

**ATTACHMENT 3**

AGENDA #6

**MEMORANDUM**

TO: Mayor and Town Council

FROM: W. Calvin Horton, Town Manager

SUBJECT: OWASA Presentation on Water Conservation

DATE: January 28, 2002

The attached information is provided by the Orange Water and Sewer Authority as part of tonight's presentation. We understand that Bernadette Pelissier, Chair of the OWASA Board of Directors, will make a brief report.

**ATTACHMENT**

1. Orange Water and Sewer Authority Report (p. 2).





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ATTACHMENT 1

## ORANGE WATER AND SEWER AUTHORITY

*Quality Service Since 1977*

January 16, 2002

Mr. W. Calvin Horton  
Chapel Hill Town Manager  
306 North Columbia Street  
Chapel Hill, NC 27516

Dear Cal:

This letter and attachments are offered as background information and context for the water conservation item scheduled for the January 28<sup>th</sup> Chapel Hill Town Council meeting. We would appreciate your including this information in the agenda packet. Bernadette Pelissier, Chair of the OWASA Board of Directors, will be making a brief presentation to introduce the Town Council to this item for which the OWASA Board seeks approval by April 2002.

### **The Context – Managing Demand as Well as Supply**

Most of OWASA's recent efforts have focused on assuring a safe and adequate supply of water for our customers. Thanks to the support of Carrboro, Chapel Hill, and Orange County, we are well positioned to provide sufficient raw water reserves for the next 50 years. Improvements are also underway to assure that our water treatment, storage, and delivery facilities are able to meet our customers' present and future demands.

In addition to providing an adequate *supply* of water, OWASA seeks to manage customer *demands* in order to sustain the value of our community resources for as long as possible. The principle tools for achieving this include our new Conservation Water Rates, which go into effect this May (information provided previously), and our proposed new Water Conservation Ordinance, which is the focus of our January 28 presentation to the Town Council.

### **Revised Water Conservation Ordinance**

As noted in Ms. Pelissier's December 17, 2001 letter to Mayor Foy, the current conservation ordinances enforced by Carrboro, Chapel Hill, and Orange County need

revisions to better reflect the present status of our resources, as well as our understanding of water use by OWASA customers. Main features and issues associated with the proposed ordinance:

1. OWASA lacks legal authority to enact community-wide water use restrictions. The proposed ordinance – like the present one – would be enforced by the Towns and County.
2. Provisions of the ordinance would be invoked, upon advice from OWASA, if one or more conditions are met. The proposed “triggers” would be based on water remaining in Cane Creek and University Lake; current levels of customer demand; or other conditions that seriously constrained OWASA’s ability to meet its customers’ needs.
3. Basic provisions of the new ordinance:
  - Year-round requirements – Installation of rain or moisture sensors on all automatically activated irrigation systems.
  - Stage I Water Shortage – Irrigation only on odd/even days for automatic or unattended irrigation systems; irrigation only after dusk or before dawn; no OWASA-supplied water served in restaurants, except on request.
  - Stage II Water Shortage – Same as Stage I, except irrigation allowed only one day of each week; no use of OWASA-supplied water to fill decorative fountains, pools, ponds, or swimming pools; previously filled swimming pools may be replenished only “to the minimum essential for operation.”
  - Water Supply Emergency – No outdoor use of OWASA-supplied water for anything other than emergency fire suppression.
4. University officials have agreed to a corresponding range of voluntary restrictions that are delineated in the proposed ordinance.

### **Chapel Hill Action Requested**

We are asking that the Chapel Hill Town Council adopt the proposed ordinance by April 2002. This date is appropriate for three reasons: (1) Relevant and timely public awareness will coincide with the May 1 start of OWASA’s new Conservation Rates, (2) if the current drought has not ended and Cane Creek and University Lake have not refilled by that time, water use restrictions may be needed during the coming summer, and (3) if

Mr. W. Calvin Horton  
January 16, 2002  
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construction to expand the capacity of the Jones Ferry Road Water Treatment Plant which is scheduled for completion in the spring of 2002 is delayed, water use restrictions may be needed.

We will be glad to provide any further information that you or your staff may need before January 28, when we look forward to meeting with you and the Town Council.

Sincerely,



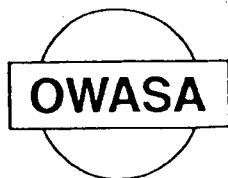
Ed Kerwin  
Executive Director

EK/EH/ao

Attachments

c: Mr. Roger Waldon, Planning Director  
Ms. Joyce Smith, Town Clerk  
OWASA Board of Directors





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ORANGE WATER & SEWER AUTHORITY

*Quality Service Since 1977*

December 17, 2001

Mayor Kevin Foy  
Town of Chapel Hill  
306 North Columbia Street  
Chapel Hill, North Carolina 27516

Dear Mayor Foy;

I am writing to respectfully request 10 minutes of time at the Council's January 28, 2002 meeting to present an overview of our proposed changes to the Water Conservation Ordinances enforced by Carrboro, Chapel Hill and Orange County. As you know, OWASA does not have the legal authority to enact or enforce such ordinances, this responsibility resides with the Towns and County.

The existing ordinances of Carrboro, Chapel Hill and Orange County are virtually identical and were originally adopted with OWASA's guidance during the early 1980s. They invoke successively restrictive levels of voluntary and ultimately mandatory water conservation under drought conditions, as defined only by specific water levels in University Lake. These ordinances no longer reflect the community's water resource status and needs, and are now considered to be obsolete.

We are confident that OWASA's present water resources and facilities can adequately meet the needs of the community, but we believe it is important to make the most of those assets, and also to provide an orderly mechanism for reducing customer demands during any unforeseen situations or emergencies that may arise. For these reasons, OWASA has drafted a new ordinance that better fits the needs of our current and future customers. A copy is provided for your review, along with graphs of the proposed conservation "triggers." These are superimposed over the past six years of water consumption data to illustrate what our conservation status would have been if the new ordinance had been in place.

We look forward to meeting with you on January 28, 2002, to formally present this information.

Very truly yours,

Bernadette Pelissier  
Chair, OWASA Board of Directors

Attachment  
BP/EK/EH/ao

cc: Mr. Cal Horton, Chapel Hill Town Manager  
Ms. Joyce Smith, Chapel Hill Town Clerk  
OWASA Board of Directors  
Ed Kerwin, Executive Director

**AN ORDINANCE PROVIDING FOR THE YEAR-ROUND CONSERVATION OF WATER AND FOR TEMPORARY RESTRICTIONS DURING WATER SHORTAGES AND EMERGENCIES**

**Section I. Purpose**

This ordinance is enacted to support the following primary water conservation and demand management goals:

1. To reduce the rate of growth in overall water use so as to maximize the community's existing and planned water supply sources; and
2. To reduce the upward trend of seasonal peak day demands that drive the costly expansion of water treatment, storage, and transmission facilities; and
3. To provide an orderly process for reducing community-wide water demands during periods of water shortage or emergencies.

**Section II. Year-Round Practices**

1. All Orange Water and Sewer Authority (OWASA) customers are encouraged to exercise voluntary water conservation practices at all times during the year, regardless of water shortage or emergency conditions. OWASA shall periodically provide informational guidelines and conservation tips to its customers.
2. By *[date to be determined]*, all irrigation systems that are equipped with automatic timers and which use OWASA-supplied potable water shall be equipped with automatic rain or soil moisture sensors that are activated to prevent the operation of those irrigation systems while rain is falling and/or when soil moisture is adequate. Rain and soil moisture sensing devices shall be subject to approval by OWASA.

**Section III. Determination of Water Shortage or Emergency**

A water shortage or water emergency shall be deemed to exist when OWASA cannot supply its customers with sufficient water to protect the public health and safety without substantial reductions in water demand.

1. Any of the following conditions, as determined by OWASA's Executive Director, shall constitute a Stage I Water Shortage:
  - a) The total volume of water stored in OWASA's Cane Creek/University Lake/Stone Quarry reservoir system is equal to or less than 125 summer days of OWASA customer demand, as determined on the basis of average raw water usage during the months of May through September of the previous calendar year;

*[Example: If the average raw water demand during the previous summer was 10.8 million gallons per day (MGD), and the OWASA reservoir system currently*



*contained 2.8 billion gallons of water in storage, the total volume of stored water would be equal to 2.8 billion/10.8 MGD = 259 days of demand. This example would not constitute a Stage I Water Shortage];*

or

- b) It is otherwise determined that the Cane Creek/University Lake/Stone Quarry system is unable or unlikely to continue meeting the demands of OWASA's customers without a substantial reduction in consumption;

or

- c) The customer demand for water averaged over three successive days, as measured by OWASA production records, exceeds 90 percent of the target three-day peak limit established for that year. Target limits may be established each April by multiplying average finished water demands for the previous 12 months by a peaking factor of 1.65, or may be established by other production constraints – such as water treatment capacity – determined by OWASA's Executive Director.

*[Example: If average finished water demand for the previous 12 months was 9.5 MGD, then the target limit for the coming summer would be 9.5 MGD x 1.65 = 15.7 MGD. A water shortage would be declared if the demand, when averaged over three successive days, exceeded 90 percent of that target level; e.g., 0.90 x 15.7 MGD = 14.1 MGD.]*

2. Any of the following conditions, as determined by OWASA's Executive Director, shall constitute a Stage II Water Shortage:

- a) The total volume of water stored in OWASA's Cane Creek/University Lake/Stone Quarry reservoir system is equal to or less than 75 summer days of OWASA customer demand, as determined on the basis of average raw water usage during the months of May through September of the previous calendar year;

or

- b) It is otherwise determined that the Cane Creek/University Lake/Stone Quarry system is unable or unlikely to continue meeting the demands of OWASA's customers without a substantial reduction in consumption;

or

- c) If the customer demand for water averaged over three successive days, as measured by OWASA production records, exceeds 97 percent of the target three-day peak limit established for that year. Target limits may be established each April by multiplying average finished water demands for the previous 12 months by a peaking factor of 1.65, or may be established by other production constraints

– such as water treatment capacity – determined by OWASA’s Executive Director.

*[Example: If average finished water demand for the previous 12 months was 9.5 MGD, then the target limit for the coming summer would be  $9.5 \text{ MGD} \times 1.65 = 15.7 \text{ MGD}$ . A water shortage would be declared if the demand, when averaged over three successive days, exceeded 97 percent of that target level; e.g.,  $0.97 \times 15.7 \text{ MGD} = 15.2 \text{ MGD}$ .]*

3. Any other circumstances, including service losses caused by equipment failure, human error, weather, or other natural disaster, which constrain OWASA’s water production capacity to less than the current level of customer demand, may constitute a Water Supply Emergency, as determined by OWASA’s Executive Director.

**Section IV. Proclamation of Water Shortage or Water Supply Emergency**

In the event of a water shortage or water supply emergency as determined in Section III, the *[Mayor/Chair]* of the governing board of *[Carrboro/Chapel Hill/Orange County]* is authorized, empowered, and directed to issue a public proclamation declaring to all persons the existence of such state and the severity thereof, and in order to more effectively protect the health and safety of the people within *[Carrboro/Chapel Hill/Orange County]*, to place in effect the restrictive provisions hereinafter authorized.

**Section V. Mandatory Conservation During Stage I Water Shortage**

In the event the *[Mayor/Chair]* issues any such proclamation of Stage I Water Shortage described in Section III.1, then and in that event, it shall be unlawful for any person, firm, or corporation to use or permit the use of potable water from the water system within *[Carrboro/Chapel Hill/Orange County]* supplied through the facilities of OWASA for any of the purposes hereinafter set forth until such time as this Ordinance is amended or repealed, or until the *[Mayor/Chair]*, by public proclamation, has declared certain provisions no longer in effect.

1. Irrigation of lawns, gardens, trees, or shrubs with OWASA-supplied potable water applied through any system or device other than a hand-held hose or watering can shall be allowed only three days out of each week. Properties with odd-numbered street addresses shall be allowed to irrigate only on Mondays, Wednesdays, and/or Fridays; properties with even-numbered addresses shall be allowed to irrigate only on Tuesdays, Thursday, and/or Saturdays. A total of no more than one inch of water (as measured in a shallow container, such as an empty tuna fish can) should be applied during any given week. The restrictions of this section shall not apply to any persons regularly engaged in the sale of plants, who shall be allowed to irrigate their commercial stock in trade.
2. Irrigation of lawns, gardens, trees, or shrubs with OWASA-supplied potable water that is sprayed through the air via any system or device other than a hand-held hose or watering can shall occur only after dusk or during pre-dawn hours.

3. No OWASA-supplied potable water shall be used on sidewalks, driveways, patios, cars, buildings, or other impervious surfaces of a similar nature.
4. No OWASA-supplied potable water shall be served in public restaurants except on request.
5. Business and institutional customers, including the University of North Carolina at Chapel Hill (UNC), shall be encouraged to:
  - a) Cease the use of OWASA-supplied potable water for outdoor purposes, except as provided in items 1 and 2 above. UNC is encouraged to develop a three-day irrigation schedule for campus facilities in consultation with OWASA.
  - b) Curtail the use of OWASA-supplied potable water for the cleaning of facilities such as window air conditioning units, chilled water coils, closed loop heating systems, and government-owned vehicles.
  - c) Reduce the heating/cooling load demand from lower priority facilities.

**Section VI. Mandatory Conservation During Stage II Water Shortage**

In the event that the [Mayor/Chair] issues any such proclamation of Stage II Water Shortage described in Section III.2, then and in that event, it shall be unlawful for any person, firm, or corporation to use or permit the use of potable water from the water system within [Carrboro/Chapel Hill/Orange County] supplied through the facilities of OWASA for any of the purposes hereinafter set forth until such time as this Ordinance is amended or repealed, or until the [Mayor/Chair], by public proclamation, has declared certain provisions no longer in effect.

1. All the mandatory provisions of a Stage I Water Shortage, as described in Section V, shall remain in effect, except that the irrigation of lawns, gardens, trees, or shrubs with OWASA-supplied potable water applied through any system or device other than a hand-held hose or watering can shall be allowed only one day out of each week. Unless otherwise recommended by the OWASA Executive Director, properties with odd-numbered street addresses shall be allowed to irrigate only on Mondays; and properties with even-numbered addresses shall be allowed to irrigate only on Thursdays. No more than one-half inch of water (as measured in a shallow container, such as an empty tuna fish can) should be applied during any given week. UNC is encouraged to develop a one day a week irrigation schedule for campus facilities in consultation with OWASA. The restrictions of this section shall not apply to any persons regularly engaged in the sale of plants, who shall be allowed to irrigate their commercial stock in trade.
2. No OWASA-supplied potable water shall be introduced into any decorative fountain, pool, or pond; or to fill any swimming pool; or to replenish any filled swimming pool, except to the minimum essential for operation

**Section VII. Mandatory Conservation During Water Supply Emergency**

In the event the [Mayor/Chair] issues any such proclamation of Water Supply Emergency described in Section III.3, then and in that event, it shall be unlawful for any person, firm, or corporation to use or permit the use of potable water from the water system within [Carrboro/Chapel Hill/Orange County] supplied through the facilities of OWASA for any of the purposes hereinafter set forth until such time as this Ordinance is amended or repealed, or until the [Mayor/Chair], by public proclamation, has declared certain provisions no longer in effect:

1. No OWASA-supplied potable water shall be used for any outdoor purposes other than emergency fire suppression.
2. Water service may be discontinued or reduced, as determined by OWASA's Executive Director, in designated portions of the OWASA service area through the manipulation of valves, pumps, and other appurtenances in order to preserve the availability of water for public health and safety facilities, such as hospitals, medical clinics, etc., fire protection, and other critical community needs.
3. UNC and any other customers that use OWASA-supplied potable drinking water for heating/cooling systems shall be encouraged to reduce the heating/cooling demand in all but the most essential facilities.

**Section VIII. – Penalties**

Any violations of the provisions of this Article shall constitute a misdemeanor punishable upon conviction by a fine not exceeding fifty dollars (\$50.00) or imprisonment not exceeding thirty (30) days as provided by General Statute Section 14-4, and in addition thereto, such violation may be enjoined and restrained as provided in General Statute Section 160A-175

**Section IX. Injunctive remedies**

Pursuant to the provisions of General Statute Section 160A-193, the injunctive remedies therein provided shall be applicable for the summary abatement or remedying of appropriate conditions dangerous or prejudicial to the public health both within the town limits and within one mile thereof, and the expenses thereof shall be assessed as provided therein.

**Section X. Severability**

If any section, subdivision, clause, or provision of this Article shall be adjudged invalid, such adjudication shall apply only to such section, subdivision, clause, or provision so adjudged, and the remainder of this Article shall remain fully valid and effective.

