ATTACHMENT A

A RESOLUTION RECEIVING A REPORT FROM OWASA
ON PROPOSED CHANGES IN WATER CONSERVATION STANDARDS
Resolution No. 82/*2008-09*

BE IT RESOLVED BY THE BOARD OF ALDERMEN OF THE TOWN OF CARRBORO:

Section 1. The Board of Aldermen hereby accepts the report from OWASA on proposed changes in water conservation standards.

Section 2. This resolution shall become effective upon adoption.

ORANGE WATER AND SEWER AUTHORITY
Quality Service Since 1977

February 18, 2009

Valerie Foushee, Chair
Board of Commissioners
Orange County
Post Office Box 8181
Hillsborough, NC 27278

Mark Chilton, Mayor
Town of Carrboro
301 West Main Street
Carrboro, NC 27510

Kevin Foy, Mayor
Town of Chapel Hill
405 Martin Luther King Jr. Blvd.
Chapel Hill, NC 27514

SUBJECT: PROPOSED CHANGES IN WATER CONSERVATION STANDARDS

Dear Chair Foushee, Mayor Chilton and Mayor Foy:

We will meet the evening of Wednesday, February 25, 2009 at 7:00 PM to discuss proposed changes to OWASA's water conservation standards applicable to all OWASA customers. The meeting will be held in the Southern Human Services Center in Chapel Hill. Our agenda for this discussion item is attached.

Background materials are attached for your review and discussion at the meeting. Included are:

- ✓ an overview of some of the key proposed changes;
- ✓ a summary table showing the applicable requirements for each drought stage; and
- ✓ a copy of the proposed revisions to the Water Conservation Standards (showing changes in underline and strikethrough format).

We are sure that some attendees will have important questions and comments regarding broader water resource management issues; however, we request that the meeting discussion be focused on the proposed changes to the conservation standards so that we can stay within our allotted meeting time. We would be glad to sponsor a future meeting at which time we can discuss other water topics, including OWASA's ongoing update of the Long-Range Water Supply Plan, the new reclaimed water system project, etc.

Just as we collectively did following the 2002 drought, we believe it is appropriate to revise the conservation requirements to reflect lessons learned from the 2007-2008 drought. The proposed changes to the conservation standards incorporate many of the comments received from the local governments, business community and our customers during and after the most recent drought.

The changes proposed by OWASA would still retain some basic, essential conservation requirements, but they are designed to give our customers more flexibility in deciding how to use drinking water under normal conditions and during water shortages such as droughts.

For example, the proposed revisions would provide greater flexibility for the use of water at public purpose recreational fields and botanical sites for which OWASA has approved a water conservation plan. We are also proposing that both public and private swimming pools be subject to restrictions only in water supply emergencies. Water use in pools is a very small percentage of overall community demand, but swimming is an important activity for fitness, health and recreation in our community.

We believe the additional flexibility being proposed is appropriate because we now have a combination of increasing block water conservation rates for individually-metered residential customers, increased year-round rates for irrigation use, seasonal conservation rates for all other customers, and water rate surcharges that are put into effect for each of various levels of water shortages. The water shortage surcharges proved to be very effective in reducing water use during the 2007-2008 drought, and we made further refinements to them as part of our rate-setting process last year.

We look forward to our discussion on February 25th, and to working with your respective governing boards to finalize a mutually-agreeable set of conservation standards and incorporating those changes into the local water conservation ordinances applicable to our customers.

Thank you very much for your continuing assistance and support for sustainable management of our community's essential water resources.

Best regards,

Randy Kabrick, P.E., Chair
Orange Water and Sewer Authority

Enclosures: Joint Meeting Agenda and accompanying documents

c: Ms. Laura Blackmon, Orange County Manager (w/encs.)
Mr. Roger L. Stancil, Chapel Hill Town Manager (w/encs.)
Mr. Steven Stewart, Carrboro Town Manager (w/encs.)
OWASA Board of Directors (w/encs.)
Ed Kerwin, Executive Director

JOINT MEETING TO DISCUSS PROPOSED REVISIONS TO OWASA'S WATER CONSERVATION STANDARDS AND THE LOCAL WATER CONSERVATION ORDINANCES

Wednesday, February 25, 2009
7:00 PM, Southern Human Services Center

AGENDA

(5 min.) **I. WELCOME AND INTRODUCTIONS**

Randy Kabrick, Chair, OWASA Board
Mark Chilton, Mayor of Carrboro
Kevin Foy, Mayor of Chapel Hill
Valerie Foushee, Orange County Chair

(2 min.) **II. MEETING OBJECTIVES** *(Randy Kabrick)*

The meeting objectives are to (a) provide information about OWASA's proposed revisions to the local Water Conservation Standards, and (b) obtain the local elected boards' support for the Standards and corresponding revisions to the local water conservation ordinances.

(5 min.) **III. LESSONS LEARNED FROM THE DROUGHTS OF 2001/2002 AND 2007/2008** **(***Ed Kerwin, Executive Director, OWASA)*

(10 min.) **IV. RECOMMENDATIONS FOR REVISIONS TO CONSERVATION STANDARDS** *(Alan Rimer, Chair, OWASA's Natural Resources & Technical Systems Committee)*

(30-45 min.) **V. DISCUSSION AMONG ELECTED BOARDS AND OWASA BOARD** *(Randy Kabrick)*

(10 min.) **VI. MEETING SUMMARY, NEXT STEPS AND TIMETABLE FOR ACTION**

Mark Chilton, Mayor of Carrboro
Kevin Foy, Mayor of Chapel Hill
Valerie Foushee, Orange County Chair
Randy Kabrick, OWASA Chair

PROPOSED CHANGES TO OWASA'S WATER CONSERVATION STANDARDS
February 18, 2009

Background

OWASA's current Conservation Standards were developed in 2003 and subsequently incorporated into the local water conservation ordinances of Carrboro, Chapel Hill, and Orange County. The 2003 Standards resulted from experience gained during the historic drought of 2001-02 and from a productive public feedback and stakeholder participation process after the drought. A joint meeting of the governing boards of Carrboro, Chapel Hill, Orange County and OWASA was held to discuss the 2003 proposal and coordinate the final approval and incorporation into the local conservation ordinances.

More recently, as Water Shortage Stages 1 through 3 were implemented during the drought of 2007-2008, community stakeholders provided additional feedback about the actual effects and acceptability of the current Standards and ordinance requirements. During those discussions and subsequent presentations, OWASA committed to conducting a thorough review of the existing Standards after the drought had eased. The OWASA Board's Natural Resources and Technical Systems Committee and staff began that process when mandatory restrictions were rescinded last spring. Per the Board's August 28, 2008 authorization, staff distributed proposed Standards revisions for public review and hosted a community meeting on September 24, 2008 that had been publicized through new releases, paid newspaper advertising, and e-mail messages to more than 1,000 recipients. The OWASA Board endorsed the proposed changes to OWASA's Water Conservation Standards and agreed to present them for consideration by the Carrboro, Chapel Hill and Orange County Boards.

Guiding Principles

In developing the proposed revisions, OWASA was guided by the following principles and "lessons learned" during the 2007-08 drought:

- The existing Conservation Standards focus predominantly on outdoor water use, which represents only about 7 percent of OWASA's total annual demand. By comparison, other utilities estimate that outdoor use accounts for 20 percent of their total water use, which reflects significant differences between OWASA's and their customer bases.

- Significant reductions in OWASA water demand persisted through the winter months of late 2007 and early 2008 when little or no outdoor use was taking place, indicating that substantial indoor reductions had occurred and were being sustained in the absence of any indoor regulatory requirements. These behavioral changes were likely a response to several factors, including OWASA's Stage 2 and 3 water rate surcharges; the community's longstanding commitment to sustaining its drinking water resources; OWASA's public information work; and extensive media coverage of the drought and uncertain regional water supply conditions.

- Stakeholders indicated that certain restrictions caused undue economic hardships to businesses such as landscapers, nurseries, power washers and house painters without achieving commensurate water savings. Similarly, it was noted that the marginal conservation benefits of not filling or topping off public swimming pools and not irrigating public recreational fields failed to justify the loss of these public resources to the community or the health and safety risks of improperly maintained athletic fields.

- Many stakeholders noted the different values and replacement costs of grass lawns versus trees, shrubbery, and gardens. With proper turf selection and soil preparation, most grass lawns become dormant and will survive severe drought conditions, unlike certain trees and shrubs, which may die without sufficient water and then require years of growing time to replace. OWASA believes that turf grass irrigation represents a low priority, non-essential use of drinking water.

- OWASA believes that an effective local conservation program should provide a mix of *actual* conservation benefits, customer information/education as well as a sense of individual and community empowerment, and that no set of restrictions or rates can be perfectly effective, fair, and practical.

Highlights of Proposed Changes

1. The "Water Supply Advisory" stage is eliminated from the existing Standards. From past experience, the Advisory stage has little beneficial effect and is confusing to the public.

2. The high "cut-off" limits on monthly water use by residential customers are removed, because they were confusing to the public. Based on our experience during the 2007-08 drought, the increasing block rates and Water Shortage rate surcharges reduce excessive residential water use without need for further incentives or customer-specific use reduction requirements.

3. Allowances are made for irrigating "Public Purpose Athletic and Recreational Fields" and "Public Purpose Botanical Sites" at different times and frequencies than generally specified for spray irrigation, provided that such exceptions comply with an OWASA-approved Water Conservation Plan for each site.

4. Spray irrigation restrictions for turf grass remain unchanged except that hours during which spray irrigation is allowed are slightly extended to promote consistency with other communities' ordinances. Spray irrigation restrictions are relaxed for non-turf vegetation, such as trees, shrubs, and gardens. Drip irrigation, underground hose emitters, soaker hose, hand-watering, and other non-spray methods are allowed at any time, duration, or frequency except during a Water Supply Emergency, when all irrigation is prohibited. OWASA recognizes that it is impractical for customers to know whether these irrigation methods comply with the ½ or 1 inch per week limits specified in the current Standards and which are proposed to be continued for spray irrigation.

5. Ornamental ponds, fountains, etc. may be filled, refilled, or topped off with OWASA-supplied potable water during Stage 1, but not during Stages 2, 3, or Emergency Shortages. (Current requirement: cannot refill them during any stage of a declared shortage.)

6. Washing building exteriors prior to painting is allowed during Stages 1 and 2, but not during Stage 3 or Emergency Shortages. The more general cleaning of building exteriors (not associated with painting) and the washing of paved areas, etc. is allowed only during Stage 1. (Current requirement: cannot use water for *routine* cleaning or washing during any stage, but Stage 2 allows pressure cleaning of building exteriors necessary to protect integrity of the structure. Pressure cleaning not allowed in Stage 3 or Emergency.)

7. Swimming pools are allowed to be filled, refilled, or topped off at any time except during a Water Supply Emergency (regardless of whether they are public or private pools). (Current requirement: in Stage 2, water cannot be used to fill or refill empty pools, but can be used to top off operating pools. Topping off pools is not allowed in Stage 3 or Emergency.)

8. New water lines may be flushed or pressure-tested at any time except during a Water Supply Emergency, when flushing or pressure testing is allowed only if the water is captured and returned to OWASA's system. (Current requirement: Use of water for pressure testing and flushing is prohibited in Stage 3 unless water is captured and returned.)

9. Provisions to encourage conservation measures have been moved from sections of the Standards in which actual restrictions are listed to a new section under "Year-Round Policy and Practice."

Attachment A: Summary of key Water Conservation Standards proposed for OWASA drinking water.

Attachment B: Proposed revisions to Water Conservation Standards with ~~strikethroughs~~ and underlined additions.

Attachment A.

SUMMARY OF KEY CONSERVATION STANDARDS PROPOSED FOR OWASA DRINKING WATER *
February 18, 2009

Water Use	Year-Round	Stage 1	Stage 2	Stage 3	Emergency
Spray Irrigation Applied to **Turf Grass**	3 days per week, up to 1 inch per week, 6 pm - 10 am only **	1 day per week, up to 1/2 inch per week, 6 pm - 10 am only **	X**	X**	X
Spray Irrigation Applied to **Non-Turf Plant Materials**	3 days per week, up to 1 inch per week, 6 pm - 10 am only **	3 days per week, up to 1 inch per week, 6 pm - 10 am only **	1 day per week, up to 1/2 inch per week, 6 pm - 10 am only **	X***	X
Drip irrigation, underground drip emitters, soaker hose, hand-watering, and other non-spray methods allowed at any time or frequency as noted.	✓	✓	✓	✓	X
Washing of Building Exteriors **Prior to Painting**	✓	✓	✓	X	X
General Cleaning of Building Exteriors, Paved Areas, Etc.	✓	✓	X	X	X
Ornamental Ponds, Fountains, etc. Filled, Refilled, or Topped Off	✓	✓	X	X	X
Vehicle Washing	✓	✓	Only at commercial or institutional facilities where 50% of the water has been recycled, is from a non-potable source, or from a well	X	X
Swimming Pools Filled, Refilled, or Topped Off	✓	✓	✓	✓	X
Flushing or Pressure Testing New Water Lines	✓	✓	✓	✓	Only if captured and returned to system

Year-Round Requirements, Regardless of Water Shortage Condition

- > Automatic controllers and rainfall or soil moisture sensors required on all irrigation systems
- > "Wasteful" water use* prohibited at all times
- > Water leaks must be repaired withing 10 days of discovery and/or notification by OWASA
- > Water may be served in restaurants only upon customer request
- > Hotel/motel linens may only be changed upon customer changeover, every 5 days, or upon customer request

Symbols and Notes

*	*Please refer to actual text of OWASA's Conservation Standards for details.*
✓	*Water use is allowed*
X	*Water use is not allowed*
**	*Restrictions may not apply to public purpose athletic fields, recreational fields, or public purpose botanical sites operated in compliance with OWASA-approved Water Conservation Plans.*
***	*Restrictions may not apply to public purpose botanical sites operated in compliance with OWASA-approved Water Conservation Plans.*

Attachment B.

Orange Water and Sewer Authority
Proposed Revisions to Water Conservation Standards
February 18, 2009

Article I – Purpose and Definitions

I. A. Purpose

These Water Conservation Standards are enacted by the Orange Water and Sewer Authority (OWASA) for the purposes of:

1. Reducing the rate of increase in overall water use through year-round water conservation practices that will help maximize the community's existing and planned water supply sources and help reduce seasonal peak day demands that result in the need for costly expansion of water treatment, storage, and transmission facilities. Such year-round practices shall include:

    a. Reducing indoor water waste by encouraging the installation and maintenance of ultra-low flow toilets, faucet aerators, low-flow showerheads and similar devices, as well as other creative and commonsense indoor conservation practices.

    b. Reducing irrigation and irrigation-related water waste without sacrificing landscape quality through the cultivation of lower water use plants; improved landscape design and planting practices; more efficient watering practices; and improved irrigation system design and maintenance.

    c. Increasing the use of non-potable water, as permitted by appropriate public health regulations, for irrigation and other uses that do not require water of potable quality.

2. Providing an orderly process for reducing community-wide water demands during periods of drought or other naturally occurring causes of water shortages.~~; and~~

3. Providing an orderly process for reducing community-wide water demands during periods of water shortages due to natural disaster (other than drought), major OWASA facilities failure, or other unexpected and sudden loss of water supply, treatment, or distribution capacity that constitutes a water supply emergency.

I. B. Definitions

For the purpose of these Standards, the following definitions shall apply unless the context clearly indicates or requires a different meaning.

AUTOMATIC CONTROLLER. A mechanical or electronic device capable of operating an irrigation system and its component valve stations according to a pre-determined schedule of irrigation frequency and duration.

CISTERN. A tank or container, typically located underground, for the storage and subsequent reuse of rainwater collected from rooftops or other impervious surfaces that would have otherwise evaporated or drained off the premises.

DRIP IRRIGATION. The application of irrigation water through drip emitter devices at low pressure, volume, and velocity near or at ground level in order to minimize runoff and evaporative losses. Drip irrigation emitters are typically used for irrigating non-turf vegetation and release water in the range of 0.04 to 0.40 gallons per minute.

EVEN-NUMBERED PROPERTIES. Properties with street addresses that end in even-numbered digits, or other properties so designated for the purposes of these -Standards through special arrangements with OWASA.

GRAYWATER. ~~Domestic wastewater collected from household fixtures and appliances, such as washing machines, dishwashers, showers, sinks, and bathtubs, *but not from toilets or urinals.*~~ Wastewater removed from household wash basins, bathtubs, or showers. Graywater may only be reused in accordance with practices approved by applicable regulatory agencies.

HAND WATERING. The application of water for irrigation purposes through a hand-held hose or watering container.

HARVESTED WATER. Precipitation or irrigation runoff collected, stored and available for reuse for irrigation purposes.

IRRIGATION SYSTEM. Any permanently installed system of pipes, hoses, or other conveyance devices and appurtenances that provides water to living plant material through spray heads or other emission devices located at, above, or below the ground surface. For the purposes of these Standards, a sprinkler, soaker hose, or other device connected to its water source via a moveable above-ground garden hose is not considered to be an irrigation system.

LANDSCAPE AREA. That portion of a parcel that contains turf or non-turf vegetation.

LOW-PRECIPITATION BUBBLER. An irrigation head which typically operates within six inches of ground level and delivers water at a rate of less than 0.45 gallons per minute within a radius of less than two feet of the head. Low-precipitation bubblers are typically used for irrigating non-turf vegetation.

MICRO SPRAY. The application of irrigation water through small, low volume sprayer heads in order to minimize runoff losses. Micro sprays are typically used for irrigating non-turf vegetation. Individual micro spray heads typically operate less than 12 inches above ground level and typically deliver water in the range of 0.10 to 0.50 gallons per minute within a radius of five feet or less of the head.

MULCH. A protective covering of organic material, such as sawdust, wood chips, compost, or other vegetative matter, spread on the ground to reduce evaporation and increase water retention.

ODD-NUMBERED PROPERTIES. Properties with street addresses that end in odd-numbered digits, or other properties so designated for the purposes of these Standards through special arrangements with OWASA.

OVERALL WATER DEMAND. The total water demand for any given month, as projected by OWASA.

OWASA. The Orange Water and Sewer Authority.

POTABLE WATER. Treated water provided by OWASA that is suitable for drinking, cooking, and other domestic use. Water that is collected indoors in containers from indoor faucets or spigots that would otherwise be discharged into drainpipes while a user awaits the warming of the water for dishwashing, other washing, shaving, bathing, or showering is not considered to be potable water for the purposes of these Standards.

PRECIPITATION RATE. The amount of water applied per unit of time, usually expressed in inches per hour.

PUBLIC PURPOSE ATHLETIC OR RECREATIONAL FIELD. An athletic or recreational field owned or leased by a public or not-for-profit entity and which is (a) operated for the use of the public pursuant to general invitation, and (b) not operated for the purpose of profit. For purposes of this definition, a golf course is not considered to be a public purpose athletic field or recreational field.

PUBLIC PURPOSE BOTANICAL SITE. A landscaped area which is owned or leased by a public or not-for-profit entity in which a variety of ~~plants~~plants are grown to be categorized and documented for scientific purposes and/or which may also be open to the public for entertainment and educational purposes.

PUBLIC RIGHT-OF-WAY. The area of land owned or maintained by municipal, county, or state government primarily for the use of the public for the movement of people, goods, vehicles, or storm water. For the purposes of these Standards, the public right-of-way shall include curbs, streets, sidewalks, and storm water drainage inlets, but shall not include adjacent landscaped areas that also may ~~also~~ be located within the legally delineated public right-of-way.

RAIN BARREL: A tank or container, typically located on the ground beneath a roof drainage system, that captures and stores rainwater for subsequent reuse.

RAW WATER. Water drawn from a reservoir or other water source before treatment.

RECLAIMED WATER. Highly treated effluent from a wastewater treatment plant that can be safely used for ~~such~~ non-potable purposes ~~as irrigation, heating/cooling, street cleaning, dust control, firefighting, and other applications that do not require water of potable quality~~approved by applicable regulatory agencies.

RUNOFF. Water ~~which~~ that is not absorbed by the soil or landscape to which it is applied. Runoff occurs when water is applied too quickly (application rate exceeds infiltration rate), particularly if there is a severe slope. These Standards do not apply to stormwater runoff which is created by natural precipitation rather than human-caused or applied water use.

SERVICE AREA. The geographic area in which OWASA provides or is authorized to provide water and/or sewer service.

SHUT-OFF NOZZLE. A device attached to the end of a hose that completely shuts off the flow, even if left unattended.

SOAKER HOSE. A flexible hose designed to emit a trickle of water along its entire length, either through numerous small-diameter (less than 1/32-inch) perforations or through the permeable material of its composition.

SPRAY IRRIGATION. The application of water to landscaping by means of a device, other than a hand-held hose or watering container, that projects water through the air in the form of small particles or droplets.

SPRINKLER HEAD. A device that projects water through the air in the form of small particles or droplets.

UNDERGROUND SYSTEM. An irrigation system with emitters installed beneath the ground surface.

WATER CONSERVATION PLAN (OWASA-APPROVED). A written document submitted by the owner or operator of a public purpose athletic field, recreational field, and/or a public purpose botanical site and approved by OWASA's Executive Director or his/her designee that specifies the conservation measures and irrigation operating modes that will be employed year-round at those public purpose facilities and the specific practices that will be employed to achieve Stage 1, 2, and 3 Water Shortage conservation goals enumerated in these Standards.

WATER WASTE. The non-beneficial use of OWASA potable water. Non-beneficial uses include but are not restricted to:

a. Landscape water applied in such a manner, rate and/or quantity that it overflows the landscaped area being watered and runs onto adjacent

property or public right-of-way; or landscape water applied during periods of rainfall or when soil moisture is already adequate.

b. The use of water for washing vehicles, equipment, or hard surfaces, such as parking lots, aprons, pads, and driveways~~, or other surfaced areas,~~ in such quantities to flow onto adjacent property or the public right-of-way.

c. Water applied in sufficient quantity to cause ponding on impervious surfaces.

d. Water lost through plumbing leaks that can be readily identified and corrected.

WATERING BAG. A container used to hold and slowly dispense water around the base of a tree or shrub. These are commonly called "Gators."

XERISCAPING. An approach to landscape design and maintenance that uses small amounts of water but sustains a traditional look through the proper conditioning of soil, the selection of appropriate drought-tolerant plants, generous use of mulch, efficient use of water, and other proven techniques.

Article II – Water Waste Prohibited, Penalties for Violating Standards

II. A. Water Waste Prohibited

No person, party, or entity shall use, cause, waste, or permit to be wasted any OWASA-supplied potable water~~,~~ in violation of the Standards set out herein.

II. B. Penalties

OWASA may discontinue water service to any customer where, after notice of a prohibited use is delivered to the service address, OWASA-supplied potable water continues to be used or wasted in violation of the Water Conservation Standards set out herein.

Article III – Year-Round Requirements, Policy and Practice

III. A. Exterior Use

1. The following outdoor or exterior use requirements shall apply to all customers using OWASA-supplied potable water:

   a. Spray irrigation shall not occur more than three days per week. Even-numbered properties may be irrigated with spray systems only on Sundays, Wednesdays, and/or Fridays. Odd-numbered properties may be irrigated with spray systems

only on Tuesdays, Thursdays, and/or Saturdays. All spray irrigation shall occur only between the hours of ~~8~~6:00 p.m. and ~~9~~10:00 a.m., and shall apply no more than one inch of water in any given week. These restrictions shall not apply to properties using underground, drip irrigation, micro spray, low precipitation bubblers, soaker hoses, hand watering, tree or shrub watering bags, or where watering of containerized plants and commercial plant stock in trade is maintained for resale.

~~b. Regardless of irrigation methods used, no more than one inch of water may be applied to plant material in any given week.~~

~~c.~~b All irrigation systems shall be equipped with automatic controllers that activate the system according to a desired frequency and duration, and shall also be equipped with rain or soil moisture sensors that will prevent irrigation during periods of rainfall or when there is sufficient moisture in the ground for plant health and survival.

~~d.~~c All hoses used for hand watering, ~~car~~vehicle washing, or other allowable outdoor uses shall be equipped with shutoff nozzles.

~~e.~~d No exterior use of OWASA-supplied potable water shall result in the flow of water onto adjacent property or public right-of-way, and all irrigation systems shall be designed and maintained to prevent to the extent practicable water from flowing onto paved or other impervious surfaces.

~~f.~~e Outdoor water leaks on property or facilities of OWASA customers ~~must~~ shall be repaired within ten (10) days of discovery by the customer and/or notification by OWASA.

~~2. The use of reclaimed or harvested water for outdoor uses is strongly encouraged. OWASA shall periodically publicize methods of collecting and storing harvested water in appropriate devices, such as rain barrels and cisterns; appropriate practices, such as xeriscaping, drought tolerant landscaping and mulching; and shall otherwise educate its customers on water conservation strategies and techniques.~~

~~3.~~2 Owners of public purpose athletic fields, recreational fields, and/or public purpose botanical sites shall not be subject to the year-round limitations of III.A.1a-e if those facilities are operated in compliance with an OWASA-approved Water Conservation Plan that specifies the conservation measures and irrigation operating modes to be employed at that facility year-round and during successive stages of a declared water shortage.

3. Unless superseeded by the declaration of a Water Supply Shortage or Emergency, the year-round requirements of III.A.1.a and III.A.1.b above shall not apply to the following:

a. Outdoor irrigation necessary for the establishment of newly sodded or seeded lawns and for the establishment of new non-turf plant materials ~~landscaping~~

within the first ~~30~~45 days of planting, ~~or watering of newly seeded turf within the first six months of planting.~~ provided that such irrigation occurs only between the hours of 6:00 p.m. and 10:00 a.m.

~~b. Outdoor irrigation necessary for the establishment of newly seeded turf within the first six months of planting, provided that such irrigation occurs only between the hours of 6:00 p.m. and 10:00 a.m.~~

~~b~~eb. Irrigation necessary for one day only where treatment with an application of chemicals requires immediate watering to preserve an existing landscape or to establish a new landscape, provided that such irrigation occurs only between the hours of 6:00 p.m. and 10:00 a.m.~~.~~

~~c~~dc. Water used to control dust or to compact soil when alternate methods are not available.

~~d~~ed. Visually supervised operation of watering systems for short periods of time to check system condition and effectiveness.

~~e. Water applied to prevent or abate health, safety, or accident hazards when alternate methods are not available.~~

~~f~~e. Water used for construction or maintenance activities where the application of water is the appropriate methodology and where no other practical alternative exists.

~~g~~f. Water used for firefighting, firefighter training, fire hose testing, fire pumper testing, and other emergency situation mitigation purposes.

~~h~~g. For situations in which there is no practical alternative, OWASA-supplied potable water may be used for other special purposes, such as washing out garbage trucks, cleaning up hazardous or unsanitary materials, etc., or for other purposes necessary to protect public health, safety, and welfare – provided that such water is used in the least quantity needed to accomplish the task.

III. B. Interior Use

—1. The following indoor or interior use requirements shall apply to all customers using OWASA-supplied potable water:

a. Restaurants and dining facilities shall serve water only upon request of the customer.

b. Hotels, motels, and other facilities providing sleeping accommodations shall change bed linens only upon request of the customer, or upon customer changeover, or every five days for long-term customers.

~~c. The operation of dishwashers and clothes washers only when loaded to their maximum capacity, or at water level settings appropriate for the size of the load being washed, shall be strongly encouraged.~~

~~d. The use of ultra-low flow toilets, tank dams, flow restrictors (aerators) and low-flow showerheads, where not otherwise required, shall be strongly encouraged; and additional indoor conservation practices – as well as devices – shall also be encouraged.~~

~~e. Plumbing systems shall be properly maintained and repaired to prevent water leaks.~~

~~f~~c. Indoor water leaks on property or facilities of OWASA customers ~~must~~ shall be repaired within ten (10) days of discovery by the customer and/or notification by OWASA.

2. Unless supere~~s~~eded by the declaration of a Water Supply Shortage or Emergency, the year-round requirements of III.B.1. above shall not apply to the following:

a. Visually supervised operation and flushing of plumbing systems for short periods of time to check system condition and effectiveness.

b. Water used for construction or maintenance activities where the ~~application~~ use of water is the appropriate methodology and where no other practical alternative exists.

~~c. *For situations in which there is no practical alternative, OWASA-supplied potable water may be used for other special purposes, such as washing out garbage trucks, cleaning up hazardous or unsanitary materials, etc., or for other purposes necessary to protect public health, safety, and welfare – provided that such water is used in the least quantity needed to accomplish the task.*~~

~~3. OWASA shall periodically publicize and otherwise educate its customers on additional methods to conserve the interior use of water.~~

~~a.~~

~~III.C.~~ Year-Round Policy and Practice

~~b.~~1. It shall be OWASA's policy and practice to publicize periodically water conservation methods, including but not limited to, methods of conserving water both indoors and outdoors; methods of collecting and storing harvested water in appropriate devices, such as rain barrels and cisterns; as well as information about the availability, feasibility and

allowable uses of reclaimed water from OWASA. It shall be OWASA's policy to strongly encourage and promote the following voluntary conservation measures year-round, regardless of water supply conditions:

a. Operate dishwashers and clothes washers only when loaded to their maximum capacity or at water level settings appropriate for the size of the load.

b. Where not otherwise required, install ultra-low flow toilets, tank dams, flow restrictors (aerators) and low-flow showerheads.

c. Repair and maintain plumbing systems to prevent water leaks.

d. Use harvested rainwater and/or reclaimed water for indoor and outdoor purposes where allowable and practical.

Article IV – Determination of a Water Supply Shortage or Emergency

IV. A. Drought Condition Shortage

OWASA's drought response strategy and Water Supply Shortage declarations will be guided primarily by the risk that OWASA's water supplies will decline to 20 percent or less of total storage capacity within the next 12-month period. A Stage One Water Shortage declaration will generally correspond to a two percent (or greater) risk that reservoir levels will decline to 20 percent or less of total storage capacity within the next 12 months; provided, however, that in making such a determination, OWASA will also consider the actual and projected severity of the ongoing drought relative to historical droughts included in OWASA's water supply simulation models; existing and anticipated demand, including expected customer response to water use restrictions; availability of supplemental supplies, including water purchases from neighboring communities; regional water supply conditions, including, but not limited to, the concurrent drought response status of neighboring jurisdictions; guidance or directives from the State of North Carolina; and other elements of reasonable professional judgment and management.

More severe Water Supply Shortage Stages will subsequently be declared if the risk level increases and/or if other factors indicate that further action is needed. Similarly, OWASA will reduce the severity of, or rescind, a Water Supply Shortage declaration as the risk level and related factors improve.

~~OWASA shall base its determination of existing or potential water shortage conditions on its analysis of reservoir levels, streamflow, existing and anticipated demand, availability of supplemental supplies, as well as other elements of reasonable professional judgment and management. The determination of drought shortage conditions shall be guided by periodic estimates of the risk (i.e., probability) that water stored in OWASA's reservoir system will decline to unacceptably low levels within the foreseeable future.~~

~~Until improved or alternative criteria are developed, OWASA's drought response strategy will be primarily guided by the level of risk that OWASA's water supplies will be depleted to 20 percent or less of total storage capacity within the next 12-month period. A Stage One Water Shortage declaration will generally correspond to a two percent (or greater) risk that reservoir levels will decline to 20% or less of total storage capacity within the next 12 months. More severe Stages will subsequently be declared if the level of risk increases and other factors indicate that further action is needed. Similarly, as the level of risk and related factors improve, OWASA will reduce the severity or rescind the Shortage declaration.~~

IV. B. Water Treatment, Storage, or Distribution Capacity Shortage

In addition to conditions caused by drought, OWASA may declare a Water Supply Shortage or Emergency whenever customer demand – as averaged over three consecutive days – exceeds 85 percent of OWASA's capability of treating and delivering water. The stage and duration of such a Water Supply Shortage or Emergency shall be guided by the degree to which customer demands approach or exceed OWASA's capacity to meet those demands, and by the degree to which conservation efforts successfully reduce short-term demands.

IV. C. ~~Natural and Man-Made~~ Disasters and Catastrophic Equipment ~~and~~ or Plant Failure Shortage

Any other circumstances, including service losses caused by equipment or facility failure, human error, deliberate act, weather, or other natural disaster, which constrain OWASA's water supply, treatment, or distribution capacity to less than that reasonably needed by its customers, shall constitute a Water Supply Shortage up to and including a Water Supply Emergency, requiring immediate action by OWASA.

Article V – Required Actions Under Water Supply Shortage or Emergency Conditions

In the event of a water supply shortage, OWASA shall, using its best professional judgment, determine which of the following stages is the most appropriate response to the estimated level of risk considering factors in IV.A above.

~~**V. A. Water Supply Advisory**~~

~~A Water Supply Advisory shall represent an alert to the public of a potential shortage and notification that water use restrictions may be imposed if the water supply and/or demand conditions do not improve in the near future. In the event of a declared Water Supply Advisory:~~

~~1. No mandatory water use restrictions other than year-round requirements already in place will be implemented.~~

~~2. OWASA shall make extensive use of media releases, advertising, and other reasonable means of publicizing the water supply advisory and the need for immediate voluntary conservation.~~

~~3. OWASA shall inform the Mayors of Carrboro and Chapel Hill and the Chair of the Orange County Board of Commissioners of its declaration of a Water Supply Advisory.~~

V. ~~B~~A. Stage One (1) Water Shortage

In the event that OWASA declares a Stage One Water Shortage, OWASA shall advise the Mayors of Carrboro and Chapel Hill and the Chair of the Orange County Board of Commissioners of its declaration and shall request that they issue Proclamations of a Stage One Water Supply Shortage. Upon OWASA's declaration of a Stage One Water Shortage, the following actions shall be taken with the goal of reducing overall water demand by ten (10) percent:

~~1. Water use by individually metered residential customer accounts and by individually metered *single family residential* irrigation only accounts shall be limited to no more than an average of one thousand (1,000) gallons per day during any monthly billing cycle beginning after the declaration of a Water Supply Shortage or Water Supply Emergency and ending while such restrictions are still in effect.~~

1. Spray irrigation of turf grass using OWASA-supplied potable water shall not occur more than one day per week with a maximum of one-half inch of water applied to plant material in any given week. ~~Even~~Odd-numbered properties shall be allowed to spray irrigate only on Tuesdays; ~~odd~~even-numbered properties shall be allowed to spray irrigate only on Thursdays. Spray irrigation of turf grass shall occur only between the hours of ~~8~~6:00 p.m. and ~~9~~10:00 a.m. Owners of public purpose athletic fields, recreational fields, and/or public purpose botanical sites shall not be subject to the limitations of this subsection V.A.1 if those facilities are operated in compliance with an OWASA-approved Water Conservation Plan.

~~These restrictions shall not apply to the watering of containerized plants and commercial plant stock in trade.~~

2. Spray irrigation of non-turf plant materials may occur up to three days per week as provided under the year-round requirements specified in Section III.A.1.a.

~~3~~3. Irrigation of non-turf plant materials by underground, drip irrigation, micro spray, low precipitation bubblers, soaker hose systems with automatic shutoffs, or by hand held hoses or watering cans may occur at any time or frequency~~, but shall be limited to a maximum of one-half inch of water applied to plant material in any given week~~.

~~4. No OWASA-supplied potable water may be used to re-fill ornamental fountains, ponds, and like devices.~~

~~5. No OWASA-supplied potable water may be used for the routine cleaning or washing of paved areas, such as sidewalks, decks, driveways, roadways, or parking lots. This restriction shall not apply to the pressure cleaning of exterior building surfaces.~~

Notwithstanding the restrictions specified in Sections V.A.1 through V.A.3, the protection of public health, safety, and welfare may, under special circumstances, require the use of limited amounts of OWASA-supplied potable water for such purposes as washing out garbage trucks, cleaning up hazardous or other ~~unsanitary~~ materials~~, etc~~. Such uses shall be permitted during declared Water Shortages or Emergencies, provided that other practical alternatives are not available and water is used in the least ~~amount~~ practical amount.

V. B~~C~~. Stage Two (2) Water Shortage

In the event that OWASA declares a Stage Two Water Shortage, OWASA shall advise the Mayors of Carrboro and Chapel Hill and the Chair of the Orange County Board of Commissioners of its declaration and shall request that they issue Proclamations of a Stage Two Water Supply Shortage, if not already issued. Upon OWASA's declaration of a Stage Two Water Shortage, the following actions shall be taken with the goal of reducing overall water demand by fifteen (15) percent:

~~1. Water use by individually metered residential customer accounts and by individually metered *single family residential* irrigation only accounts shall be limited to no more than an average of 800 gallons per day during any monthly billing cycle beginning after the declaration of a Water Supply Shortage or Water Supply Emergency and ending while such restrictions are still in effect.~~

~~2~~1. Spray irrigation of turf grass with OWASA-supplied potable water shall not be permitted, except ~~by~~ at public purpose athletic and recreational fields and public purpose botanical sites operating under OWASA-approved Water Conservation Plans. ~~persons regularly engaged in the sale of plants, who shall be allowed to irrigate their commercial stock in trade.~~

2. Spray irrigation of non-turf plant materials shall not occur more than one day per week according to the schedule specified in Section V.A.1 and in quantities of no more than ½ inch per week, except at public purpose botanical sites operating under OWASA-approved Water Conservation Plans.

3. Irrigation of non-turf plant material by underground, drip irrigation, micro spray, low precipitation bubblers, soaker hose systems with automatic shutoffs, tree or shrub watering bags, or by hand held hoses or watering cans may occur at any time or frequency.

~~shall be limited to a maximum of one-half inch of water applied to plant material in any given week.~~

4. No OWASA-supplied potable water shall be used to re-fill ornamental fountains, ponds, and like devices.

5. No OWASA-supplied potable water shall be used for washing vehicles, except at commercial or institutional car washes in which at least 50 percent of the water has either been recycled, is from a non- potable source, or is supplied by a well.

~~6. No OWASA-supplied potable water shall be used for filling or re-filling empty swimming pools. OWASA-supplied potable water may be used to top off operating swimming pools.~~

6~~7~~. No OWASA-supplied potable water shall be used for ~~the routine~~ cleaning or washing ~~of~~ exterior building surfaces, decks, or paved areas, such as sidewalks, driveways, roadways, and parking lots. This restriction shall not apply to the ~~pressure~~ cleaning of exterior building surfaces or decks prior to painting or re-painting ~~that is necessary to protect or maintain the physical integrity of the structure~~.

7~~8~~. No OWASA-supplied potable water ~~may~~ shall be used for fire department training or equipment testing unless required by State or Federal regulations.

Notwithstanding the restrictions specified in Sections V.~~C~~B.1 through V.~~C~~B.~~8~~7, the protection of public health, safety, and welfare may, under special circumstances, require the use of limited amounts of OWASA-supplied potable water for such purposes as washing out garbage trucks, cleaning up hazardous or other ~~unsanitary~~ materials~~, etc~~. Such uses shall be permitted during declared Water Shortages or Emergencies, provided that other practical alternatives are not available and water is used in the least ~~amount~~ practical amount.

V. ~~D~~C. Stage Three (3) Water Shortage

In the event that OWASA declares a Stage Three Water Shortage, OWASA shall advise the Mayors of Carrboro and Chapel Hill and the Chair of the Orange County Board of Commissioners of its declaration and shall request that they issue Proclamations of a Stage Three Water Supply Shortage, if not already issued. Upon OWASA's declaration of a Stage Three Water Shortage, the following actions shall be taken with the goal of reducing overall water demand by twenty (20) percent:

~~1. Water use by individually metered residential customer accounts and by individually metered *single family residential* irrigation only accounts shall be limited to no more than an average of 600 gallons per day during any monthly billing cycle beginning after the declaration of a Water Supply Shortage or Water Supply Emergency and ending while such restrictions are still in effect.~~

2~~1~~. The use of OWASA-supplied potable water for heating and/or cooling purposes shall be reduced in all but the most essential facilities to the extent ~~allowable~~ practical in

consideration of indoor air quality standards, weather conditions, and health and safety requirements.

~~3~~2. No OWASA-supplied potable water shall be used for irrigation of turf grass, except for public purpose athletic and/or recreational fields and public purpose botanical sites operating under water conservation plans that have been approved by OWASA's Executive Director or by his/her designee.~~with OWASA-supplied potable water shall be permitted, except via hand held hoses or watering cans. Such irrigation shall not occur more than three days each week, according to the schedule prescribed in III.A.1.a of these Standards; shall be applied to non-turf plant material only; and shall be limited to a maximum of one-half inch of water per week.~~

3. No OWASA-supplied potable water ~~may~~ shall ~~not~~ be used for irrigating non-turf plant material unless applied (a) via hand held hoses or watering cans, watering bags, drip irrigation or soaker hoses, or (b) at public purpose botanical sites operating under OWASA-approved Water Conservation Plans.

4. ~~No~~ OWASA-supplied potable water may be used to fill, re-fill, or top off swimming pools, but shall not be used for any other outdoor purposes, except for emergency fire suppression or other activities necessary to maintain public health, safety, or welfare.

~~5~~5. No bulk sale of potable OWASA water ~~will~~ shall ~~be allowed~~ occur except for the wholesale transmission of potable OWASA water to neighboring communities, or for other purposes necessary to maintain public health, safety, or welfare.

~~6~~6. No OWASA-supplied potable water may be used for washing any vehicles.

7. No OWASA-supplied potable water may be used for pressure washing building exteriors.

~~8. No OWASA-supplied potable water may be used for the flushing or pressure testing of new distribution lines unless that water is returned to the OWASA water supply system through methods approved by OWASA. This restriction shall not apply to the testing of in-building fire control sprinkler systems.~~

~~9. No OWASA-supplied potable water shall be used for filling or re-filling empty swimming pools or for topping off operating swimming pools.~~

~~10~~8. No OWASA-supplied potable water may be used for fire department training or equipment testing.

Notwithstanding the restrictions specified in Sections V.~~D~~C.1 through V.~~D~~C.~~10~~8, the protection of public health, safety, and welfare may, under special circumstances, require the use of limited amounts of OWASA-supplied potable water for such purposes as washing out garbage trucks, cleaning up hazardous or other ~~unsanitary~~ materials~~, etc~~. Such uses shall be permitted during

declared Water Shortages or Emergencies, provided that other practical alternatives are not available and water is used in the least practical amount.

V. D~~E~~. Water Supply Emergency

In the event that OWASA declares a Water Supply Emergency, OWASA shall so advise the Mayors of Carrboro and Chapel Hill and the Chair of the Orange County Board of Commissioners and shall request the issuance of a Proclamation of a Water Supply Emergency. In addition to those applicable measures listed above for a Stage Three Water Shortage, the following actions shall be taken upon OWASA's declaration of a Water Supply Emergency:

1. No OWASA-supplied potable water may be used for any outdoor purposes other than emergency fire suppression or other activities necessary to maintain public health, safety, or welfare.

2. No OWASA-supplied potable water shall be used to fill, refill or top off the water level in any private or public purpose swimming pool.

3. No OWASA-supplied potable water shall be used for the flushing or pressure testing of new distribution lines unless that water is returned to the OWASA water supply system through methods approved by OWASA. This restriction shall not apply to the testing of in-building fire control sprinkler systems

~~2~~4. The use of OWASA-supplied potable water for heating and/or cooling purposes shall be reduced in all but the most essential facilities to the extent ~~allowable~~ practical in consideration of indoor air quality standards, weather conditions, and health and safety requirements.

~~3~~5. Water service may be discontinued or reduced to designated users or in designated portions of the OWASA service area in order to preserve the availability of water for essential public health and safety requirements, such as fire protection, hospitals, clinics, and other critical community needs.

ORANGE WATER AND SEWER AUTHORITY

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MEETING SUMMARY

Joint Meeting of the OWASA Board of Directors with Members of the Chapel Hill Town Council, Carrboro Board of Aldermen and Orange County Board of Commissioners to Discuss Proposed Changes in Water Conservation Standards for OWASA Customers

Wednesday, February 25, 2009, 7:00 PM
Southern Human Services Center, 2501 Homestead Road, Chapel Hill

Orange County:	Valerie Foushee, Chair; Alice Gordon; Pam Hemminger; Bernadette Pelissier Staff: Laura Blackmon, County Manager; David Hunt, Deputy Clerk; David Stancil, Director of Environment and Resource Conservation; Tom Davis, Water Resources Coordinator
Town of Carrboro:	Randee Haven O'Donnell Staff: Steve Stewart, Town Manager; Roy Williford, Planning Director; Patricia McGuire, Planner; Randy Dodd, Planner
Town of Chapel Hill:	Kevin Foy, Mayor; James Ward, Mayor pro tem; Matt Czajkowski; Sally Greene; Ed Harrison; Mark Kleinschmidt; James Merritt; Bill Strom Staff: Roger Stancil, Town Manager; Florentine Miller, Deputy Town Manager; J.B. Culpepper, Director of Planning; David Bonk, Planner; John Richardson, Sustainability Officer
OWASA:	Randy Kabrick, Chair; Gordon Merklein, Vice Chair; Fred Battle; Mac Clarke; Gene Pease; Joyce Preslar; Alan Rimer; William Stott Staff: Ed Kerwin, Executive Director; Robert Epting, General Counsel; Patrick Davis, Utility Manager Generalist; Ed Holland, Planning Director; Greg Feller, Public Affairs Administrator; Andrea Orbich, Executive Assistant
Media:	Elizabeth Friend, WCHL; Lisa Young, Chapel Hill Herald
Citizens and other attendees:	Sydney Miller, Triangle J Council of Governments; Doug Chapman, NC Green Industry Council; James Carnahan; Lisa Scott; Diane Robertson; Don Rayno, NC Division of Water Resources; James Carnahan; Matthew Lynley; Stephanie Yera; Tamara Mittman

Randy Kabrick, Chair of the OWASA Board; Alan Rimer, Chair of OWASA's Natural Resources/Technical Systems Committee; and Ed Kerwin, Executive Director presented OWASA's proposal for changes in conservation standards and ordinances, and related information including demand patterns in recent years and lessons learned from the 2007-08 drought.

As expected, there was no action after discussion among the boards. The OWASA Board will in the near future consider the proposed changes and the questions and feedback received from the local governments. After approval of a final set of conservation standards by the OWASA Board, the recommended standards will be forwarded to the respective Boards for approval and adoption into their respective water conservation ordinances.

Items of information and discussion among the elected officials and OWASA included:

- OWASA developed the proposed changes based on experiences during the 2001-02 and 2007-08 droughts and comments from customers, including those received at a public meeting on September 24, 2008.
- On average, outdoor water use represents about 7% of the community's overall drinking water demand during the year.
- Conservation standards have a limited direct effect on reducing indoor water use.
- OWASA's tiered water rates for individually-metered residences appear to have been a substantial factor in reducing the number of residential customers using more than 10,000 gallons per month. (Residential use averages about 5,000 gallons per month.)
- OWASA projects water sales in Fiscal Year 2010 will be about 16% lower than water sold in Fiscal Year 2001 (even though 3,100 new customers have been connected during this time).
- Because many factors influenced customer behavior, it is not possible to estimate what effect, if any, the proposed conservation standards would have had on OWASA's water supply levels if the proposed standards had been in effect during the drought of 2007-08.
- The proposed standards would restrict non-spray irrigation (e.g., hand watering, soaker hoses, drip irrigation, etc.) only in emergency conditions.
- Some people perceive water line flushing during water shortages as wasteful and contrary to the purpose of the Conservation Standards. However, OWASA believes the energy and other costs of recapturing water used for flushing outweigh the water supply benefits of recovering the water. When flushing occurs, a sign should be visible that informs the community of the need for the flushing operation (in plain and simple terms).
- There is a need to coordinate local water use restrictions among the many communities in the Triangle, especially when OWASA buys from or sells water to another utility during a drought.
- Staff from Raleigh, Cary, Apex, OWASA and the Triangle J Council of Governments have been working to increase consistency among local conservation requirements. This effort is expected to result in more uniformity in year-round water use requirements, the number of Water Shortage stages, and the basic restrictions for each stage in several Triangle communities. However, because of the actual differences in the hydrologic responses of different local water supply systems to a given drought, local communities in the region will not necessarily have the same restrictions in effect during a given drought.
- When a public purpose botanical site or recreational site irrigates during a declared water shortage in accordance with an OWASA-approved conservation plan for that facility, an official OWASA sign should be posted to inform the public.

- The Water Supply Advisory stage in the existing conservation standards is proposed to be eliminated because it has been confusing to the public and offers no real benefits (because there are no differences between water use restrictions in normal ("Year-round") and "Advisory" stages).
- Public information and education will remain very important in implementing the proposed changes.
- Enabling legislation from the State would likely be necessary if local governments want to require the replacement of older, inefficient plumbing fixtures upon the sale of existing buildings.
- Substantial conservation by the community contributed to the OWASA rate increase in October, 2008, but conservation has long-term benefits in making it possible to defer major system capacity expansions.
- Conservation is the cheapest water source.

Prepared by OWASA staff.