

15th Annual Meeting

Environmental Management Plan for the Whitney Water Treatment Plant

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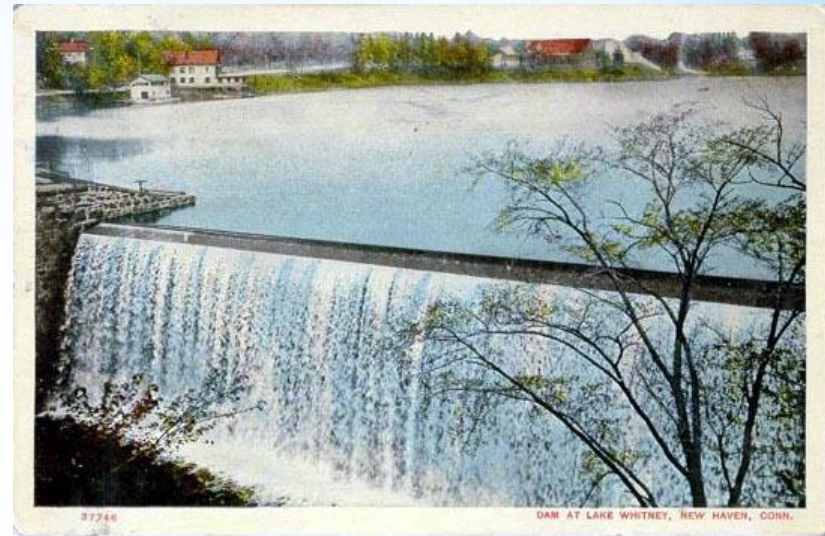
Agenda

- Background
- Management Plan
- 2014 Summary



Lake Whitney

- Dam on the Mill River- Eli Whitney II, 1860
 - * Drinking water
 - * Fire fighting
 - * Hydropower for Whitney Armory
- First water supply - City of New Haven/New Haven Water Co. 1862



Lake Whitney Water Treatment Plant

- Slow Sand Filtration Plant 1906-1991; Demolished 2002
- New Water Treatment Plant Completed 2005



Environmental Study Team Final Report - January 1999

- * Year-long study commissioned by RWA
- * Potential adverse environmental impacts during dry periods/drought if not mitigated
- * Recommended RWA develop a Management Plan to balance public water supply and environmental needs

July 2000 Authority Board Resolution

- * Management Plan with flexibility
- * Annual public meeting re. Management Plan
- * Informational Web Site
- * Public Notice provisions

7/26/00 - NHR

New Haven, Hamden get Mill River promise

By Rebecca Baker
Register Staff

HAMDEN — After months of negotiations, New Haven and Hamden finally got what they wanted from the local water authority: a written promise to protect the Mill River after a water treatment plant is built on Lake Whitney.

The South Central Connecticut Regional Water Authority on Tuesday adopted a resolution that commits the authority to developing and maintaining a "management plan" that will protect the lake and river below the dam.

"The cities needed to get a comfort level," water authority President John Crawford said.

"They wanted a legally binding agreement and we couldn't do that. Our plan is an evolving plan. This allows us to move forward."

The resolution effectively kills a lawsuit in Superior Court in New Haven that blocked the authority from building the \$49 million treatment plant at Whitney Avenue and Armory Street.

Mayors John DeStefano Jr. of New Haven and Carl Amento of Hamden announced the agreement with Crawford during a press conference Tuesday at the Eli Whitney dam waterfall.

"I feel like I've been the cheerleader for this all along," Amento said. "On this issue we felt like we

Please see *Water*, Page A6

Water Authority agrees to protection plan for Mill River

Continued from Page A1
needed written assurance."

Both mayors had asked the authority to create a management plan explaining how it would draw water from Lake Whitney while preserving a downstream flow into the Mill River.

Without a written agreement, officials feared a corporate controlled authority could sell larger quantities of water to other communities for profit, at the expense of the river.

The lawsuit, filed jointly by

New Haven and Hamden in December, also was prompted by questions about the authority's plan to divert up to 15.4 million gallons of water daily from the Mill River. A water reduction could kill fish, birds and other aquatic life if left unprotected, environmentalists said.

DeStefano said the management plan provides enough of a paper trail that New Haven has the "basis for legal recourse" if the authority would ever take action to harm the environment.

"Not only can we count on the

wisdom of current management, future management will have to take account of what's in the record," he said.

According to the resolution, the authority must:

- Meet certain performance standards to stop fish kills and protect aquatic life when water flow is low.

- Continue to monitor the entire lake-river system and by 2002 come up with a way to maintain oxygen levels in the water from the dam to the Orange Street bridge.

- Hold annual public meetings to discuss any proposed suspensions or changes in the management plan.

- Maintain an "environmental study team" to review the effects of the treatment plant on the lake and river, propose improvements and work to update water supply and drought response plans.

- Create an interactive Web site dedicated to information about the lake and river.

New Water Treatment Plant

- * Plant Operational 2005
 - * Green building design
 - * Natural landscape with public access
 - * Dam modifications for downstream releases

Whitney Management Plan

- Balance Human & Ecological Water Needs
 - * Lake level based allowed withdrawal rates
 - * Downstream flow releases to river via piped outlet &/or simulated waterfall (when lake level is below spillway elevation)
 - * Operational exceptions: drought, fires, system emergencies, etc.



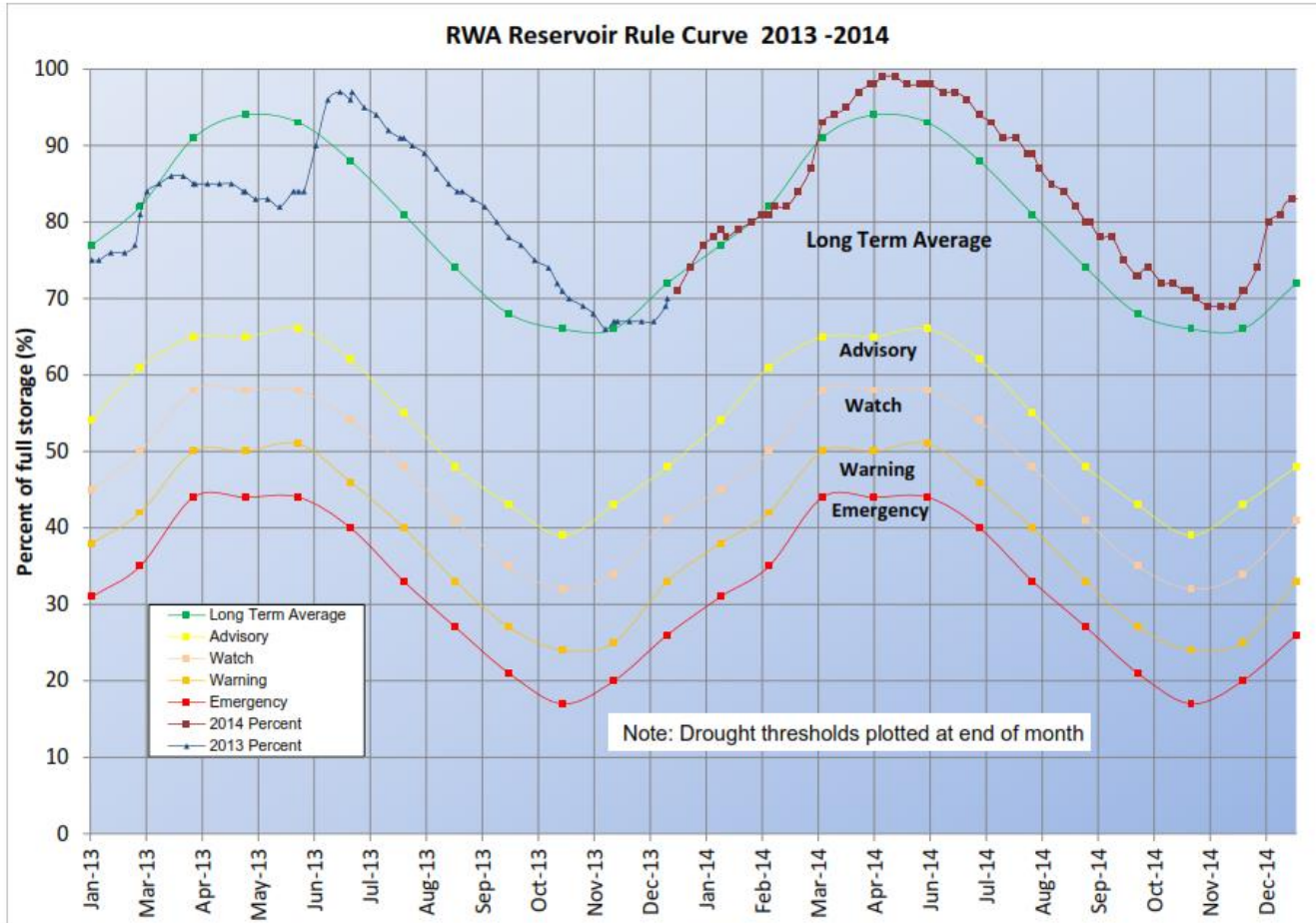
2014 Precipitation

- 47 inches total (Long-term average = 47 in)
- Reservoirs full by May 1
- Dry Sept: 1.15 inches (average 3.8 inches; 9th driest since 1912)



	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2014	2.47	2.75	4.96	5.21	6.19	3.74	5.27	2.68	1.15	4.70	3.46	4.62
103 yr average	3.61	3.32	4.39	4.22	3.94	3.76	3.70	4.02	3.79	3.78	3.99	4.08

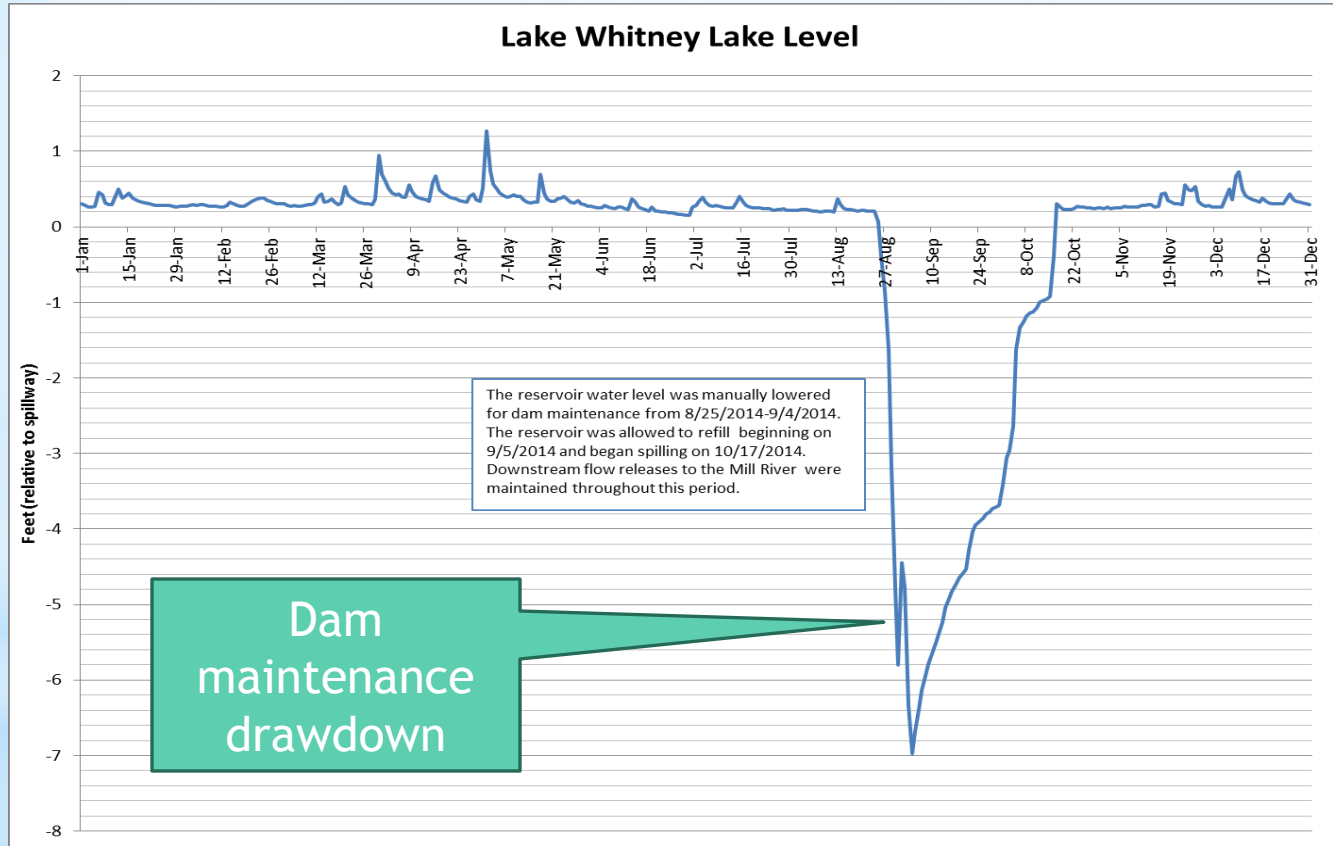
RWA Reservoir Storage 2013-2014 (%Full)



Aug 2014 Drawdown for Dam Maintenance

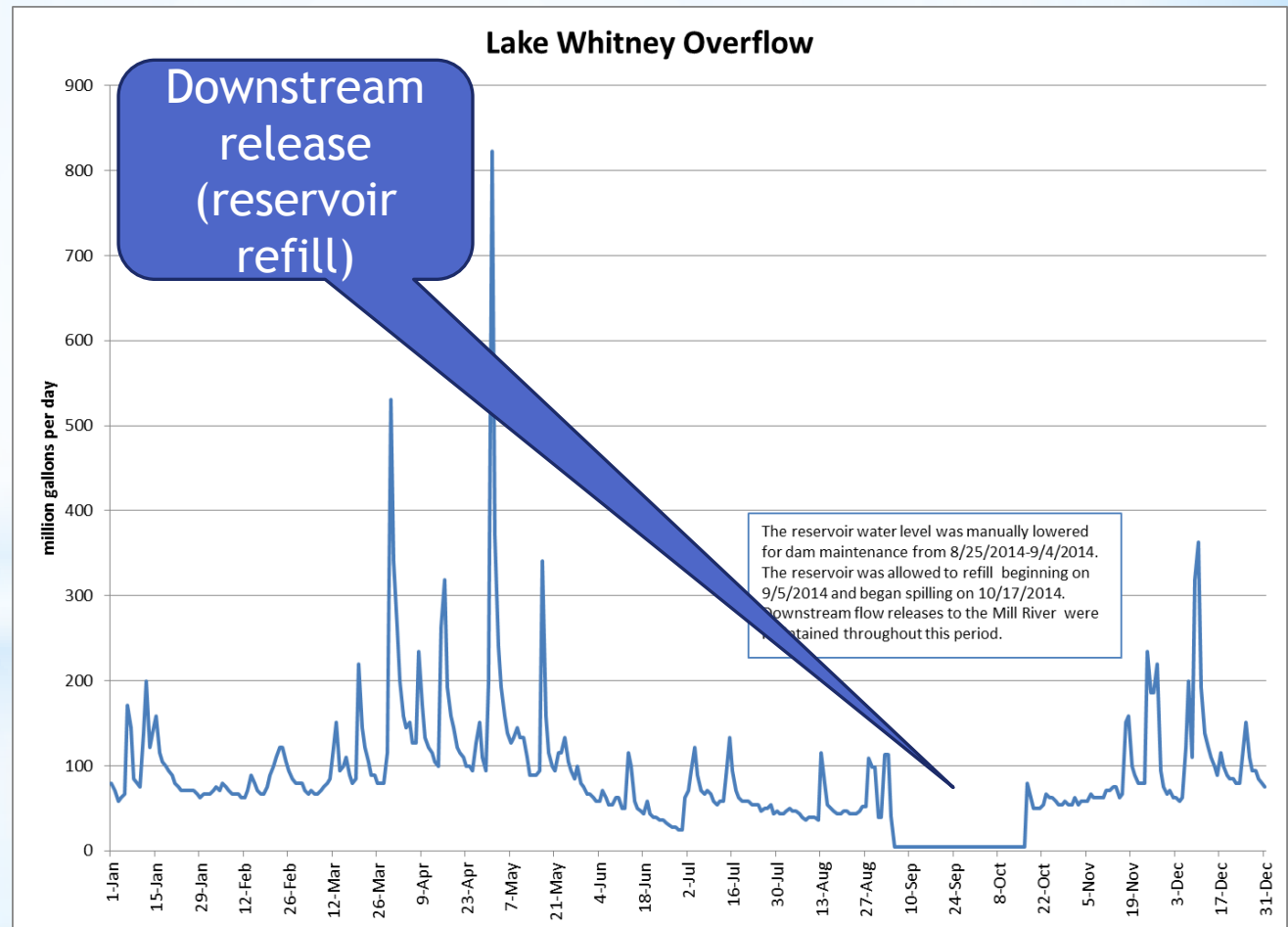
- Blow-off opened on Aug 25th;
- Maximum drawdown reached on Sep 4th (7 ft);
- Closed blow-off on Sep 4th, turned on artificial waterfall on Sep 5th;
- Downstream flow to Mill River maintained during refill (per Management Plan);
- Gradually refilled until 1.4 inch rain event on Oct 16th caused reservoir to spill.

2014 Lake Whitney Water Levels



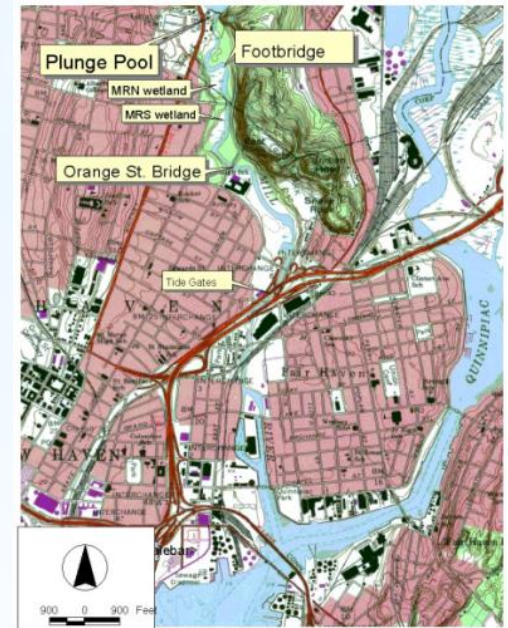
2014 Mill River Daily Flows (Whitney spillway)

- * Average: 85 MGD
- * Min: 4.2 MGD
(Sep 5 - Oct 16
downstream
release)
- * Max: 823 MGD
(May 1)



Mill River Dissolved Oxygen Summer 2014

- DO supports aquatic life
- Measure DO weekly at 3 locations when 14 day median flow during Jul-Sept <40 MGD or when operating downstream release.
- 10 dates, July, Sept, Oct
- Spillway 5.0-9.9 mg/L
- Plunge Pool 7.9-9.4 mg/L
- Footbridge 4.1-6.9 mg/L
- Downstream Release Period:
 - * Plunge Pool 8.1-9.4 mg/L;
 - * Footbridge 4.1-6.9 mg/L



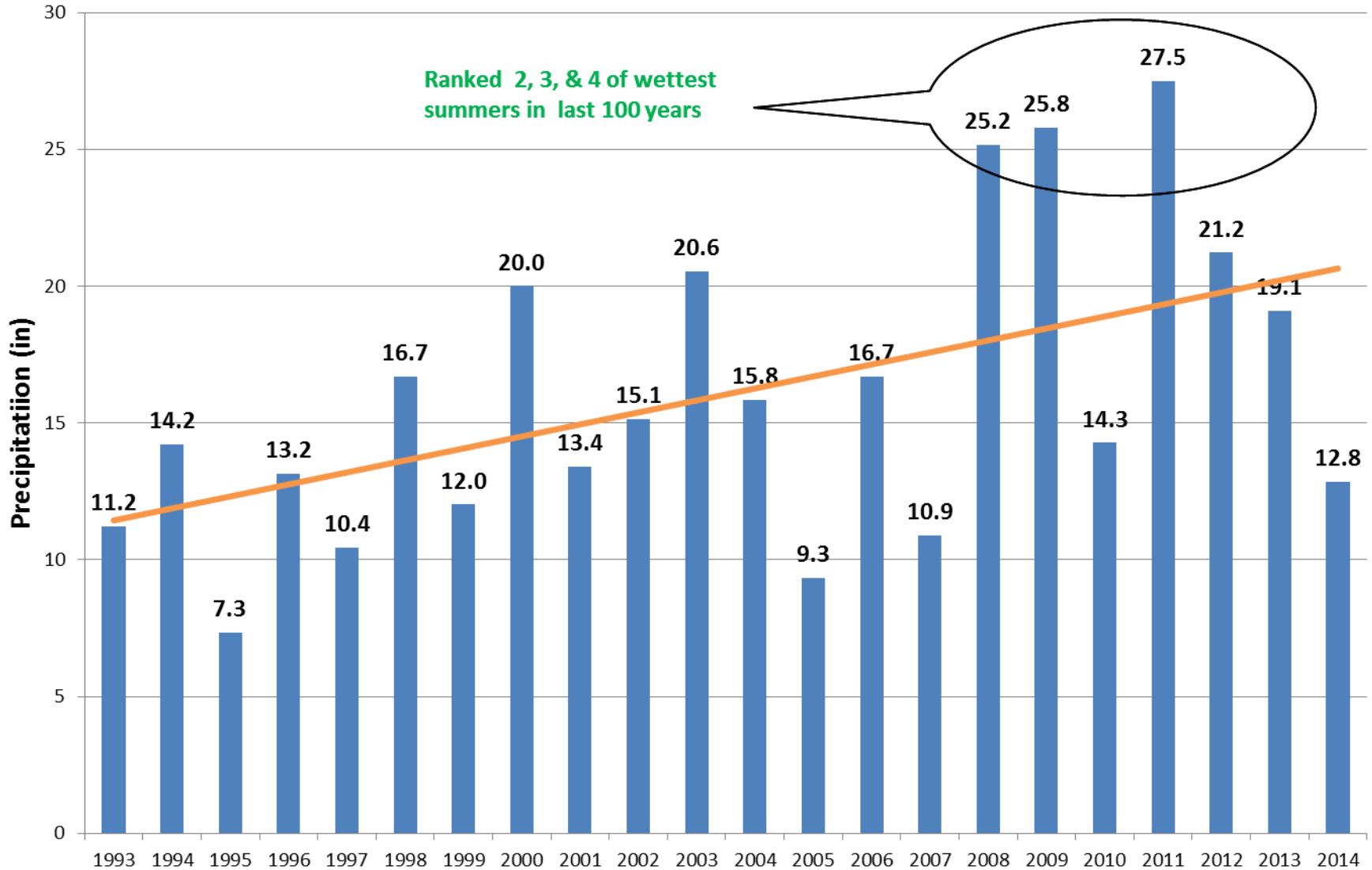
2014 Water Withdrawals

- Continued minimal operation mode begun in Oct 2008 (1-2 days per week; generally ~ 1 MGD)
- 2014 Max day withdrawal 3.8 mgd (January)

Jun-Sep Precipitation

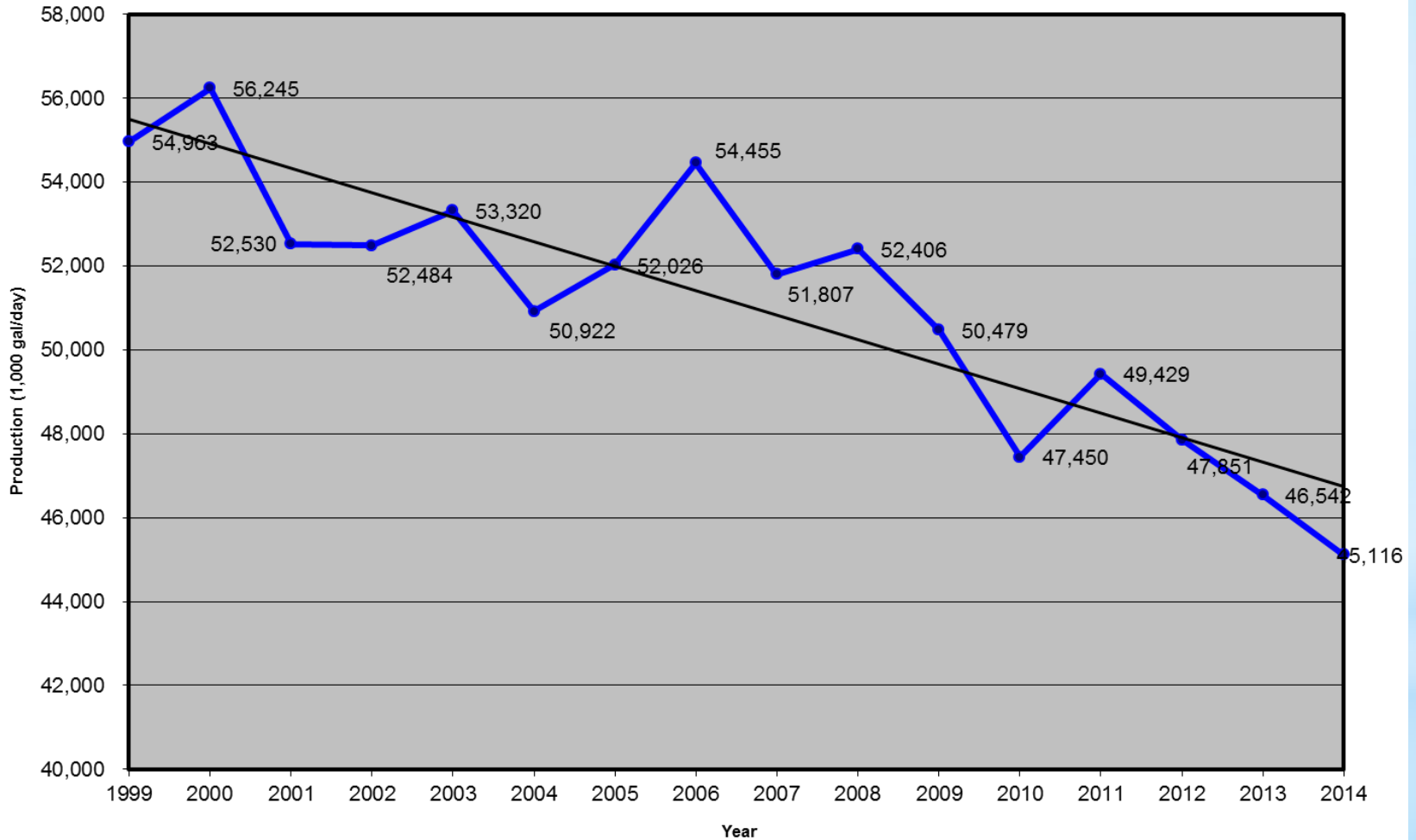
(Lake Whitney Rain Gauge)

Ranked 2, 3, & 4 of wettest summers in last 100 years



Annual RWA Water Demand

Average Daily Production Trend



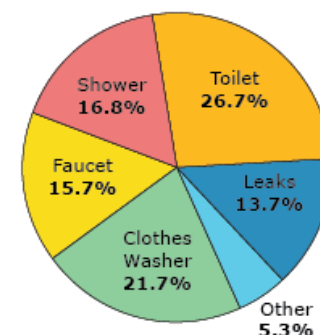
Plumbing Fixtures



Comparison of Plumbing Fixture Water-Flow Rates

Plumbing Fixture	Before 1992	Energy Policy Act 1992	EPA WaterSense
Toilet	4 to 7 gpf	1.6 gpf	1.28 gpf
Urinal	3.5 to 5 gpf	1.0 gpf	0.5 gpf
Faucet	5 to 7 gpm	2.5 gpm	1.5 gpm
Showerhead	4.5 to 8 gpm	2.5 gpm	2.0 gpm

How Much Water Do We Use?



Source: American Water Works Association Research Foundation, "Residential End Uses of Water," 1999

2014 Summary

- Average rainfall for the year (47”); moderately dry summer
- Manual drawdown of reservoir 10 days in late Aug/early Sept;
- Dry September delayed refilling of reservoir until mid-October;
- Continued reduced mode of WTP operation since Oct 2008
- Continued trend of declining water demand
- 2015:
 - * No change in Whitney operations anticipated at this time. Could change dependent upon precipitation, reservoir **system** storage, peak demands, system issues, etc.

More information & updates

* <http://www.rwater.com>

Lake Whitney < Regional Water Authority - Microsoft Internet Explorer provided by Regional Water Authority

http://www.rwater.com/environment/lake-whitney/

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Lake Whitney

Lake Whitney Water Treatment Plant

Protecting the quality of our water is only part of our job. We must also be sure an ample supply of water is available to meet consumer demand. In 1999, the Representative Policy Board approved our request to rebuild the Lake Whitney Water Treatment Plant and resume use of Lake Whitney as a source of drinking water.

The Policy Board's approval of this investment in the drinking water system of our region ensured we will have enough water to meet our region's needs for many decades into the future.

The Authority worked with neighbors living near the plant site to ensure that the new plant fit into the character of the area. During development of the Whitney proposal, we commissioned a year-long environmental evaluation of the Lake Whitney Water Treatment Plant conducted by a team of noted scientists. We are operating the water treatment plant in accordance with a Management Plan designed to protect the environmental quality of the Mill River and Lake Whitney.

- Environment
- Protecting our Water Sources
- Lake Whitney
 - Environmental Management
 - Lake Whitney Studies and Reports
 - Lake Whitney Data
 - July 25, 2000 Authority Resolution
- Conservation

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http://www.rwater.com/

Trusted sites 100%

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