}+H_{L_2} where:
- \(H\) = Static Lift in feet
- \(H_{L_1}\) = Head Loss in Hydrant and Screen,
- \(H_{L_2}\) = Head Loss in Intake Pipe.

\(H_t\) Must Not Exceed \(H_a\)

Head Losses are determined from charts based on pipe size, material, and flow rate through the pipe.

**Typical Dry Hydrant Cross Section**
Maintain minimum 3.0’ coverage above strainer and minimum 3.0’ depth below strainer.
PICTURED BELOW ARE AT LEAST 10 FIRE HAZARDS

- Overhead wiring leading to house subject to contact by branches
- Roofing made of combustible material (shakes)
- Vegetation not cleared around base
- No spark arresting screen on chimney outlets
- Tree needles, limbs accumulated on roof
- Firewood and fuel located under open deck where a wildfire could ignite
- Resident's house number not identified outside for fire protection reference.
- No garden hoses

- No metal screening under the stairs or deck
- Flammable vegetation in planter under the window on the deck
- Limbs hanging over or within 15' of chimney
- Unthinned tree and brush growing within 30' of house enabling a wildfire to spread
- Live or dead branches on nearby trees not pruned 10' off ground
- Debris pile located within 50' of the house
- Limited access around house

NEW HAMPSHIRE RURAL FIRE PROTECTION INITIATIVE

A Project of the North Country and Southern New Hampshire Resource Conservation and Development Area Councils

RC&D

Not-for-profit organizations working with USDA and others to conserve and improve natural and community resources in New Hampshire

RURAL FIRE RESOURCE QUICK GUIDE

WATER RESOURCE PROTECTION & PERMITTING

TASK

Help local Fire Departments and/or Planning Boards understand when and what kind of regulatory permits may be needed to implement a Fire Suppression Plan.

DESCRIPTION

Permits required by water resource regulations must be acquired before disturbing or impacting lakes, streams, or the banks of surface bodies or wetlands, or other jurisdictional areas, for the construction of water supply sites or a dam. Maintenance activities typically require a permit, as well.

POTENTIAL BENEFITS

- Plan ahead to assemble the appropriate information and obtain permits so construction can begin promptly when conditions are ideal (such as low flow). Most DES wetland permits are good for five years from DES approval.
- Project planning should consider the costs involved in obtaining a permit for a project at a particular location. This may affect project location and design.
- Avoid the potential for being assessed a fine if no permit is obtained before work is started.

GUIDELINES

- A wetlands permit is needed for any project to excavate, remove, dredge, fill or construct a structure in a wetland or on the bank of, or in, any surface water body. Other areas for which work requires a wetland permit include prime wetland buffer in those towns that have municipally designated prime wetlands. (See: www.des.nh.gov/organization/divisions/water/wetlands/prime_wetlands.htm)
- Wetlands are those areas that are inundated or saturated by surface or groundwater for as little as two weeks during the growing season and that support plants adapted to grow in saturated soil conditions.
- The boundaries of wetlands, surface waters and their banks must be identified on the property where the impacts are proposed. A certified wetland scientist or a knowledgeable governmental agency representative familiar with the U.S. Army Corps of Engineers methodology for identifying wetlands must identify the boundaries in the field.
- Once the resource boundaries have been identified, a project's design must consider those wetland and surface resources in developing the project that represents the least impacting alternative.
- The boundaries of the wetlands, surface waters and their banks must be clearly shown on all plans.
- The need for the impact must be clearly demonstrated. The applicant must address:
  - Why the project is necessary.
  - Why the project is planned for the specific location.
  - How the project as proposed represents the least impacting alternative to wetlands, surface waters and other jurisdictional areas.
A State dam permit is required if an artificial embankment 6 feet or more in height is constructed. Some roadway culverts and detention ponds are dams. Any artificial barrier which impounds liquid industrial or liquid commercial wastes, or septage or sewage, regardless of height or storage requires a dam permit. Any artificial barrier on a great pond, regardless of height is considered a dam. A dam permit is good for two years.

If a fire pond or intake area has been legally constructed to provide water for a municipal firefighting purpose as approved be a local fire chief, it can be maintenance dredged to restore its capacity without a permit. (See RSA 482-A: 3, IV (b)

The local Conservation Commission (CC) has an advisory role in the wetland permitting process. The CC reviews applications, may conduct a site walk of the proposed project, and provides comments to the DES Wetlands Bureau. Consult with the CC early in the process to obtain input and identify any concerns.

Permit application forms can be obtained from the DES website (by download or request by email), as well as from town clerks and the DES Wetlands Bureau office at (603) 271-2147. By checking the DES website and additional information there, you may find that a different application is more appropriate for your proposed project.

REFERENCES

• NH Department of Environmental Services -Wetlands Program
  (Obtain permit applications fact sheets, the wetlands rules, information on outreach and education, etc.)

• New Hampshire Dredge and Fill Law, RSA 482-A

GUIDELINES

• Plant vegetation so that when mature will not cause safety problems (branches overhanging chimney etc.).
• When building porches, etc., screen off underneath area with metal screening with holes no larger than 1/8” so leaves etc. do not accumulate.
• Use metal screening on soffit and vent openings.
• Stack firewood and combustibles well away from the structure.
• Leave a minimum of 30 feet around all occupied structures with only non-continuous, not-in-contact with structures, fire resistant material.
• Do not use flammable mulch near buildings; use rock or stone around foundations.
• Plant deciduous trees on south and west side of homes for summer shade.
• Have a garden hose and faucet on two opposite sides of house with enough hose to reach around the house.

Describes the impact of fire on landscapes and provides guidance on reducing the risk of fire. It includes information on fire prevention, firewise landscaping, and firewise backyard practices. The guide also provides resources for additional information and assistance.

REFERENCES

• NH Department of Agriculture, Conservation and Forestry, 2010.
• University of New Hampshire Cooperative Extension, 2010.

WHERE TO GET MORE INFORMATION AND ASSISTANCE

• New Hampshire Department of Agriculture, Conservation and Forestry, 2010.
• University of New Hampshire Cooperative Extension, 2010.

Do not plant vegetation that blocks view of house from the road.

Highly visible house address number signage.

Start fuel reduction a minimum of 100 feet away from house (The Home Ignition Area) by pruning tree branches 10 feet or higher from the ground, separating continuous fuels so they cannot act like a fuse and lead the fire to the structure, etc.
manufacturer's instructions. Oil burning equipment must be installed in accordance with the State Fire Code, NFPA 31, "Standard for the Installation of Oil Burning Equipment." A "Permit to Install" and a "Permit to Operate" along with an inspection are required from the local fire official for oil burning equipment before being used by the home owner.

- State law requires at least one electrically powered smoke detector be installed on each floor level of a residential occupancy. Smoke detectors should be tested weekly for proper operation.

- Each bedroom must have a primary means of escape (door, stairway, or ramp) and a secondary means of escape. If the secondary means is a window, it must be operable from the inside without the use of tools. The window must provide a clear opening of not less than 20 inches in width and 24 inches in height. The bottom of the opening shall be not more than 44 inches off the floor. The NFPA Life Safety Code 101 has further detailed information concerning alternatives.

- Chimneys and wood stoves must be constructed in accordance with the requirements of the State Fire Code (NFPA 211, Model Code for the Installation and Operation of Solid Fuel Heating Appliances).

- A permit to conduct open burning is required to be obtained from the local forest fire warden unless the ground is snow covered. Permittees are responsible for controlling the fire spread, and should have an ample water supply available for fire control purposes. Fire Departments can seek restitution for extinguishing costs of an uncontrolled fire.

- Propane and natural gas heating equipment must be installed in accordance with the State Fire Code "National Fuel Gas Code", NFPA 54, and "Liquefied Propane Gas Code", NFPA 58. Propane storage tanks construction plans, wetlands permits, etc. must be installed in accordance with the distance tables in NFPA 58.

- Municipalities should require building permits for residential and commercial properties. The building permit should not be issued until zoning requirements have been met and all pertinent plans have been reviewed and approved (i.e., septic system.)

- Periodic inspections should be conducted during construction at critical points, such as completion of foundation, electrical rough-in, plumbing rough-in, heating system installation, and final occupancy. A certificate of occupancy should be issued only if all requirements have been complied with.

**REFERENCES**


- NH Department of Safety State Fire Marshal's Office 33 Hazen Drive Concord, NH 03305 (603) 223-4289 [www.nh.gov/safety/divisions/firesafety](http://www.nh.gov/safety/divisions/firesafety)


**WHERE TO GET MORE INFORMATION & ASSISTANCE**

- State Fire Marshal's Office
- Local Fire Department
- Local Zoning and Building Regulations
- Local Building Official
- NH Fire Prevention Society
- National Fire Protection Association (See Directory)
**Task**

Help local fire departments work with their planning boards to get new construction in compliance with the state fire code, state statutes, and local building codes and fire safety ordinances to ensure a minimal level of fire safety for home owners and business owners.

**Description**

Property owners are required to comply with state and local building codes and fire safety regulations. Municipalities issue permits and perform on-site construction and installation inspections to ensure that proper standards have been met. Areas regulated include: roofing materials, electrical systems, heating equipment, flammable and combustible liquid storage, smoke detectors and fire alarm systems, propane and natural gas installations, and outdoor burning of brush and vegetation. Local jurisdictions may adopt requirements that are more stringent than state regulations.

**Potential Benefits**

- Reduced number of deaths and injuries from fire related accidents.
- Reduced dollar value of damages resulting from fewer occurrences of fires.
- Better quality of life from better built homes.

**Guidelines**

- On roofs of buildings, encourage the use of fire-rated material to reduce the potential of being ignited by brands and embers from wildland fires. Materials should be fire resistant and designed to meet the requirements of UL 790, “Test for Fire Resistance of Roof Covering Material.”
- Require a properly installed “fire-stop” between floor levels to stop the spread of fire throughout a building, endangering occupants and resulting in unnecessary damage. Further requirements for fire-stopping in wood frame dwellings are found in Section R-402.7 of the CABO One and Two-Family Dwelling Code.
- Consider requiring initial inspections of all newly installed heating systems and chimneys which if improperly installed can result in structure fires or lethal accumulations of carbon monoxide gas.
- Fire deaths can be reduced if smoke detectors have been properly installed in residential occupancies.
- Permits for outdoor burning of brush should describe the minimum monitoring requirements to reduce potential spreading to structures and wildland areas.
- Electrical systems should be properly designed and installed to meet recommended loadings to reduce potential fire and electrical shock hazards. All electrical systems and wiring must comply with the National Electrical Code (NFPA 70, 1993 edition).
- Clearly identify homes with addresses or street numbers to minimize possible delays in the response from emergency agencies.
- Installations of home heating equipment should be performed by properly trained and technically skilled persons. All equipment must be installed in accordance with the equipment.
**Where to Get More Information and Assistance**

- New Hampshire Department of Resources and Economic Development Division of Forests and Lands Forest Protection Bureau
  PO Box 1856
  Concord, NH 03302-1856
  (603) 271-2214

- New Hampshire Department of Safety
  State Fire Marshal’s Office
  33 Hazen Drive
  Concord, NH 03305
  (603) 223-4289

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**Tasks**

To assist local fire departments, planning agencies, and landowners in establishing easements and agreements for developing access to fire suppression devices and lanes.

**Description**

Formalized access agreements can be developed so public agencies, fire departments and private owners can work together to assist the community in developing a fire suppression program.

**Potential Benefits**

- To ensure access is guaranteed to water supplies and other suppression devices.
- To reduce potential damage from uncontrolled fires.
- To provide for a possible reduction in fire insurance rates to communities and homeowners as the result of a fire suppression plan.

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**References**

- NFPA Standards available at: www.nfpa.org
- Information brochures: “Protecting Your Home From Wildfire” and “Construction and Use of Incinerators.” Available from: NH Division of Forests and Lands www.nhdfi.org
- Information about outdoor burning and fire permits available from your local fire department.
- NFES 2295; Video, NFES 2296. Available from: National Wildfire Coordinating Group
  National Interagency Fire Center, Attn: Supply
  3833 S. Development Avenue
  Boise, ID 83705
  www.nwcg.gov/pms/pubs/catalog.htm
  500 New Jersey Avenue, NW, 6th Floor
  Washington, DC 20001
  www.iccsafe.org
- NFPA Standards available at: www.nfpa.org
- Information brochures: “Protecting Your Home From Wildfire” and “Construction and Use of Incinerators.” Available from: NH Division of Forests and Lands www.nhdfi.org
- Information about outdoor burning and fire permits available from your local fire department.
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  www.nwcg.gov/pms/pubs/catalog.htm
  500 New Jersey Avenue, NW, 6th Floor
  Washington, DC 20001
  www.iccsafe.org
  www.nhlgc.org
EASEMENT DEED FOR FIRE PROTECTION

KNOW ALL MEN BY THESE PRESENTS that
Owner/Grantor(s):
Name(s) 
Marital Status
Mailing Address
For consideration paid, hereby grants and conveys to
Fire Department/Grantee:
Name
Address
The following temporary and permanent easements on, under and across a portion of the
Grantor's property, identified in the (Town/City) tax records as
Lot # , in connection with a rural water supply apparatus to be installed on the
Grantor's property for fire fighting applications.

TEMPORARY EASEMENT A temporary easement to enter upon the Grantor's
property in order to construct and install

PERMANENT EASEMENT The Grantor also conveys a permanent easement to the
Grantee to enter upon the Grantor's property in order to utilize, maintain, inspect, train
with and test the installed on the Grantor's property.

By accepting this easement deed, the Grantee agrees that if any damage to the
Grantor's property occurs during the construction or usage of the water supply apparatus,
the Grantee shall be responsible for returning the Grantor's property to its original condition.

The following additional terms and conditions apply to this easement:

This easement extends no further rights from the Grantor to the Grantee than
those expressly described above. Meaning and intending to describe and convey
 easements which burden a portion of the property conveyed to the Grantor by deed dated
 , and recorded in the County
Registry of Deeds at Book , Page .

The burden of the permanent easement shall run with the land of the Grantor and
shall be binding on the Grantor's heirs, successors, and assigns; the temporary easement
shall terminate year(s) from the signing of this document.

EXECUTED this day of ,

Grantor's signature(s)

STATE OF NEW HAMPSHIRE
COUNTY OF

The foregoing instrument was acknowledged before me this day of ,
by: 
Notary Public/Justice of the Peace
My Commission Expires:

RURAL FIRE RESOURCE QUICK GUIDE

STANDARDS & GUIDELINES FOR COMMUNITY DEVELOPMENT

TASK
Help local Fire Departments and/or Planning Boards gather information and adopt community
wide development standards for rural fire protection.

DESCRIPTION
These development standards and guidelines can assist the fire department and planning boards in adopting requirements for new
development. These standards would allow
for expedient response of fire apparatus, recommend ways to limit spread of fire to
adjacent structures and help property owners in protecting their property from fire.

POTENTIAL BENEFITS

- Useful guidelines to allow access and egress for fire and other emergency
general and year round) to adequately
- Make sure road widths are sufficient for	wo-way fire apparatus movement.
- Ensure that bridges and other structures will support fire trucks.
- Roads should provide liberal areas for
turn and reverse
direction (turning radius at cul-de-sacs).
- Driveways and houses should be easily visible and clearly identified so they can be
located in emergency situations.
- No flammable material should be within reach of structures. Information for maintaining
defensible space should be made available
to residents.
- Conduct fire prevention and safety workshops in regional areas to introduce
fire education message to residents.

GUIDELINES

- Locate sufficient water sources (natural or
- Make sure road widths are sufficient for
two-way fire apparatus movement.
- Ensure that bridges and other structures will support fire trucks.
- Roads should provide liberal areas for emergency vehicles to turn and reverse
direction (turning radius at cul-de-sacs).
- Driveways and houses should be easily visible and clearly identified so they can be
located in emergency situations.
- No flammable material should be within reach of structures. Information for maintaining
defensible space should be made available
to residents.
- Conduct fire prevention and safety workshops in regional areas to introduce
fire education message to residents.