



Planning Board Agenda

Thursday, September 9, 2010, 5:00 p.m.
Bryant Womack Justice & Administration Center
40 Courthouse Street
Columbus, North Carolina 28722

- I. Call to order
- II. Approve Agenda
- III. Approval of Minutes
- IV. The Farms at Mill Spring, Phase 4, Security Release Request
- V. Water Supply for Subdivisions
- VI. Other Business
- VII. Adjournment



Planning Board Minutes

Thursday, July 8, 2010, 5:00 p.m.

Bryant Womack Justice & Administration Center

Members Present: Lee Bradley, Bill Ennis, John Hansborough, Wayne Horne, Lisa Krolak, and Harry Petersen

Member(s) Absent: William Deck, Mike Stone

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- I. Call to order
Bill Ennis called meeting to order.
 - II. Approve Agenda
Lisa Krolak made a motion to approve the July 8, 2010 Planning Board Agenda as presented. Harry Petersen seconded. All in favor
 - III. Approval of Minutes
Lisa Krolak made a motion to approve the June 10, 2010 meeting minutes as written. Harry Petersen seconded. All in favor
 - IV. Tower Ordinance
Marche Pittman, Polk County MIS Director, spoke to the Planning Board. He explained that the proposed text amendments to the Tower Ordinance would be for Public Safety Facilities only.
The proposed text amendments are as follows:
Section 201. Public Safety Facilities. Add definition of Public Safety Facilities
Section 301. Permits Required. Allowing an exemption for public safety facilities provided it meets the following criteria.
 - The tower shall not exceed 120' in height
 - A fall radius, equal to the height of the tower, shall only encroach property owned by the State of North Carolina or a local government.
 - No antennas shall be placed on the tower except those dedicated to the public safety.Wayne Horne made a motion to approve the Tower Ordinance text amendments as proposed; these changes are neither consistent nor inconsistent with the Polk County Comprehensive Plan, and to send them to the Board of Commissioners for adoption. John Hansborough seconded. All in favor.
 - V. Minor Subdivision – Nelson Subdivision – Preliminary Plat
Kent Nelson, owner, presented the preliminary plat for the 5 lot minor subdivision in White Oak Township, tax parcel P92-95. Cathy Ruth stated that the preliminary plat will meet all the county and NC DOT requirements once the setbacks are added.

John Hansborough made a motion to approve the preliminary plat of the Nelson Subdivision. Wayne Horne seconded. All in favor.
 - VI. Minor Subdivision – Billy Gibbs Subdivision – Preliminary Plat
Cathy Ruth presented the preliminary plat for the 5 lot minor subdivision in Cooper Gap Township, tax parcel P51-74. She stated that she talked to NCDOT and no driveway permits would be needed and the preliminary plat meets all the County's requirements.

Wayne Horne made a motion to approve the preliminary plat of the Gibb's Subdivision. Lee Bradley seconded. All in favor

- VII. Derbyshire - Request Partial Release of Security for Improvements
David Odom and Brian Carroll were present for questions. The amount requested for release is \$146,765.55 this will complete the water system for Phase 1. The overage amount of \$66,176.20 will be added to the amount left in the account for the original dam repair estimate (125%) leaving the total amount left in escrow to be \$165,051.20 to complete the dam repair. A new estimate for the dam repair will be given to the County and if the amount is more than the amount in the account, Derbyshire will bond the difference.

John Hansborough made a motion to approve the partial release of \$146,765.55 for the completion of the waterline in Phase 1 of Derbyshire. The remaining \$165,051.20 will stay in escrow for the dam repair. Lee Bradley seconded. All in favor.

- VIII. Future Land Use Map
Cathy Ruth made the recommendation to amend the Future Land Use Map from the 20/20 Comprehensive Plan, making the RE-1 zoning district part of the Green Space sector instead of the Controlled Growth sector which would make it more consistent with the intent of the existing zoning in that area. Map 24 of the 20/20 Comprehensive Plan, would reflect the change as well as the percentages in table G on page VI-8, Future Land Use Acreages.

John Hansborough made a motion to amend the Future Land Use Map, map 24, and the percentages in the table on page VI-8 from the Polk County 20/20 Comprehensive Plan and to send to the Board of Commissioners for approval. Harry Petersen seconded. All in favor

- IX. Other Business
Cathy Ruth told the Board, she has looked into how other jurisdictions deal with nonconformities as requested at the last meeting. She stated she would recommend that the Planning Board wait and let the Unified Development Ordinance Committee address the issue.
Cathy Ruth also announced that the representatives from the Planning Board to the Unified Development Ordinance Committee as appointed by the Board of Commissioners are Wayne Horne, Lisa Krolak, and Harry Petersen.

- X. Adjournment
Lee Bradley made a motion to adjourn. Wayne Horne seconded. All in favor.

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POLK COUNTY MEETING MINUTES
August 2, 2010 7:00PM
FOUR (4) PUBLIC HEARINGS
BOARD OF COMMISSIONERS' REGULAR MEETING
R. Jay Foster Hall of Justice, Womack Building
Columbus, N.C.

1. Call to Order/Welcome – Chairperson Walker called the meeting to order.
2. Invocation – Commissioner Watson gave the invocation.
3. Pledge of Allegiance – Commissioner Melton led the pledge.
4. ESGR Presentations – Dr. Robert E. Lair, Jr. of the National Committee for Employer Support of the Guard and Reserve presented a Statement of Support for the Guard and Reserve to the Board. He also presented an award recognizing Polk County Government as a Patriotic Employer.
5. Approval of Minutes – Commissioner McDermott made a motion to approve the July 12, 2010, Regular Board of Commissioners' meeting minutes, seconded by Vice-Chairperson Gasperson and the motion carried unanimously.
6. Approval of Agenda – County Manager Whitson added the following items: 17a. – BA #2, Purchase of Transportation Van; 10a. – State Approval of the Human Services Facility; 10b. – Soliciting Bids and Prequalification for the Human Services Facility. Vice-Chairperson Gasperson made a motion to approve the amended agenda, seconded by Commissioner McDermott and the motion carried unanimously.
7. Public Hearings – Chairperson Walker announced that the public hearings were advertised in the *Tryon Daily Bulletin* July 19, 2010, and July 26, 2010. Planner Cathy Ruth will present recommendations from the Planning Board.
 - 1) An Ordinance Amending the Polk County Tower Ordinance – Chairperson Walker called the public hearing to order. The recommended changes to the ordinance are on file in the Manager's office. There were no citizen comments. Commissioner Watson made a motion to adjourn the public hearing, seconded by Commissioner Melton and the motion carried unanimously.
 - 2) An Ordinance Amending the Subdivision Ordinance of Polk County - Chairperson Walker called the second public hearing to order. The recommended changes to the ordinance are on file in the Manager's office. Citizen Comments: Mr. Bill Smith recommended that Section 3 of the proposed ordinance be replaced with the following. "The fire water supply for all subdivisions with any lots further than 1,000 road feet from any recognized

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fire hydrant shall have an approved, recognized water supply with dry hydrants or sprinklers. The approval authority shall be the NC Dept. of Insurance, Office of State Fire Marshal. A public protection class of 8 or less shall apply." Commissioner Watson recommended the ordinance be sent back to the Planning Board for further review. Commissioner McDermott made a motion to adjourn the public hearing, seconded by Vice-Chairperson Gasperson and the motion carried unanimously.

- 3) An Ordinance Amending the Zoning Ordinance of Polk County - Chairperson Walker called the third public hearing to order. The recommended changes to the ordinance are on file in the Manager's office. There were no citizen comments. Commissioner Watson recommended the ordinance be tabled until the next meeting since the recommended changes being presented were not included in the original meeting packet. Commissioner McDermott made a motion to adjourn the public hearing, seconded by Vice-Chairperson Gasperson and the motion carried unanimously.
- 4) Amendments to Map 24 (Future Land Use Map) and Page VI-8 (Future Land Use Acreages) of the Polk County 20/20 Vision Plan – Chairperson Walker called the fourth public hearing to order. There were no citizen comments. Commissioner McDermott made a motion to adjourn the public hearing, seconded by Vice-Chairperson Gasperson and the motion carried unanimously.
8. Vote on Amendments – Ordinance #2 was sent back to the Planning Board for review. Ordinance #3 was tabled until the next BOC meeting. Whereas the Board of Commissioners finds that the ordinance amending the Polk County Tower Ordinance is neither consistent nor inconsistent with the Polk County 20/20 Vision Plan, Commissioner Watson made a motion to approve the tower ordinance, seconded by Vice-Chairperson Gasperson, and the motion carried unanimously. Vice-Chairperson Gasperson made a motion to approve the resolution adopting the amendments to Map 24 (Future Land Use Map) and Page VI-8 (Future Land Use Acreages) of the Polk County 20/20 Vision Plan. The motion received no second and the motion failed.
9. Naming of the Proposed Human Services Facility – Vice-Chairperson Gasperson and Chairperson Walker lauded Polk County native Howard Greene for his service in the U.S. Army during WWII, and his record of volunteerism and community involvement in Polk County. Vice-Chairperson Gasperson made a motion to name the new human services facility "The Howard Greene Human Services Building", seconded by Commissioner McDermott. Commissioner Melton said that while Mr. Greene is a candidate worthy of recognition, it is his recommendation that a committee be formed to allow other Polk County veterans to be considered in naming the building. Commissioner McDermott said that Mr. Greene is an exceptional veteran and volunteer, and the Board should move forward in naming the building after him. Commissioner Watson said that while



Presurvey Information Request for Water Supply for Fire Suppression

NORTH CAROLINA DEPARTMENT OF INSURANCE is responsible for the certification and rating of fire departments in North Carolina. An important part of the information NORTH CAROLINA DEPARTMENT OF INSURANCE, OFFICE OF STATE FIRE MARSHAL provides to insurers is a community's Public Protection Classification (NORTH CAROLINA RESPONSE RATING SYSTEM) number. The NORTH CAROLINA RESPONSE RATING SYSTEM program evaluates community fire suppression delivery systems according to a uniform set of criterion, incorporating nationally recognized standards developed by the National Fire Protection Association.

Because a community's investment in fire mitigation is a proven and reliable predictor of future fire losses, insurance companies rely upon NORTH CAROLINA RESPONSE RATING SYSTEM program to help establish fair premiums for fire insurance – generally offering lower premiums in communities with better fire protection.

NORTH CAROLINA OFFICE OF STATE FIRE MARSHAL conducts evaluations of water supply for fire suppression purposes as part of the NORTH CAROLINA RESPONSE RATING SYSTEM program. This section of the review constitutes 40% of the available NORTH CAROLINA RESPONSE RATING SYSTEM score for the community.

Following is a six-page questionnaire. Please record as much of the information as possible on these forms. For questions that are not applicable to your community, please indicate "Does not apply" or "DNA".

Some questions indicate that an exhibit is necessary and imply the file name (e.g., "Exhibit 3A – 3 – Maximum Daily Consumption") that should be used. This nomenclature will assist OFFICE OF STATE FIRE MARSHAL in their survey.

Certain questions may need multiple answers. For example, question 1 asks for contact information for the water department and provides the space to record the data for a single water department. Commonly, communities receive service from multiple water providers. To accommodate the entry of multiple providers, a form has been provided in Appendix A for additional information. When additional forms are needed, it is anticipated that the number needed will be copied by the community.

Your cooperation in assembling this information prior to the OFFICE OF STATE FIRE MARSHAL visit will greatly assist in expediting the survey as well as helping to ensure that your community receives all of the credit to which it is entitled. Answers may need to be changed if forms are done for different FD or being updated from past inspection data. Be sure all information is current and up to date for each agency.



Presurvey Information Request For Water Supply for Fire Suppression

Name of Fire Agency: _____ Date of Information: _____
 Name of person completing Forms: _____ Phone Number: _____

Background Information

1. Indicate the points of contact(s) for the water department, district, or provider providing services to the fire agency's jurisdiction:

Water Provider: _____
 Contact Name: _____ Title: _____
 Email: _____
 Street Address: _____
 City: _____ Phone: _____

For additional water providers, please indicate point of contact information on an attached page. (see Appendix A)

2. Please provide a brief outline of the system including the source and type of system; impounding reservoirs, streams, lakes, wells, gravity, direct pumping, intermittent pumping, filters, elevated tank, number of pressure zones, etc. Include a hydraulic schematic or diagram of the water supply system(s) showing the pressure zones or service levels and depicting all pumps, treatment facilities, water storage facilities, and pressure reducing valves (stations).

3. Please indicate the Maximum Daily Consumption (MDC) within last 3 years and the date that it occurred. This figure should be due to heavy consumption (usage), not one-of-a-kind events such as a major water main break or major fire that do not relate to consumption.

_____ mgd Date of MDC: _____
 a. What was the average daily consumption rate over the last 12 months? _____ mgd

Please provide an exhibit to document this information (Exhibit 3A – 3 – Maximum Daily Consumption)

Supply Source(s)

4. For flowing bodies of water, please provide the following information for each source of supply:

- a. Type of supply source (e.g.: river, stream, etc.): _____
- b. Name of supply source: _____
- c. Distance from the distribution system: _____ miles
- d. If the source of supply is a river or stream, provide the minimum flow rate over the last 12 months: _____ gph
- e. Is the supply limited by water rights? Yes: No:
- f. Is the supply limited by governmental authority? Yes: No:
- g. Are there other limitations or restrictions to the supply? Yes: No:

If the answer to any of the above three questions is yes, describe the limitation:

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For additional sources of supply, please record the information on an attached page (see Appendix A).

- 5. a. Location of supply source: _____
- b. Type of supply source: Well Spring
- c. Normal flow capacity: _____ gph
- d. Minimum capacity (excluding extreme dry weather conditions): _____ gph
 - i. What is the length of time of the minimum capacity? _____ min.
- e. Is the supply limited by water rights? Yes: No:
- f. Is the supply limited by governmental authority? Yes: No:
- g. Are there other limitations or restrictions to the supply? Yes: No:

If the answer to any of the above three questions is yes, describe the limitation:

For additional sources of supply, please record the information on an attached page (see Appendix A).

- 6. For each impounded supply, please provide the following information:
 - a. Location of supply source: _____
 - b. Capacity of supply source: _____ mg
 - c. Approximate minimum capacity of supply source: _____ mg
 - d. Estimated safe yield: _____ mgd
 - e. Is the supply limited by water rights? Yes: No:
 - f. Is the supply limited by governmental authority? Yes: No:
 - g. Are there other limitations or restrictions to the supply? Yes: No:

If the answer to any of the above three questions is yes, describe the limitation:

For additional impounded supplies, please record the information on an attached page (see Appendix A).

- 7. Is an emergency supply source available through connections from other systems or from separate sources, storage, or equipment not normally used that would assist in the increase of fire flow when necessary? Yes: No:

If the answer to the above is yes, please provide the following information for each supply source:

- a. Emergency supply source: _____
- b. Available flow from the emergency supply source: _____ gpm for _____ hours
- c. How long is it expected to take to activate the emergency supply? _____ min.

For additional emergency supply sources, please record the information on an attached page (see Appendix A).

Water Storage

- 10. For ground or below-ground storage, where the average daily minimum storage must be repumped, please provide the following information:
 - a. What is the storage location? _____
 - b. Indicate the service (main service, high service, low service, etc.) level (that part of the fire protection area distribution system that is served by one or more sources of supply but is separated



from the remaining distribution system by closed valves, check valves or pressure regulating equipment, or is not connected):

- c. Indicate the size of the storage tank: _____ gallons
- d. Indicate the elevation at the bottom of the tank: _____ feet
- e. Indicate the overflow elevation: _____ feet
- f. Indicate the depth of the tank (overflow – base) _____ feet
- g. What type of pump is providing the suction? high-lift: transfer: booster:
- h. Identify the type of storage: Standpipe: Surface reservoir: Ground level tank:
Lake: Clear well: Other:
- i. What is the average daily minimum water storage that is maintained? _____ gallons

Please provide an exhibit to document the average daily minimum water storage (Exhibit 3A – 10 – Average daily minimum water storage)

For additional below ground storage sources, please record the information on an attached page (see Appendix A).

11. For storage floating on the distribution system (gravity storage), please provide the following:

- a. What is the storage name or location? _____
- b. Indicate the service (main service, high service, low service, etc.) level (that part of the fire protection area distribution system that is served by one or more sources of supply but is separated from the remaining distribution system by closed valves, check valves or pressure regulating equipment, or is not connected): _____
- c. Indicate the size of the storage tank: _____ gallons
- d. Indicate the elevation at the bottom of the tank: _____ feet
- e. Indicate the overflow elevation: _____ feet
- f. Indicate the depth of the tank (overflow – base) _____ feet
- g. If there are multiple tanks on this service level, are there altitude valves that would allow filling without causing tank overflow? Yes: No:
- h. Identify the type of storage: Standpipe: Ground level tank: Elevated tank:
Reservoir: Clear well: Other:
- i. Indicate the shape of the tank: Cylindrical: Sphere: Ellipsoidal:
Double Ellipsoidal: Other:
- j. Indicate the inside diameter of the tank: _____ linear feet
- k. What is the average daily minimum water storage that is maintained? _____ gallons

Please provide an exhibit to document the average daily minimum water storage (Exhibit 3A – 11 – Average daily minimum water storage)

- l. What is the connection pipe diameter from the down pipe to the distribution system? _____ in

For additional floating storage sources, please record the information on an attached page (see Appendix A).

Pumps

12. For low lift, transfer, high lift, and booster pumps used in the water supply distribution system, please provide the following information for each pump:

- a. What is the location of the pump? _____
- b. What is the pump number or name? _____
- c. What type of lift does the pump provide? low lift: high lift: transfer: booster:
- d. What is the pump's rated capacity as indicated on the pump's data plate?
_____ mgd _____ gpm
- e. What is the pump's actual capacity? _____

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- f. _____ mgd _____ gpm
Where does the pump take the water from? _____
- g. _____
Where does the pump deliver the water to? _____

For additional pumps, please record the information on an attached page (see Appendix A).

13. What is the simultaneous operating capacity for:
- a. low lift pumps with considerations for limitation by suction or discharge piping or by power arrangement? _____ gpm
 - b. high lift pumps with considerations for limitation by suction or discharge piping or by power arrangement? _____ gpm
 - c. Transfer pumps with considerations for limitation by suction or discharge piping or by power arrangement? _____ gpm
 - d. booster pumps with considerations for limitation by suction or discharge piping or by power arrangement? _____ gpm

14. What is the combined filter capacity in gallons per minute for each treatment plant?
- a. Treatment plant name: _____ Total filter capacity: _____ gpm
 - b. If the filter capacity can be overloaded, what percent is permitted? _____ %

Please provide an exhibit to document the filter capacity and overload (Exhibit 3A - 14 - Filter capacity/overload)

- c. Describe any flow limitations from other treatment facilities such as sedimentation basins, mixing chambers, aerators, etc.: _____

For additional treatment plants, please record the information on an attached page (see Appendix A).

Water System Mapping

15. Please provide the following mapping information:
- a. Are current water main maps available to the fire department?
Yes: No:
 - b. Are hydrants mapped and are the maps readily available for use by fire department?
Yes: No:
 - c. Are hydrants mapped on a GIS layer?
Yes: No:
 - d. Are hydrants identified regarding available flows or size of mains?
Yes: No:
 - e. Are hydrant maps readily available on fire department apparatus?
Yes: No:

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Fire Hydrant Information

16. Please provide the following information regarding the fire hydrants within your community:
- a. Are hydrants installed per recognized standard? Yes: No:
 - b. Indicate the number of hydrants on a 6-in or larger branch line with 5" or greater barrels with:
 - a pumper outlet: _____
 - No pumper outlet but (2) or more 2½" outlets: _____
 - No pumper outlet but only (1) 2½" outlet: _____
 - c. Indicate the number of hydrants on a 6-in or larger branch line with a barrel less than 5" with:
 - a pumper outlet: _____
 - No pumper outlet but (2) or more 2½" outlets: _____
 - No pumper outlet but only (1) 2½" outlet: _____
 - d. Indicate the number of hydrants on a 4-in or smaller branch line with:
 - a pumper outlet: _____
 - No pumper outlet but (2) or more 2½" outlets: _____
 - No pumper outlet but only (1) 2½" outlet: _____
 - e. Indicate the number of flush type, in-ground hydrants: _____
 - f. Indicate the number of cistern or other drafting sites: _____
 - g. Indicate the total number of fire hydrants: _____
 - h. Of the above total, how many are private hydrants? _____
 - i. What percent of the hydrants operate (turn on and off) in a uniform direction? _____ %
 - j. What percent of the hydrants have operating nuts of the same size? _____ %
 - k. What percent of the hose threads are the same for each outlet size? _____ %
17. Please provide the following information regarding the inspection and condition of the fire hydrants within your community:
- a. Are inspections of fire hydrants conducted in your community? Yes: No:
 - i. What department conducts the inspections? _____
 - ii. What is the date of the most recent inspection? _____
 - iii. Regarding the frequency of inspections, what is the average time interval between the three most recent hydrant inspections?
½ year: 1 year: 2 years: 3 years: 4 years: 5 years or more:
 - iv. Are current records of hydrant inspections maintained? Yes: No:
If the answer to the above question is yes, provide an exhibit showing a sample of hydrant inspection records for at least five hydrants (Exhibit 3A – 17 – Hydrant Records)
 - v. What percent of the hydrants are flushed as part of the inspection? _____ %
 - vi. What percent of the hydrants are tested for leaks as part of the inspection? _____ %
 - vii. Does the inspection of cisterns or suction points include actual drafting with a pumper?
Yes: No:
18. Provide an exhibit of hydrant flow test information that would indicate hydrant location, date of test, static pressure, residual pressure, observed flow, and flow available at 20 psi residual pressure (Exhibit 3A – 18 – Hydrant flow information).

(a)

from the remaining distribution system by closed valves, check valves or pressure regulating equipment, or is not connected): _____

- c. Indicate the size of the storage tank: _____ gallons
- d. Indicate the elevation at the bottom of the tank: _____ feet
- e. Indicate the overflow elevation: _____ feet
- f. Indicate the depth of the tank (overflow -- base) _____ feet
- g. What type of pump is providing the suction? high-lift: transfer: booster:
- h. Identify the type of storage: Standpipe: Surface reservoir: Ground level tank:
Lake: Clear well: Other:
- i. What is the average daily minimum water storage that is maintained? _____ gallons

Please provide an exhibit to document the average daily minimum water storage (Exhibit 3A - 10 - Average daily minimum water storage)

For additional below ground storage sources, please record the information on an attached page (see Appendix A).

11. For storage floating on the distribution system (gravity storage), please provide the following:

- a. What is the storage name or location? _____
- b. Indicate the service (main service, high service, low service, etc.) level (that part of the fire protection area distribution system that is served by one or more sources of supply but is separated from the remaining distribution system by closed valves, check valves or pressure regulating equipment, or is not connected): _____
- c. Indicate the size of the storage tank: _____ gallons
- d. Indicate the elevation at the bottom of the tank: _____ feet
- e. Indicate the overflow elevation: _____ feet
- f. Indicate the depth of the tank (overflow - base) _____ feet
- g. If there are multiple tanks on this service level, are there altitude valves that would allow filling without causing tank overflow? Yes: No:
- h. Identify the type of storage: Standpipe: Ground level tank: Elevated tank:
Reservoir: Clear well: Other:
- i. Indicate the shape of the tank: Cylindrical: Sphere: Ellipsoidal:
Double Ellipsoidal: Other:
- j. Indicate the inside diameter of the tank: _____ linear feet
- k. What is the average daily minimum water storage that is maintained? _____ gallons

Please provide an exhibit to document the average daily minimum water storage (Exhibit 3A - 11 - Average daily minimum water storage)

- l. What is the connection pipe diameter from the down pipe to the distribution system? _____ in

For additional floating storage sources, please record the information on an attached page (see Appendix A).

Pumps

12. For low lift, transfer, high lift, and booster pumps used in the water supply distribution system, please provide the following information for each pump:

- a. What is the location of the pump? _____
- b. What is the pump number or name? _____
- c. What type of lift does the pump provide? low lift: high lift: transfer: booster:
- d. What is the pump's rated capacity as indicated on the pump's data plate?
_____ mgd _____ gpm
- e. What is the pump's actual capacity? _____

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Presurvey Information Request For Water Supply for Fire Suppression

Name of Fire Agency: _____ Date of Information: _____
Name of person completing Forms: _____ Phone Number: _____

Background Information

1. Indicate the points of contact(s) for the water department, district, or provider providing services to the fire agency's jurisdiction:

Water Provider: _____

Contact Name: _____ Title: _____

Email: _____

Street Address: _____

City: _____ Phone: _____

For additional water providers, please indicate point of contact information on an attached page. (see Appendix A)

2. Please provide a brief outline of the system including the source and type of system; impounding reservoirs, streams, lakes, wells, gravity, direct pumping, intermittent pumping, filters, elevated tank, number of pressure zones, etc. Include a hydraulic schematic or diagram of the water supply system(s) showing the pressure zones or service levels and depicting all pumps, treatment facilities, water storage facilities, and pressure reducing valves (stations).

3. Please indicate the Maximum Daily Consumption (MDC) within last 3 years and the date that it occurred. This figure should be due to heavy consumption (usage), not one-of-a-kind events such as a major water main break or major fire that do not relate to consumption.

_____ mgd Date of MDC: _____
a. What was the average daily consumption rate over the last 12 months? _____ mgd
Please provide an exhibit to document this information (Exhibit 3A - 3 - Maximum Daily Consumption)

Supply Source(s)

4. For flowing bodies of water, please provide the following information for each source of supply:

a. Type of supply source (e.g.: river, stream, etc.): _____

b. Name of supply source: _____

c. Distance from the distribution system: _____ miles

d. If the source of supply is a river or stream, provide the minimum flow rate over the last 12 months: _____ gph

e. Is the supply limited by water rights? Yes: No:

f. Is the supply limited by governmental authority? Yes: No:

g. Are there other limitations or restrictions to the supply? Yes: No:

If the answer to any of the above three questions is yes, describe the limitation:

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NFPA 1142
Standard on
Water Supplies for Suburban and Rural Fire Fighting
2007 Edition

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This edition of NFPA 1142, *Standard on Water Supplies for Suburban and Rural Fire Fighting*, was prepared by the Technical Committee on Forest and Rural Fire Protection. It was issued by the Standards Council on July 28, 2006, with an effective date of August 17, 2006, and supersedes all previous editions.

This edition of NFPA 1142 was approved as an American National Standard on August 17, 2006.

Origin and Development of NFPA 1142

This document originally was issued in 1968 as a tentative document titled NFPA 25, *Recommended Practices for Water Supply Systems for Rural Fire Protection*. It was reissued in 1969 without the tentative status. In 1975 the document was changed to a standard and renumbered and retitled as NFPA 1231, *Standard on Water Supplies for Suburban and Rural Fire Fighting*.

The standard continued to be maintained and enhanced with 1984, 1989, and 1993 editions. The 1999 edition was renumbered as NFPA 1142, in keeping with the Committee's plan to group all of its documents within a number range.

The 2001 edition incorporated much of the information about the design of dry hydrants, formerly found in the annexes, into the requirements to encourage improved design and performance.

The 2007 edition is a complete revision to better organize the requirements in the standard and to better differentiate between alternate water supplies for fire fighting and municipal-type water systems. The material in Annex A on designing dry hydrant systems has been reorganized and updated into a separate Annex I. The other annexes have been reviewed and updated to reflect current practices.

The Forest and Rural Fire Protection Committee dedicates this edition of NFPA 1142 to Louis Witzeman, a member of the Committee from 1972 until just before his death in 2004. Louis was a key member in establishing the research and developing the concepts upon which the requirements in this standard are based.

Technical Committee on Forest and Rural Fire Protection

Randall K. Bradley, *Chair*

Lawrence Livermore National Laboratory, CA [U]

John E. Bunting, *Secretary*

New Boston Fire Department, NH [U]

Lynn R. Biddison, Fire-Trol Holdings LLC, AZ [IM]

James D. Bowman, American Forest & Paper Association, WA [M]

Martin P. Carrier, Carrier Business Advisory Services, Limited, NH [U]

Rep. National Volunteer Fire Council

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6.3.6.10 Roof Decks. Roof decks shall be constructed of spline or tongue-and-groove plank not less than 2 in. (50 mm) in thickness; or of laminated planks not less than 3 in. (75 mm) in width, set close together on edge, and laid as required for floors; or of 1½ in. (28.5 mm) thick interior wood structural panel (exterior glue); or of approved noncombustible or limited-combustible materials of equivalent fire durability.

6.3.7 Type V (111 or 000) Construction. Type V (111 or 000) construction shall be that type in which exterior walls, bearing walls, columns, beams, girders, trusses, arches, floors, and roofs are entirely or partially of wood or other approved combustible material smaller than material required for Type IV construction. In addition, structural members shall have fire resistance ratings not less than those specified in Table 6.3.1.

NEXT CHAPTER

Chapter 7 Water Supply

7.1 Approved Water Supply.

7.1.1* Any water supply source used to meet the requirements of this standard shall be of a quality approved by the AHJ.

7.1.2 The water supply source shall be maintained and accessible on a year-round basis.

7.1.3 In locations where adequate municipal-type water systems are not provided and additional fire protection is needed, minimum water supplies shall be established in, or transportable to, the designated area.

7.1.4 Unless otherwise permitted by the AHJ, all approved nonpressurized water supply sources shall be accessible using dry hydrants that meet the requirements of this standard.

7.1.5* To be acceptable, water supply sources shall maintain the minimum capacity and delivery requirements on a year-round basis, based on the 50-year drought for the water source.

7.2* Water Use Agreements.

The AHJ shall enter into a water use agreement when a private water supply source is to be used to meet the requirements of this standard.

7.3 Identifying Water Sources.

A water source indicator approved by the AHJ shall be erected at each water point identifying the site for fire department emergency use.

7.4 Fire Department Connections.

Any fitting provided at a water source to permit a fire apparatus to connect to the water source shall be approved by the AHJ and shall conform to NFPA 1963, Standard for Fire Hose Connections.

7.5* Access to Water Sources.

Roads providing a means of access to any required water supply shall be constructed and maintained in accordance with the following:

- (1) Roadways shall have a minimum clear width of 12 ft (3.7 m) for each lane of travel.
- (2) Turns shall be constructed with a minimum radius of 100 ft (30.5 m) to the centerline.

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- (3) The maximum sustained grade shall not exceed 8 percent.
- (4) All cut-and-fill slopes shall be stable for the soil involved.
- (5) Bridges, culverts, or grade dips shall be provided at all drainageway crossings; roadside ditches shall be deep enough to provide drainage with special drainage facilities (tile, etc.) at all seep areas and high water-table areas.
- (6) The surface shall be treated as required for year-round travel.
- (7) Erosion control measures shall be used as needed to protect road ditches, cross drains, and cut-and-fill slopes.
- (8)* Where turnarounds are utilized during fire-fighting operations, they shall be designed with a diameter of 120 ft (36.5 m) or larger, as required, to accommodate the equipment of the responding fire department.
- (9) Load-carrying capacity shall be adequate to carry the maximum vehicle load expected.
- (10) The road shall be suitable for all-weather use.

7.6 Mobile Water Supply Training.

To promote operational safety and effectiveness, the AHJ shall determine what training is required. (*See C.10.*)

7.7 Records.

7.7.1 A record of each water supply shall be prepared and periodically updated.

7.7.2 The records shall be retained in accordance with the record retention policy of the jurisdiction or state.

7.7.3 Records developed to meet the requirements of this standard shall be retained for a minimum of 3 years after the agreement, facility, or equipment is no longer used for its original purpose.

NEXT CHAPTER

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REQUIREMENTS TO MEET THE 9S RATING FOR INITIAL CERTIFICATION/RE-INSPECTION OF FIRE DEPARTMENTS IN NORTH CAROLINA

Pursuant to G. S. 58-2-40, and G. S. 58-36-10 (3), the Insurance Commissioner authorized the standard known as Administrative Procedures Code Section .0500, Initial Certification/Re-Inspection of Fire Departments. The result of this action was the development of requirements by which all fire departments will be certified with a 9S rating (effective 1987) for insurance grading purposes. This provides for the eligibility of the department's personnel to participate in the Fireman's Pension Fund and the Firemen's Death Benefit Act and the fire department's participation in the Firemen's Relief Fund. The "S" attached to the 9 classification designates that fire department as having met the current, minimum standards for a rated class 9 or split 9 fire department in North Carolina, (Ref.: G.S. 86-25; G.S. 58-84-1; G.S. 143-166-1).

The following are minimum requirements which a fire department must meet in order to meet and/or retain the 9S classification:

Fire Department Organization

1. The fire department shall be incorporated under Chapter 55A of the General Statutes of North Carolina or be operated by a city, county or sanitary district as a division of that governmental unit.
2. If the fire department is incorporated, it shall operate under a contract with either a city, county or sanitary district or an combination thereof.
3. The board of county commissioners shall establish and define the area of responsibility outside of a given municipality. A map and description of the insurance fire district shall be approved by the Office of State Fire Marshal (OSFM) of the North Carolina Department of Insurance. Changes in the insurance district boundaries shall be noted on an appropriate map and be approved by the Office of State Fire Marshal.

Personnel

1. A. A fire department shall have a minimum of 20 personnel with 18 designated as firefighters and 2 as traffic personnel or show through documentation that an average of 12 firefighters have responded to each of the previous 20 structure fires.

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- B. Initial certification of a new fire district shall require the 20 personnel roster.
- C. Substation: If the 20-personnel option (as described in Section A above) is used, 8 additional personnel shall be added to the roster for each substation. If the average responding personnel is used by the main station, 4 additional personnel shall be required for each substation.
- D. Each fire department shall assure the response of at least four members and one engine to all fires and fire alarms in structures. The chief may be one of the four responding members. Response of a fire department, as primary first alarm department, to a fire or fire alarm in a structure within its established fire insurance district with less than the minimum required engine or manpower shall be considered by the OSFM to be a Non-Response. Any department determined by the OSFM to have two or more "Non-Response" records shall be placed by the OSFM on probation for a period of 12 months. A fire department on probation shall submit quarterly to the OSFM inspector all fire and fire alarm in structure response records for the next 12 consecutive calendar months that show there have been no additional "non-responses" within that 12 month period. If the fire department fails to submit the quarterly report, the insurance district for the fire department shall be designated a "Class 10" by the OSFM.

Meeting and Drills

1. All members shall comply with the training requirements set forth in G.S. 58-86-25, which states that fire departments shall provide four hours monthly of drills and meetings, for a total of 48 hours per year. Each firefighter shall attend at least 36 hours of drills and meetings in each calendar year.
2. While it is left up to the chief of the department to determine what constitutes these 36 hours of meetings and drills, personnel are encouraged to attend as many hours as possible of actual fire training.

Alarm and Communications

1. Communications must be reliable for reporting of emergencies, notifying firefighters and dispatching apparatus.
2. The system must have a telephone listing for fire emergencies that reaches a location that can receive calls and dispatch apparatus and personnel 24 hours per day.
3. The fire station shall be equipped with a siren and/or each listed firefighter shall be equipped with a pager capable of being toned by the central communications center.

Records and Documents

A copy of the following documents should be on file in the Office of State Fire Marshal. If one is not on file, the inspector will obtain it at the time of inspection:

1. Charter (Articles of Incorporation) - indicates that the fire department is chartered as a nonprofit corporation under G.S. 55A through the Secretary of State's Office. If a municipal department operates under municipal government, they will not have a separate charter.

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2. **Contract with County** - this is an agreement between the Governing body and the County which gives the fire department the authority to provide fire protection in an area outside of the municipality. If the fire district operates in more than one county, a contract must be obtained from those counties.
3. **Verification by city/town** - if the fire department is chartered as a part of municipal government, there should be written verification of that recognition.
4. **Map and Description** - a hand drawn map and written description or a GIS computer generated map of its initial or revised fire district. For Rural Districts a maximum distance of five road miles (9S), or 6 road miles (9E) from the fire station. For Municipal Districts a maximum distance of five road miles from the fire station(s). The district should be indicated on the map.
5. **Designation of Insurance District** - a Designation form, resolution or other verification that the county commissioners have approved the boundaries of the insurance district.
6. **Roster of Active Firefighters** - this document should show the name, and designation as firefighter or traffic control personnel.
7. **Service Test on Pumper** - the service test on the "first out" pumper must be complete and accurate and have been run within 12 months prior to the fire department inspection. The test should be run the full 40 minutes, form filled out and signed.
8. **Certified Weight Tickets** - weight tickets from a certified scale showing the gross (full) weight of the "first out" pumper and tanker are required. It is also recommended that all vehicles be periodically weighed.
9. **Protective Clothing Form** - if the required sets of protective clothing are not available for inspection, a notarized statement indicating the quantity and type of clothing and signed by the chief may be submitted.

The following documents will be reviewed by the inspector on the inspection site but are not needed for Office of State Fire Marshal files.

1. **Alarm Log** - records showing the date, time, location, type of alarm and names of responding firefighters.
2. **Meetings and Drills** - this record should indicate that each firefighter whose name appears on the roster has had a minimum of 36 hours of meetings and drills per year.
3. **Inventory of Equipment** - this list should include equipment carried on the "first out" pumper and tanker. It is recommended that an inventory of equipment be kept on all department vehicles.
4. **Apparatus Check Off List** - thorough records should be kept on all apparatus inspections performed on "first out" pumper and tanker. Inspection forms for the previous 12 months will be reviewed and should include items such as lights, brakes, steering, tires, siren, etc.

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Apparatus

A. Pumper (Minimum Requirements)

1. Pumper shall be certified by Underwriters Laboratories, Inc. or National Bureau of Fire Underwriters.
2. Pumper shall be constructed in accordance with NFPA 1901, Standard for Automotive Fire Apparatus.
3. Pumper shall be equipped with a GVW (gross vehicle weight) plate from the manufacturer attached to the vehicle. The vehicle shall not be loaded beyond the specified limits; nor shall the vehicle be modified in a manner that would invalidate this certification.
4. Pump shall be rated at not less than 750 gpm at 150 psi net pump pressure.
5. Pumper shall be equipped with a minimum 500 gallon tank.
6. A complete and accurate service test shall be performed annually; if the pumper has been purchased within the previous twelve months, the UL certificate will meet this requirement.
7. Two, 150-foot, 1 1/2-inch pre-connected hose lines with fog nozzles attached.
8. One booster reel or three pre-connected hose lines.
9. Two, 10-foot sections suction hose - size necessary to flow the capacity of pumper.
10. Four, OSHA-approved self-contained breathing apparatus in proper working condition.
11. OSHA approved (at the time of purchase) protective clothing including helmet, coat, pants, boots, gloves and hoods for all firefighters and reflective clothing and helmet for traffic control personnel.
12. One, 12-foot or 14-foot roof ladder.
13. One, 24-foot or 35-foot extension ladder.
14. One, axe.
15. One, claw tool (Haligan Tool can replace claw tool and crowbar).
16. One, crowbar (Haligan Tool can replace crow bar and claw tool).
17. One, pike pole, minimum of 8 feet

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18. Two, portable hand lights. ("4V" wet or "6V" dry)
19. 100 feet of rope, minimum of ½ inch.
20. Two, shovels.
21. Two, 20 pound, class B-C portable extinguishers.
22. One, first aid kit
23. One, bolt cutter, 14 inches or longer.

B. Tanker (Minimum Requirements)

1. Tanker shall be equipped with a minimum of 1000 gallons capacity or enough to equal 1500 gallons total for pumper and tanker.
2. Tanker shall be equipped with necessary hose for filling tank and hose for transferring water to the pumper.
3. When fully loaded, the tanker shall not exceed the GVW limits as posted on the Gross Vehicle Weight plate located on the vehicle; nor shall the vehicle be modified in a manner that would invalidate this certification.
4. Tanker shall be properly baffled in accordance with the National Fire Protection Association Standard 1901 – Standard for Automotive Fire Apparatus which is available from the National Fire Protection Association.

Fire Station Building

Building shall be provided with suitable heating for all weather protection of required pumper and tanker.

Inspection

Personnel from the Inspections Division of the Office of State Fire Marshal of the North Carolina Department of Insurance shall conduct a field inspection to determine whether the initial certification requirements have been met. Re-inspections on all fire departments, insurance class 9 or split 9, will be conducted on a 5-year schedule.

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For more information contact,

by mail:

or visit:

North Carolina Department of Insurance
Office of State Fire Marshal
Mail Service Center 1202
Raleigh, North Carolina 27699-1202

North Carolina Department of Insurance
Office of State Fire Marshal
322 Chapanoke Road, Suite 200
Raleigh, North Carolina 27611

Telephone number: (919) 661-5880

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NORTH CAROLINA DEPARTMENT OF INSURANCE

Fire Insurance District Mapping Requirements

1. Boundaries defining the area of responsibility shall be established by a County Board of Commissioners for areas outside of municipalities pursuant to G.S. 153A-233.
2. The Fire Department shall provide the OSFM with a hand drawn map and written description or a GIS computer generated map of its initial or revised district.
 - Individual district maps must be consistent within county (either GIS generated or hand-drawn).
3. District boundaries must be clearly defined. (A point on every road where the district line crosses).
4. Scale must be identified on map.
5. Roads should be identified by legible state road numbers or name.
6. Fire stations location must be plainly marked.
7. If a portion of the fire insurance district extends into another county, the district boundaries at the county line must be compatible.

NOTE: THE RESPONSIBILITY OF PREPARING AND SUBMITTING A MAP LIES WITH THE COUNTY FIRE MARSHAL OR FIRE CHIEF. THE APPROVAL OF THAT MAP LIES WITH THE DEPARTMENT OF INSURANCE WHOSE STAFF WILL DRAW MAPS ONLY IN UNUSUAL CIRCUMSTANCES.



FIRE PROTECTION DEFINITIONS

1. **Response District**

The area which a fire department responds to and provides protection. May not be a "Legal District". Could simply be a gentlemen's agreement. Not registered. Not recorded. No Limit. Can be made legal by presenting to "County".

2. **Insurance District (G.S. 153A-233)**

THIS IS WHAT 9S REQUIRES

An area outside corporate limits with boundaries approved by the County Board of Commissioners for fire insurance grading purposes. Cannot overlap and cannot extend more than 6 miles from the station. An "insurance district" is not supported by either a referendum type fire tax (G.S. 69-25) or a special service district tax (G.S. 150A-300).

3. **Rural Fire Protection District (G.S. 69-25)**

An area outside corporate limits with boundaries designed by petition of 35% of the resident free-holders in which a fire tax not to exceed .15 per \$100 valuation has been authorized by the resident qualified voters within the district.

4. **Fire Service District (G.S. 150A-300)**

An area outside corporate limits with boundaries approved by the County Board of Commissioners in which a fire tax is levied without referendum for fire protection services. Such district or districts may include territory within corporate limits if approved by resolution of the municipal governing body.

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SIX MILE INSURANCE DISTRICT

To extend its insurance district to six miles, each fire department shall apply and meet the following criteria:

- (1) The fire department shall provide the OSFM with a hand drawn map and written description or a GIS computer generated map of its fire district.
- (2) The map and written description shall be presented to the County Commissioners for their approval, as set forth in G.S. 153A-233.
- (3) The department applying to extend its insurance district to six miles shall enter into a written automatic aid contract with the adjoining districts specifying that "an apparatus capable of transporting" a minimum of 1000 gallons of water shall be dispatched simultaneously with the department whose district the incident is occurring within.
- (4) The County shall establish automatic aid protocols. These protocols shall be maintained at the county communication center and shall be used on all alarms involving reported structure fires.