

Select Wellfield Data and Water Conservation Efforts: UConn's Main Campus (Storrs) & Depot Campus

Compiled by the UConn Office of
Environmental Policy



May 24, 2004

Description of the Wellfields

Fenton Wellfield – The Fenton Wellfield is adjacent to the Fenton River on the edge of the East (Ag) Campus; the river forms the wellfield's eastern boundary. There are four active wells (Wells A, B, C, and D), which provide ~20-25% of UConn's supply and are located about 1/2 mile northeast of UConn's Main Campus.

Willimantic Wellfield – The Willimantic Wellfield is adjacent to the Willimantic River and the northern edge of the Depot Campus; the river forms the wellfield's western boundary. There are four active wells (UConn #1, 2, 3, and 4), which provide ~75-80% of UConn's supply.

Willimantic Wells - Pump Capacities (gpm)

Well	Capacity	Safe Yield	Registered
UConn #1	400	562	450 (.65 MGD)
UConn #2	210	271	300 (.43 MGD)
UConn #3	400	545	450 (.65 MGD)
UConn #4	540	560	500 (.72 MGD)

Changes to the University

1989 - previous peak enrollment and water demand year

The data is compared to the most current full calendar year of data analyzed – 2002.

Population

- Total User Population Headcount in 1989 ~27,000
- Total User Population Headcount in 2002 ~30,000

Square Footage of the Campus (Million)

1989 – 7.1

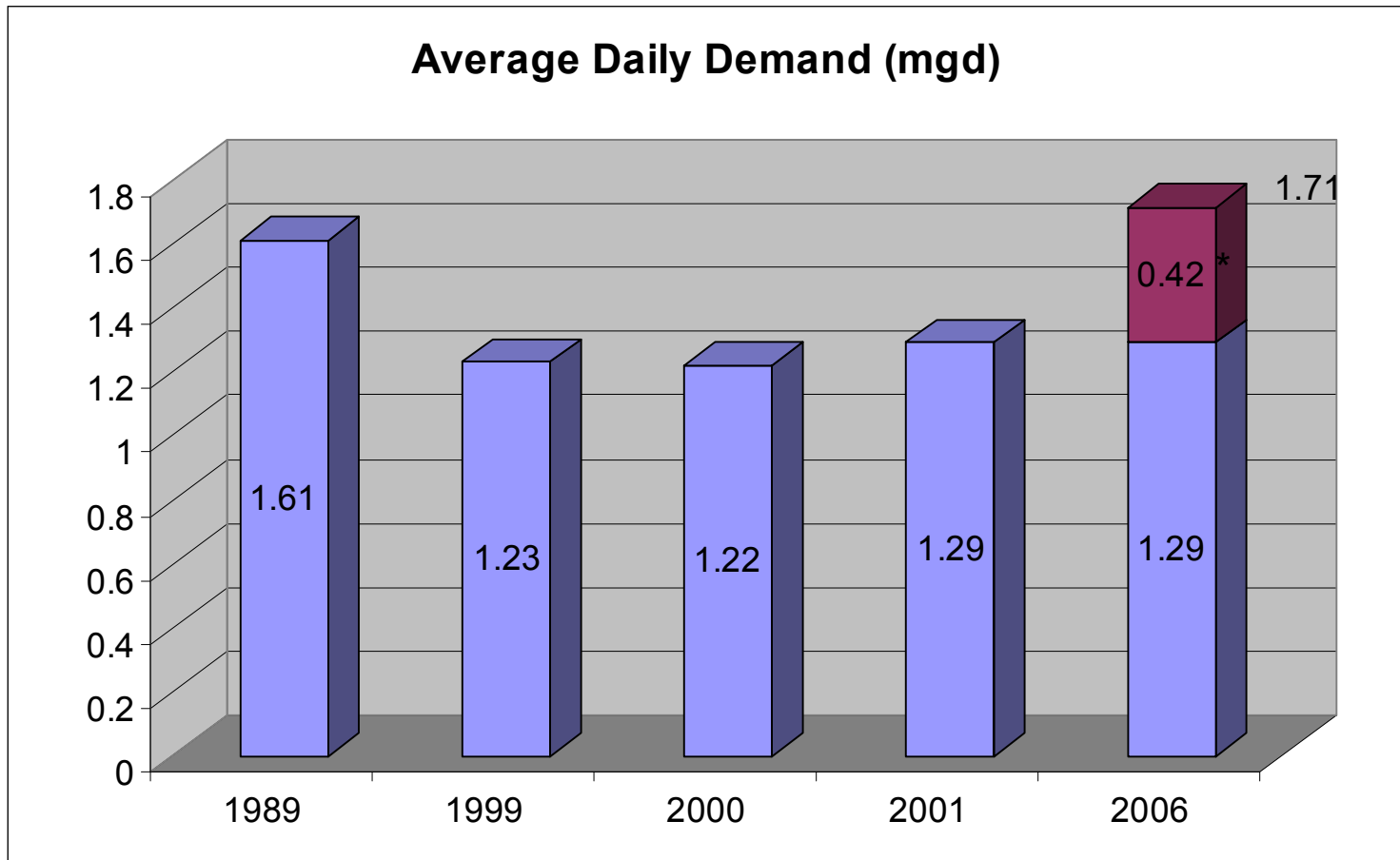
2002 – 9.4

Water Demand 1989 v. 2002

University of Connecticut, Storrs

Year	Average Day Demand	Peak One-Day Demand	Maximum Month Average Day Demand
1989	1.61	2.94	1.86
2002	1.25	1.89	1.47

Potable Water Average Daily Demand



* Projected demand from new construction, additions and remodeling planned from 2002 to 2006

Conservation Efforts

The amount of water used by the University during the past 15 years has decreased despite an increasing user population. This reduction is attributed to the University's commitment to improve water efficiency, incorporate water conservation devices in all new construction, and make infrastructure repairs and improvements that reduced water demands. Measures include:

- Demolition of old, inefficient buildings
- Construction of new, efficient buildings with water conservation devices
- Repair and/or replacement of leaking water pipes
- Renovation of old buildings with water conservation devices
- Installation of water efficient washing machines and dish washers
- Replacement of old distribution pipes
- Renovation of the Central Heating Plant
- Replacement of old condensate pumps and condensate pipes
- Installation of water efficient research equipment
- Replacement of smaller air conditioning systems with a connection to the chilled water plant
- Replacement of old fire service pipes

Leak Detection Program

Pre-capital improvement program (UConn 2000) leak detection and repair data.

	1991	1993	1996
Total Leaks (Gallons Per Day)	84,000	32,400	5,900

University of Connecticut

Environmental Policy

April 22, 2004

In fulfilling its mission as Connecticut's land grant, public research university and its corresponding obligation to protect and preserve natural resources for an environmentally sustainable future, the University of Connecticut commits to the following principles of environmental leadership:

Performance: The University will institutionalize best practices and continually monitor, report on and improve its environmental performance.

Responsible management and growth: The University will endeavor to design, construct and maintain its buildings, infrastructure and grounds in a manner that ensures environmental sustainability and protects public health and safety.

Outreach: The University will promote environmental stewardship in Connecticut and embrace environmental initiatives in partnership with its surrounding communities.

Academics: The University will advance understanding of the environment through its curriculum, research and other academic programs, and will employ an ethic of environmental stewardship in all intellectual pursuits.

Conservation: The University will conserve natural resources, increase its use of environmentally sustainable products, materials and services, including renewable resources, and prevent pollution and minimize wastes through reduction, reuse and recycling.

Teamwork: The University will encourage teamwork and provide groups and individuals with support, guidance and recognition for achieving shared environmental goals.

We, the community of students, faculty, staff and administration at the University of Connecticut, both individually and collectively, affirm our commitment to act in accordance with these principles.

2004 Environmental Sustainability Initiative: Water Conservation

- Goal: Implement BMPs and demonstration projects that result in 10% water usage reductions during the next year from identified operations and buildings in the following categories:
Research/Academic, Dining Services, Athletics, Farm Services and Residential Life.

Current Efforts

- Dining Services - inventory of water usage from kitchen equipment
- Facilities Operations - waterless urinal demo
- Residential Life - installed 522 Maytag high efficiency/front load washing machines on campus:
 - 15-18 gallons per load, compared to the 30-32 with top loader machines
 - Based on the 2002 actual usage with top load washers, the University will save more than 2,600,000 gallons of water annually with the front load machines.

- Architectural & Engineering Services - Installing sub-meters to measure water use in all campus buildings (Summer 2004)
- CANR/Farm Services - Upgrading current watering system used for the chicken coops (bubbler drinkers) by installing a more efficient closed loop system (nipple drinkers)

Action Plan

- Installed sub-meters will be used to test water flow in the following areas:
 - Dining Facilities: Towers, McMahon, South Dining Hall, and Whitney
 - Academic/Research Buildings: Chemistry, Math/Science, new School of Business, and the Young Building
 - Residence Halls: South Campus Dorms A, North Campus Residence Halls, Greek Housing Community, and Buckley Residence Halls.

- Athletics: pool usage, showers, and laundry facilities
- Animal/Farm Sciences: chicken coops, dairy barns, and the greenhouse

A test period will be set up to perform water sub-meter reading in the Summer, Fall and Spring. Readings will be done under comparable conditions to determine effectiveness of outreach and other conservation measures.

Conclusions

- The pump capacities of 3 of 4 wells in UConn's Willimantic wellfield are significantly below both their respective safe yield and registered diversion amounts.
- The University has made a considerable capital commitment to repair leaks and install water saving devices. This effort has significantly reduced water demands as evidenced by the decrease in water usage.
- The University is using less water today than it did during the 1980's to mid 1990's, despite a growth in the University's population and square footage.
- A recently-adopted UConn Environmental Policy and 2004-05 sustainability initiatives have renewed water conservation efforts and led to additional water conservation action plans.