County of Prince Edward
Board of Supervisors
Agenda Summary

Meeting Date:	**May 11, 2010**
Item No.:	**9**
Department:	**Planning and Community Development**
Staff Contact:	**Jonathan Pickett**
Issue:	**PUBLIC HEARING- Amendment to Sandy River Reservoir Ordinance**

Summary: At its April meeting, the Board was informed the county had received a request to consider an amendment to the Sandy River Reservoir Ordinance relating to the siting of sewerage systems within 500 feet of the reservoir's normal pool. Presently, this is not permitted per Board action in 2005. The Board authorized a public hearing on an amendment which would reduce the setback for dwellings using advanced technologies such as alternative on-site sewage systems. Specifically, the amendment allows the siting of dwellings up to 200 feet from the reservoir as long as the soil treatment area is located not less than 500 feet of the reservoir. The exact language along with definitions is included in the attachments.

Paul Louis, a private soils scientist, as well as Paul Freed with the Health Department will be available to answer questions.

The proposed amendment has been reviewed by the Count Attorney.

Attachments: 1) Notice of Public Hearing
2) Amended Sandy River Reservoir Ordinance
3) Definitions from the Virginia Board of Health
4) Letter from Paul Louis

Recommendation: Based on staff consultation with the Health Department and conversations with professionals in soil science and sewage treatment it appears alternative on-site systems are technologically sound. Therefore, staff raises no objections to the proposed amendment.

Motion _____	Campbell _____	Fore _____	Gantt _____
Second _____	Jones _____	McKay _____	Simpson _____
	Wilck _____	Wiley _____	

Please publish the following Notice of Public Hearing in the **Friday, April 23, 2010 and Friday, April 30, 2010** editions of *The Farmville Herald.* Please provide a Certificate of Publication to the Prince Edward County Administrator's Office.

NOTICE OF PUBLIC HEARING

PUBLIC HEARING – The Prince Edward County Board of Supervisors will hold a public hearing to receive citizen input on a proposed amendment to Section 82-31(a)(20) of the County's *Ordinance to Regulate and Protect the Sandy River Reservoir,*. The proposed amendment would establish a separate set-back requirement for an *"alternative on-site sewage system" with "secondary effluent" or better, as defined by Virginia Board of Health Regulations, and approved by the Virginia Department* on privately-owned properties surrounding the Reservoir. The public hearing is scheduled for Tuesday, May 11, 2010 at 7:30 p.m. in the Board of Supervisors Room, located on the Third Floor of the Prince Edward County Courthouse, 111 South Street, Farmville, Virginia. A copy of the proposed amendment is available for public review on the County's web site at **www.co.prince-edward.va.us** or in the Prince Edward County Administrator's Office, TEL.: 434-392-8837. It is the County's intent to comply with the requirements of the Americans with Disabilities Act. Should you need special accommodations, please contact the Prince County Administrator's Office prior to May 7, 2010.

By Order of the Board of Supervisors
W.W. Bartlett, County Administrator

ORDINANCE TO REGULATE AND PROTECT THE SANDY RIVER RESERVOIR AND ADJACENT COUNTY-OWNED PROPERTIES IN ACCORDANCE WITH SECTION 15.1-13 OF THE CODE OF VIRGINIA 1950, AS AMENDED

Sec. 82-31.

(a) The following activities are hereby declared to be unlawful in that part of Lockett Magisterial District of Prince Edward County known as Sandy River Reservoir and on any County-owned property surrounding the reservoir:

(1) Presence of persons, boats, or other personal property at anytime in areas marked "No Trespassing," without the express written permission of the county administrator.

(2) Parking on any County-owned property surrounding the reservoir other than in the Sandy River Reservoir Public Use Area located off Route 640, at the end of Route 792, or in any other area specifically designated by the Prince Edward County Board of Supervisors as a Public Parking Area.

(3) Littering or dumping of any type, kind or description.

(4) Hunting or trapping of any type, kind or description without an express written permit issued by the County of Prince Edward.

(5) Conducting fishing tournaments in which prizes are awarded without an express written permit issued by the County of Prince Edward and Department of Game and Inland Fisheries.

(6) Diving, snorkeling or swimming of any type, kind or description.

(7) Operation in or on the reservoir of any unlicensed watercraft or any type of watercraft propelled by an engine in excess of ten (10) horsepower.

(8) Operation in or on the reservoir of a windsurfer, sailboard or any wind-propelled vessel, other than a sailboat, length of which shall not exceed sixteen (16) feet.

(9) Operation in or on the reservoir of any jet ski.

(10) Sale of any and all commodities or services anywhere in either the reservoir or the County-owned property surrounding the reservoir, as well as the posting of any kind of advertisement of any description, unless sanctioned by the County of Prince Edward.

(11) Discharging any firearm, including but not limited to any weapon which propels a projectile by pneumatic means, unless sanctioned by the County of Prince Edward.

(12) Possession of any type of alcoholic beverage while on the premises.

(13) Presence on the reservoir or the County-owned property surrounding the reservoir by any person under the age of twelve (12) years, unless such person is accompanied by an individual who is at least twenty-one (21) years of age.

(14) Camping and lighting or maintaining any kind of fire, unless such activity has been sanctioned or is sponsored by the County.

(15) Use of any of the County-owned property surrounding the reservoir by any person riding any type of motorized or non-motorized vehicle, bicycle or horse and use of any part of the reservoir or such County-owned property for ice skating or sledding, unless any such use has been expressly sanctioned by the County.

(16) The use of any of the County-owned property surrounding the reservoir, other than those areas specifically designated by the County as such, for boat access to and from the reservoir including, but not limited to construction of piers, docks and access roads. Individuals owning property adjacent to the county buffer who have a county-approved and permitted boat access ramp shall continue to be responsible for the soil erosion and sedimentation measures and for the safe maintenance and upkeep of the ramp. The permit is not transferable to any future owners of the property. Permittee must carry liability insurance and show annual proof thereof.

(17) Cutting, removing or altering any trees, brush or other vegetation now growing or hereafter established in the reservoir or on the County-owned property surrounding the reservoir and removing, altering or otherwise disturbing the reservoir or any County-owned land surrounding the reservoir.

(18) Withdrawal of water for any purpose, with the exception that adjacent property owners with express written permission from Prince Edward County may withdraw reasonable amounts of water for irrigation and domestic purposes until such time as water therein is used for public water supply.

(19) Stocking of any fish or other aquatic species in the reservoir or animal on the County-owned property, without written permission of Prince Edward County and the Department of Game and Inland Fisheries.

CURRENT LANGUAGE:

(20) The siting of "sewerage systems" and "treatment works", as defined by the State Board of Health Sewage Handling and Disposal Regulations, within five hundred (500) feet of the normal pool elevation of the reservoir.

POSSIBLE AMENDMENT:

(20) The siting of dwellings using "conventional onsite sewage systems," as defined by Virginia Board of Health regulations, within 500 feet of the normal pool elevation of the reservoir. Dwellings utilizing an "alternative on-site sewage system" with "secondary effluent" or better as defined by Virginia Board of Health Regulations, and approved by the Virginia Department of Health, may be sited not closer than 200 feet from the normal pool elevation of the reservoir, so long as the soil treatment area is located not less than 500 feet from the normal pool elevation of the reservoir.

(21) Discharging a firearm, as defined in paragraph 11 of this section, on any county-owned land, on or within 300 feet of a public parking area.

(b) The Board of Supervisors may, by resolution, authorize the construction and maintenance of public utilities, including electrical supply lines, water and sewer treatment plants, water and sewer supply lines, and telecommunications transmission lines that benefit the public at large and are constructed and maintained by a public utility company, Prince Edward County, or by a public utility authority created pursuant to state law, on Sandy River Reservoir and on any County-owned property surrounding the Sandy River Reservoir. As a condition of said authorization, the entity responsible for the construction or maintenance of the public utility shall restore the affected property to the same condition as it existed on the date of the authorization, and shall maintain the area in that

condition for the duration of the authorization, to the extent that is practical and consistent with prevailing utility maintenance practices in the Commonwealth of Virginia.

(c) Except for those activities specifically authorized by the Board of Supervisors pursuant to Paragraph (b), any person who shall knowingly commit any of the acts declared unlawful in (a) above, shall, on conviction of a first offense of a violation of this section, be guilty of a Class 1 misdemeanor as same as defined in Section 18.2-11 of the Code of Virginia, 1950, as amended.

(Ord. of 7-9-96; Ord. of 11-12-98, Ord. of 9-14-99, Ord. of 10-10-00, Ord. 6-10-08, Ord. 11-12-08).

Board of Health
12VAC5-613
Emergency Regulations for Alternative Onsite Sewage Systems

Part 1: General

12VAC5-613-10. Definitions. The following terms used in this chapter shall have the following meanings. Terms not defined in this chapter shall have the meanings prescribed in Chapter 6 of Title 32.1 of the *Code of Virginia* or in 12VAC5-610-20 et seq. (or successor regulation) unless the plain reading of the language requires a different meaning.

"Ammonia nitrogen" or "ammonia" means the non-ionized form of reduced nitrogen (NH_3).

"Ammonium nitrogen" or "ammonium" means the ionized form of reduced nitrogen (NH_4^+).

"Alternative onsite sewage system," "AOSS," or "alternative onsite system" means a treatment works that is not a conventional onsite sewage system and does not result in a point source discharge.

"Biochemical oxygen demand" (BOD) is the measure of the amount of oxygen required by bacteria for stabilizing material that can be decomposed under aerobic conditions.

"BOD_5" or "biochemical oxygen demand, five-day" means the quantitative measure of the amount of oxygen consumed by bacteria while stabilizing, digesting, or treating biodegradable organic matter under aerobic conditions over a five-day incubation period; expressed in milligrams per liter (mg/L).

"Conventional onsite sewage system" means a treatment works consisting of one or more septic tanks with gravity, pumped, or siphoned conveyance to a gravity distributed subsurface drainfield.

"Disinfection" means a process used to destroy or inactivate pathogenic microorganisms in wastewater to render them non-infectious.

"Dissolved oxygen" (DO) means the concentration of oxygen dissolved in effluent, expressed in mg/l or as percent saturation, where saturation is the maximum amount of oxygen that can theoretically be dissolved in water at a given altitude and temperature.

"Effluent" means partially or fully treated sewage flowing from a treatment unit or septic tank.

"Ksat" means saturated hydraulic conductivity.

"Large AOSS" means an AOSS that serves more than 3 single-family residences or a non-residential facility with an average daily sewage flow in excess of 1,000 gpd.

"Local health department" means the local health department having jurisdiction over the AOSS.

"Maintenance" means performing adjustments to equipment and controls and in-kind replacement of normal wear and tear parts such as light bulbs, fuses, filters, pumps, motors, or other like components. Maintenance includes pumping the tanks or cleaning the building sewer on a periodic basis. Maintenance shall not include replacement of tanks, drainfield piping, distribution boxes, or work requiring a construction permit and installer.

"Nitrate nitrogen" or "nitrate" means the stable form of oxidized nitrogen (NO_3^{-})

"Nitrite nitrogen" or "nitrite" means the unstable form of oxidized nitrogen (NO_2^{-})

"Non-tidal surface waters" means any perennial stream, river, lake, pond, or other body of water which is not affected by tidal actions. A perennial stream is one that is shown as a solid blue line on a United States Geological Survey (USGS) topographic map.

"Operate" means the act of making a decision on one's own volition (i) to place into or take out of service a unit process or unit processes or (ii) to make or cause adjustments in the operation of a unit process at a treatment works.

"Operation" means the biological, chemical, and mechanical processes of transforming sewage or wastewater to compounds or elements and water that no longer possess an adverse environmental or health impact.

"Operator" means any individual employed or contracted by any owner, who is licensed or certified under Chapter 23 (§ 54.1-2300 et seq.) of Title 54.1 as being qualified to operate, monitor, and maintain an alternative onsite sewage system.

"Organic loading rate" means the biodegradable fraction of chemical oxygen demand (biochemical oxygen demand, biodegradable FOG, and volatile solids) delivered to a treatment component in a specified time interval expressed as mass per time or area; e.g., pounds per day or pounds per cubic foot per day (pretreatment); pounds per square foot per day (infiltrative surface or pretreatment). For a typical residential system these regulations assume that biochemical loading (BOD_5) equals organic loading.

"Owner" means the Commonwealth or any of its political subdivisions, including sanitary districts, sanitation district commissions and authorities, any individual, any group of individuals acting individually or as a group, or any public or private institution, corporation, company, partnership, firm or association which owns or proposes to own a sewerage system or treatment works.

"pH" means the measure of the acid or base quality of water that is the negative log of the hydrogen ion concentration.

"Project area" means a recorded lot or a portion of a recorded lot owned or controlled by easement by the owner of an AOSS upon which an AOSS is located or contiguous to an a soil treatment area and is designated as such for purposes of compliance with the performance requirements of this chapter. In the case of an AOSS serving multiple dwellings, the project area may include multiple recorded lots as in a subdivision.

"Relationship with an operator" means an agreement between the owner of an AOSS and operator wherein the operator has been retained by the owner to operate the AOSS in accordance with the requirements of this chapter.

"Reportable incident" means one or more of the following: an alarm event, any failure to achieve one or more performance requirement, loss of power, removal of solids, replacement of media, or replacement of any major component of the system including electric and electronic components, pumps, blowers, and valves. Routine maintenance of effluent filters is not included.

"Saturated hydraulic conductivity" means a quantitative measure of a saturated soil's ability to transmit water when subjected to a hydraulic gradient.

"Secondary effluent" means effluent that has been treated to produce BOD_5 and TSS concentrations equal to or less than 30 mg/L each on a 30-day average basis and a total and an NH_3 content equal to or less than 1 mg/L.

"Secondary treatment" means biological and chemical treatment processes, individually or in combination, designed to remove organic matter.

"Settleable Solids" means a measure of the volume of suspended solids that will settle out of suspension within a specified time, expressed in milliliters per liter (mL/L).

"Sewage Handling and Disposal Regulations" or "SHDR" means 12VAC5-610-20 et seq. or successor regulation adopted by the Board of Health.

"Small AOSS" means an AOSS that serves no more than 3 single family residences or a non-residential facility with an average daily sewage flow of less than or equal to 1,000 gpd.

"Subsurface drainfield" means a system installed within the soil and designed to accommodate treated sewage from a treatment works.

"Soil treatment area" means the physical location in or on the naturally-occurring soil medium where final treatment and dispersal of effluent occurs; includes subsurface drainfields, drip dispersal fields, and spray fields.

"Tertiary effluent" means effluent that has been treated to produce BOD_5 and TSS concentrations equal to or less than 10 mg/L each on a 30 day average basis, a total NH_3 content equal to or less than 1 mg/L.

"Total Kjeldahl Nitrogen" or "TKN" means a measure of the total concentration of organic nitrogen, ammonia, and ammonium nitrogen

"Total nitrogen" means the measure of the complete nitrogen content of wastewater including TKN, nitrate nitrogen, and nitrite nitrogen expressed in mg/L.

"Total residual chlorine" (TRC) is a measure of the combined available chlorine and the free available chlorine available in a sample after a specified contact time.

"Total suspended solids" means a measure of the mass of all suspended solids in a sample typically measured in milligrams per liter (mg/L).

"Treatment train" means a site-specific combination of components that make up a wastewater treatment system; a simple example of a treatment train is a septic tank and a soil treatment area.

"Treatment unit" or "treatment device" means a method, technique, equipment, or process other than a septic tank or septic tanks used to treat sewage to produce effluent of a specified quality before the effluent is discharged to a soil treatment area.

"Turbidity" means the relative clarity of effluent as a result of the presence of varying amounts of suspended organic and inorganic materials or color.

"Vertical separation" means the vertical distance between the point of effluent application to the soil and a limiting condition of the site of the soil treatment area such as seasonal high ground water, bedrock, or other restriction.

Statutory Authority

§§32.1-12, 32.1-164, and 2.2-4011 of the Code of Virginia.

12VAC5-613-20. Purpose and Authority. Pursuant to the requirements of *Va. Code* §§ 32.1-12 and -164 et seq., 2.2-4011, and Acts of Assembly 2009, Chapter 0220, the Board of Health has promulgated this chapter to:

A. Establish a program for regulating the operation and maintenance of alternative onsite sewage systems;

B. Establish performance requirements for alternative onsite sewage systems;

C. Establish horizontal setbacks for alternative onsite sewage systems that are necessary to protect public health and the environment;

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3-24-2010

Mr. Jesse Yeatts
Hwy 605
Rice, VA 23966

Subject: Y.E.S. Subdivision on the Sandy River Reservoir.

To Whom It May Concern:

This letter is being written to acknowledge the fact that the zoning requirements to build near the Sandy River Water Reservoir are understood. It is also an opportunity to provide some new information about the advantages in sewage treatment systems that will be employed. Also, I would like to give you some information on my background as an AOSE.

The fact is, there is an mandate to protect the Sandy River Reservoir. The mandate reads that there cannot be a sewage system within 500 feet of the lake. That means a toilet or a house which will contain a toilet cannot be within 500 feet of the lake. With that said, I am proposing to build houses within 214 feet of the lake. I would request that a variance be granted to this rule by suggesting that through technology and good building practices, the exposure of harm to the watershed can be reduced to zero. That is, by using modern equipment and known technology a system can be made to withstand what mother nature can throw at it and keep working. For instance, Roth Global Plastics , Inc. makes a rugged multilayered septic tank that comes with a 5 year warranty on replacement labor. This tank features water tight threaded access riser, connectic gaskets and a threaded manhole, things that are not possible with a concrete tank. The wastewater is then treated by a state of the arts treatment system with all interior components installed and adjusted at the factory. The results are clean enough in many localities to be legally discharged into a water course . Our plan not to discharge but to continue to treat the wastewater by pumping it to a high tech environmentally friendly drip drain field over 500 feet from the lake. These are not ordinary drain fields but drip irrigation fields, invented in America, which recirculate any water that is not absorbed back into the beginning of the treatment process to be retreated and recycled every two hours all day and through the night as long as there is a demand. That means that oxygen rich treated wastewater is mixed with the incoming sewage at the start of the treatment process to help the raw sewage break down faster. Adding oxygen promotes bacterial life that speeds up the treatment process.

Small treatment units like these are preferred in all sensitive residential areas. They are widely used in Loudon County, Virginia, where housing growth has been

exponential. Loudon County wants to keep its drinking water safe as safe as we do here in Prince Edward County. Small treatment plants like the ones described are much easier to monitor and maintain than larger municipal sewage plants. Problems are quickly detected by the home owners and there is maintenance contractor required by Virginia State Law to correct problems within 24 hours of an alarm activation. Each piece of the treatment system is monitored by electronically controlled floats and sensors that send a warning signal way before a system is at its capacity. A monitoring device at the control panel then sends a message via telemetric device to the maintenance provider. Today's Control Panels can monitor the entire septic system's condition including counting pump cycles, frequencies of alarms activations, gallons of water treated and pinpoint concerns before they become problems. In essence, not an install and forget system, but an easy to operate and maintain system that has the capability to send a help message as soon as it is required. Annual maintenance is required as well as the need to pump septic tanks on a regular basis (three to five years depending upon the level of usage) Many people do not understand that all septic systems need maintenance and high tech systems need just a little more maintenance.

I learned the trade of septic system design working at the Health Department for nine years. I have worked as an AOSE for the last twelve years.

Please don't hesitate to contact me about this or any matter concerning soil and sewage treatment. Thank you for your attention.

Sincerely yours,

Paul F. Louis

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