

# Memorandum



CITY OF DALLAS

Date May 19, 2010

To Members of the Transportation and Environment Committee: Linda Koop, Chair; Sheffie Kadane, Vice-Chair; Jerry R. Allen; Tennell Atkins; Carolyn R. Davis; Vonciel Jones Hill; Delia Jasso; Pauline Medrano; Ron Natinsky

Subject **Proposed Five-year Water Conservation and Drought Plan Updates**

Attached for your reference is a copy of the briefing for the referenced Dallas Water Utilities plans. The briefing will be presented at your committee meeting on May 24, 2010.

Please let me know if you should need additional information.

A handwritten signature in black ink, appearing to read 'Ryan S. Evans'.

Ryan S. Evans.  
First Assistant City Manager

#### Attachment

c: The Honorable Mayor and Members of the City Council  
Mary K. Suhm, City Manager  
Thomas P. Perkins, Jr. City Attorney  
Deborah Watkins, City Secretary  
Craig Kinton, City Auditor  
Judge C. Victor Lander, Administrative Judge  
Ryan S. Evans, First Assistant City Manager  
Jill A. Jordan, P.E., Assistant City Manager  
A.C. Gonzalez, Assistant City Manager  
Forest Turner, Assistant City Manager  
Jeanne Chipperfield, Chief Financial Officer  
Edward Scott, Director, Controller's Office  
Frank Libro, Public Information Office  
Theresa O'Donnell, Director, Sustainable Development and Construction  
Helena Stevens-Thompson, Assistant to the City Manager – Council Office

# Proposed Five-Year Water Conservation and Drought Plan Updates

Transportation and Environment  
Committee  
May 24, 2010



# Briefing Purpose

- Provide update on Water Conservation and Drought Planning Efforts
  - Where we are
  - How we got here
  - Where we go from here
- Seek Council Committee support on adoption of
  - 2010 Water Conservation Five-Year Strategic Plan Update
  - 2010 Water Conservation Plan Update (State required)
  - 2010 Drought Contingency Plan Update (State required)

# Background

- Water Conservation plays an integral role in the City's long range water supply and environmental initiatives
- Gallons per capita per day in Dallas has dropped 21% since 2001 resulting in
  - An estimated water savings of over 98 billion gallons or 12.3 billion gallons annually
  - An energy savings of 180 million kilowatt hours of electricity
  - A reduction in greenhouse gas emissions by 119,538 tons

# Water Conservation Program Chronology

- 1980's
  - City of Dallas water conservation program consisted primarily of public education and outreach
- 2001
  - Conservation became a more aggressive water supply strategy with the passing of the ordinance prohibiting lawn and landscape water waste
- 2005
  - City Council adopted Five-Year Strategic Plan on Water Conservation and submits State required plan

# Dallas Water Conservation Plan – 2010 Update

Required by Texas Commission on Environmental Quality

# Strategic Plan Foundation for Water Conservation

- City of Dallas Five-Year Strategic Plan on Water Conservation
  - Serves as a road map to help us meet State mandates
  - Serves as a major component of the City's long range water supply strategies
- State Water Conservation Plan
  - Mandated by state legislation
    - House Bill 2660
    - House Bill 2663
    - House Bill 3338
  - Updated plans required every five years to include five and ten year targets

# Most Recent Dallas Water Conservation Plan

- 2005
  - The Five-year Strategic Plan served as a foundation for setting goals and targets for the 1999 update
  - The update was subsequently submitted to the TCEQ in April 2005
- 2009
  - City of Dallas submitted 2005 plan and letter to TCEQ advising that an amendment to State plan would be submitted after development of the strategic plan update (target June 2010)

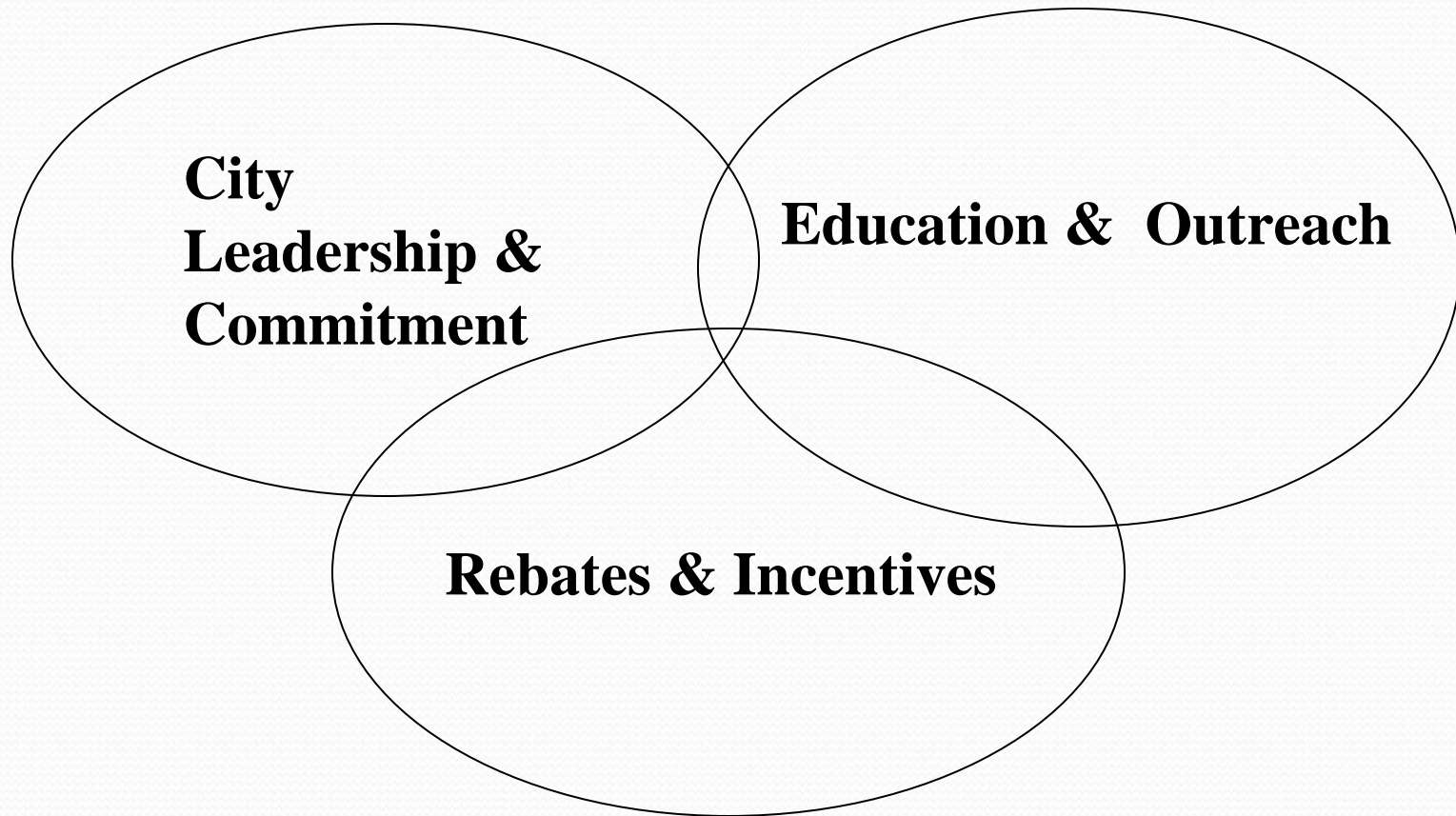
# Ongoing Reporting Requirements & Planned Actions

- 2010 five and ten year targets have been determined to be a reduction in gpcd of 8.3 and 9.1 respectively
- Strategies will continue to be evaluated to determine if adjustments are needed
- Management review on-going to determine successes and a new plan for going forward with appropriate targets and goals

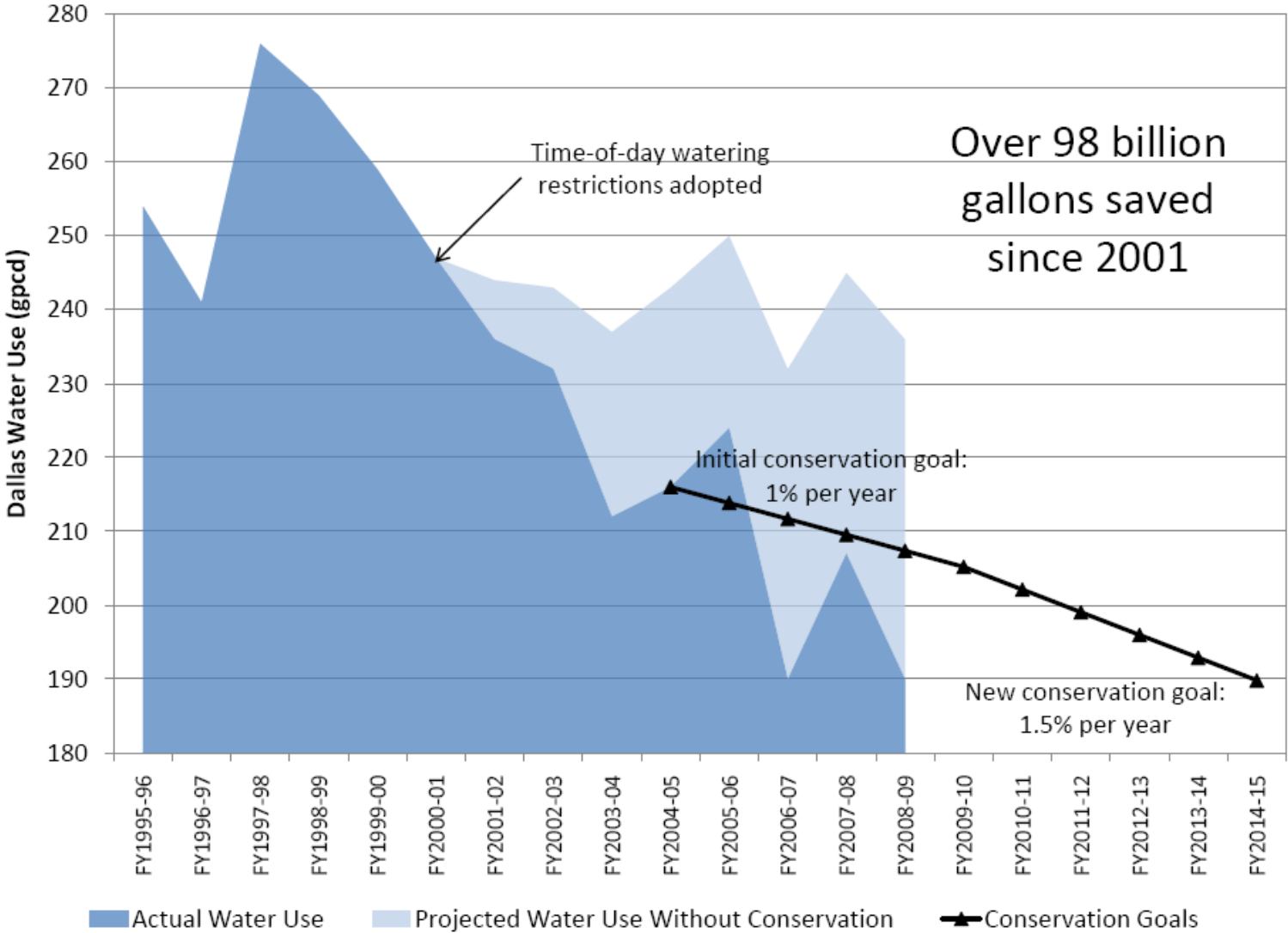
# 2005 Five Year Strategic Plan Goal

**Designed to achieve an average 1% per year reduction in gallons per capita per day over five years (2005-2010)**

# Three Major Elements of Plan



# Dallas GPCD Trends



# City Leadership & Commitment

## Five-year Accomplishments

- Replaced fixtures and performed landscape upgrades in City facilities
  - City Leadership Grant Program
- Council adopted Green Building Ordinance (2008)
- Enhanced leak detection (added staff and budget)
- Taken leadership role in encouraging regional approach to Water Conservation

# Education & Outreach Initiatives

## Five-year Accomplishments

- Expanded Public Awareness Campaign
  - Collaboration with Tarrant Regional Water District
- K-12 education programs
  - Over 41,000 kids served
  - Water Conservation Mascot “DEW”
- Free Irrigation System Inspections
  - 2 licensed irrigators on staff
- Cooling Tower Audits

# Rebate & Incentive Programs

## Five-year Accomplishments

- *New Throne for Your Home* Toilet Voucher Program
  - Over 20,000 toilets replaced since 2007
- Minor Plumbing Repair Program
  - Over 1,700 families served
- *Spray to Save* Restaurant Program
  - Over 3,100 restaurants have participated

# Keep the Momentum Going

- Evaluate potential new water conservation measures
- Recommend five-year water conservation goal for FY 2010-11 through FY 2014-15 of 1.5% reduction per year
- Invest more resources into water conservation programs that will impact all users
- Provide basis for update to State required plan

# Proposed New Measures

14 Recommendations

## Recommended New Measures by Sector

Measure	SF	MF	ICI	Utility
Add'l savings from existing water loss programs				
TX HET toilet law				
Measures to further reduce real and apparent water loss				
Water-wise landscape design requirements				
ICI commercial equipment rule				
Voluntary twice-weekly irrigation schedule				
ICI customer water audits				
ICI hospitality program				
ICI training programs				
ICI business partnership program				
Enhanced toilet incentive				
ICI financial incentives				
Irrigation system incentive				
Residential clothes washer incentive				

**TOTAL**

**6 6 9 2**

SF = Single-family residential

MF = Multi-family residential

ICI = Industrial, commercial, and institutional

**NOTE:** Target water use reduction is an average 1.5 percent per year

# Projected New Budgets by Measure\*

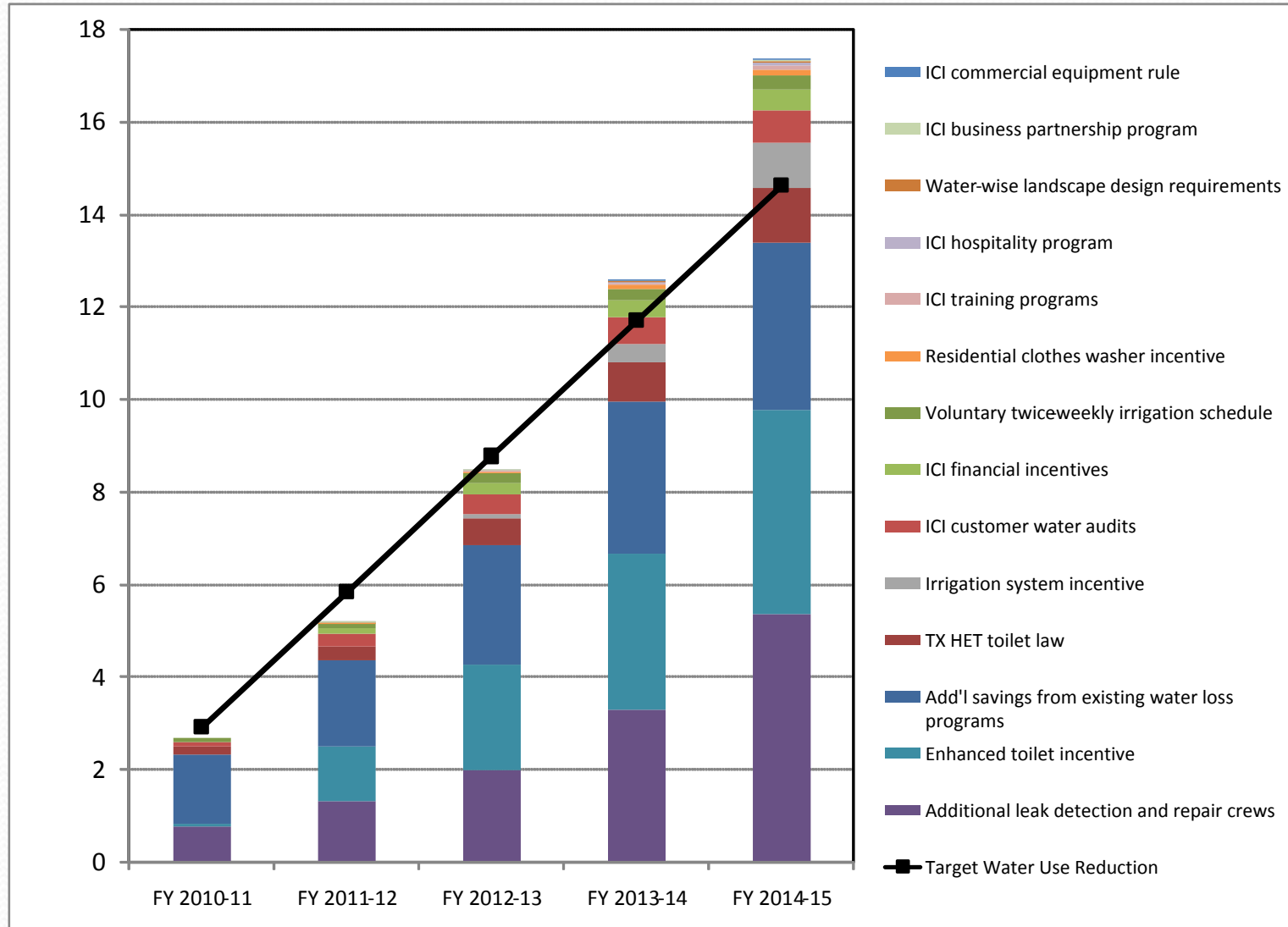
Measure	FY 2010-11	FY 2011-12	FY 2012-13	FY 2013-14	FY 2014-15
Additional savings from existing water loss programs	\$0	\$0	\$0	\$0	\$0
TX HET toilet law	\$0	\$0	\$0	\$0	\$0
Additional leak detection and repair crews	\$1,545,000	\$1,572,250	\$2,252,000	\$2,321,750	\$2,334,500
Water-wise landscape design requirements	\$0	\$0	\$0	\$0	\$0
ICI commercial equipment rule	\$0	\$0	\$0	\$0	\$0
Voluntary twice-weekly irrigation schedule	\$0	\$0	\$0	\$0	\$0
ICI customer water audits	\$0	\$27,105	\$27,758	\$28,496	\$29,307
ICI hospitality program	\$50,000	\$102,166	\$104,626	\$107,409	\$110,466
ICI training programs	\$25,510	\$26,063	\$26,690	\$27,400	\$28,180
ICI business partnership program	\$0	\$0	\$0	\$0	\$0
Enhanced toilet incentive	\$0	\$778,738	\$797,488	\$818,702	\$842,008
ICI financial incentives	\$500,000	\$2,909,121	\$2,948,122	\$2,973,344	\$3,001,053
Irrigation system incentive	\$0	\$0	\$93,917	\$694,189	\$1,586,557
Residential clothes washer incentive	\$0	\$74,933	\$149,995	\$210,076	\$475,323

**TOTAL**

**\$2,120,510 \$5,490,375 \$6,400,596 \$7,181,366 \$8,407,394**

\* Existing budgets for other conservation programs must also be maintained to sustain the water savings that have been achieved.




# Projected New Water Savings



# Proposed Implementation Schedule

Program	Savings Rank	FY 2010-11	FY 2011-12	FY 2012-13	FY 2013-14	FY 2014-15
Add'l Savings from Existing Water Loss Programs	3	3				
TX HET Toilet Law	4	4				
Additional leak detection and repair crews	1	1				
ICI commercial equipment rule	13			13		
Water-wise landscape design requirements	12			12		
Voluntary twice-weekly irrigation schedule	8	8				
ICI customer water audits	6	6				
ICI hospitality program	11	11				
ICI training programs	10		10			
ICI business partnership program	14	14				
Enhanced toilet incentive	2	2				
ICI financial incentives	7	7				
Irrigation system incentive	5		5			
Residential clothes washer incentive	9	9				

Savings Rank: lower numbers mean higher water savings

-  Implementation
-  Planning/development
-  Continue existing program/plan further implementation

# Additional Savings from Existing Measures

- Increased level of funding for leak detection and repair beginning in FY 08-09 expected to yield additional water savings during next five years
- New Texas High Efficiency Toilet (HET) law phasing in 1.28 gallons per flush (gpf) requirement for all new toilets by 2014

## **New Measures Evaluated & Recommended** *Dallas Water Utilities System Management*

- Further reduce water loss
  - Add more leak detection/repair crews and equipment to reduce leak awareness times, leak location times, utility location times, and leak run times
  - Continue current level of water main replacement program
  - Evaluate current meter replacement program criteria based on age and “mileage”

# New Measures Evaluated & Recommended

## *All Customers*

- Water-wise landscape design requirements
  - Revise city landscape ordinance to limit turf areas in all new landscapes and require low-water-use landscaping in other areas. Other requirements could include minimum soil depths, soil amendments, and turf grass dormancy capability
  - Program would include review of landscaping plans, education of builders and customers regarding low-water-use plants, and assessment of compliance

## **New Measures Evaluated & Recommended** ***Industrial, Commercial, Institutional Customers***

- Industrial Commercial and Institutional (ICI) commercial equipment ordinance
  - Require minimum water efficiency standards for commercial equipment in new and newly-occupied ICI establishments. Work with Building Inspection to verify compliance
    - Commercial Food Service
    - Medical/Dental Systems
    - Commercial Laundries
    - Cooling Towers

# New Measures Evaluated & Recommended

## *All Customers*

- Voluntary twice-weekly irrigation schedule
  - Through the Public Awareness Campaign, encourage all customers to limit irrigation to a maximum of two days per week from April 1 through October 31



## **New Measures Evaluated & Recommended** ***Industrial, Commercial, Institutional Customers***

- Expand ICI customer water audits
  - Water conservation staff/contractors would conduct free water audits for ICI customers. Target high-water use customers. Report recommended water efficiency measures
- ICI training program
  - Water conservation staff would develop and conduct training programs targeting:
    - Facility managers for premise types that use the most water. Topics could include industrial cooling and process, food processing, and leakage control.
    - Licensed irrigators, with a focus on EPA WaterSense programs

## **New Measures Evaluated & Recommended** *Industrial, Commercial, Institutional Customers*

- **ICI Hospitality Program**
  - Water conservation staff would engage hotels, motels, and restaurants in the city's water conservation program
  - Train hospitality staff in reducing water use  
Measures include water on request, reuse of towels and linens, etc.
  - Provide printed materials to encourage guest participation: table cards, door hangers, pillow cards

## **New Measures Evaluated & Recommended** *Industrial, Commercial, Institutional Customers*

- ICI Business Partnership Task Force
  - Water conservation staff would engage business leaders who represent top water-using industries in quarterly meetings to:
    - Provide information on DWU ICI water conservation programs.
    - Gather feedback. What's working? What's not working?
    - Identify potential new ICI programs and water-saving opportunities

# New Measures Evaluated & Recommended

## *Residential Customers*

- Expand “*New Throne*” program
  - Each year, replace up to 15,000 toilets that use 3.5 gallons per flush or more with High Efficiency Toilets (HETs)
  - Currently replacing 8,000 toilets per year
  - 407,836 eligible for replacement



**I Have A New Throne For My Home!**

Toilets use the most water indoors, consuming up to 7,200 gallons of water per person each year. New technologies have greatly improved the performance of low-flow toilets. Installing one in your home can save 4,320 gallons of water per person each year.

Give your bathroom the royal treatment. If you are a Dallas Water Utilities customer you may qualify for a \$90 voucher through our Throne for Your Home Toilet Voucher Program, (up to two vouchers per household) towards the purchase of a low-flow or ultra low-flow toilet. Visit [www.SaveDallasWater.com](http://www.SaveDallasWater.com) to print out an application for your voucher and mail it in today!

**IT'S ALL IN A DROP!**  
WWW.SAVEDALLASWATER.COM

# New Measures Evaluated & Recommended *Industrial, Commercial, Institutional Customers*

- ICI financial incentives
  - Site-specific rebate program to promote water-efficient equipment installation and upgrades
  - Examples include:
    - Cooling processes
    - Plumbing fixtures
    - Laundry processing
    - Medical/dental
    - Landscape irrigation



## **New Measures Evaluated & Recommended** ***Industrial, Commercial, Institutional Customers***

- ICI financial incentives (continued)
  - Candidates could include:
    - Office buildings
    - Hotels/motels
    - Restaurants
    - Grocery stores
    - Laundromats
    - Schools
    - Manufacturing/industrial
    - Food and kindred processing
    - Parks and golf courses

# New Measures Evaluated & Recommended

## *All Customers*

- Irrigation system upgrade/retrofit incentive
  - Offer a rebate to all customers who retrofit their existing irrigation systems with water-conserving equipment
  - Examples could include drip irrigation equipment, spray heads with greater distribution uniformity, smart irrigation controllers, and other devices
  - Staff would perform irrigation system inspections, review and process rebate applications, and verify equipment installation



## New Measures Evaluated & Recommended *Residential Customers*

- Residential clothes washer rebate program
  - Offer a rebate to residential customers for replacing older, inefficient clothes washers with water-efficient models



# Strategy for Plan Implementation

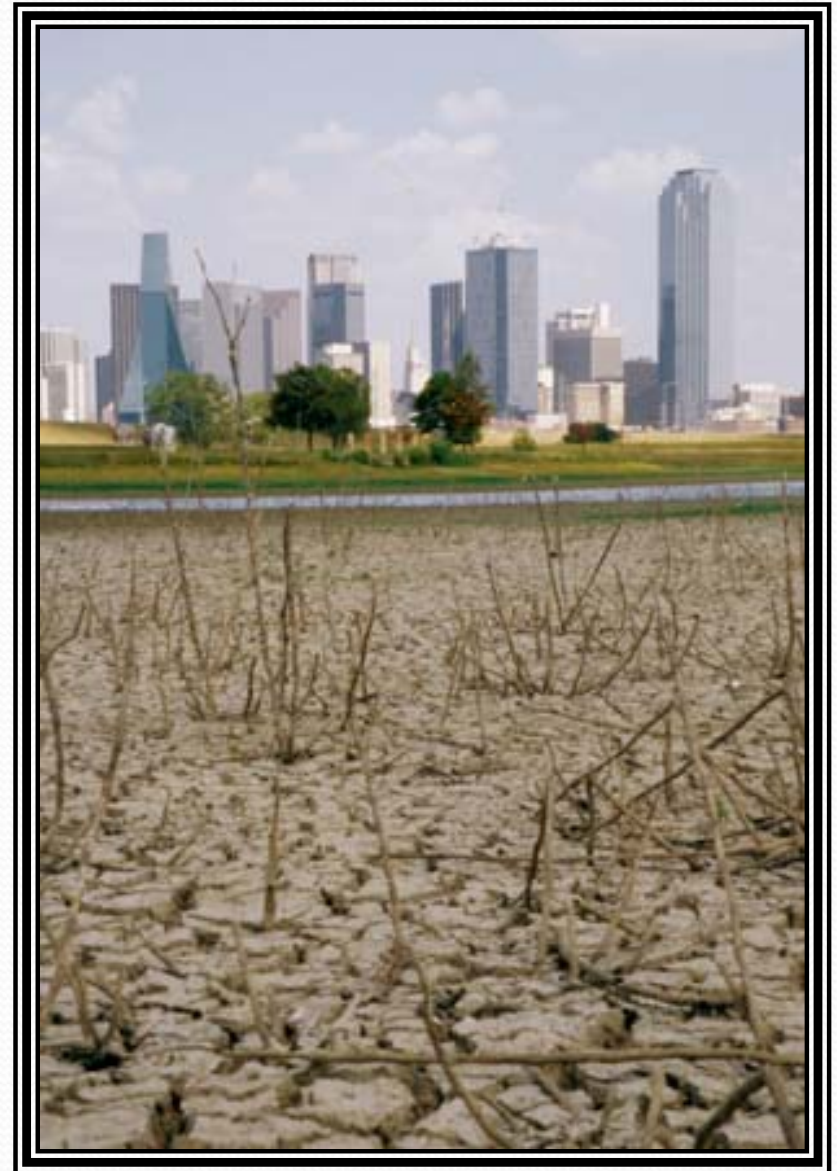
- Implement measures with higher water savings early
- Implement measures with high community interest early
- Limit number of programs to be planned/implemented each year
- Align strategies that have similarities/synergies
- Implement training programs in advance of ordinance amendments, where applicable

# Drought (Emergency) Contingency Plan

Drought Contingency Plan  
Required by Texas Commission on Environmental Quality

# Outline

- Monitoring
- Water Supply  
Operations Model
- Response Measures
- Triggers
- Drought Plan  
Comparisons



# Drought

1911



White Rock Lake

1950s



# Emergency Management



Tributary to East Caddo Creek  
Lake Tawakoni MTBE Spill  
2000

# Monitoring the Drought

## Perform Drought Simulations

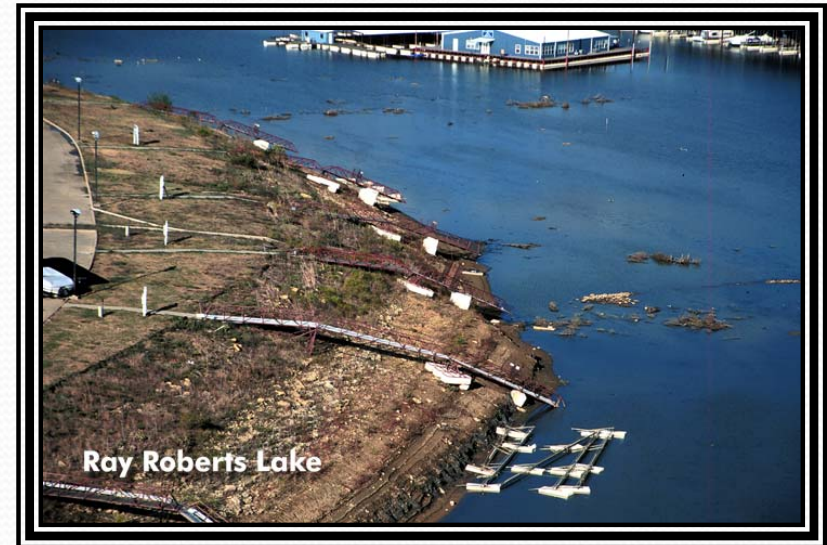
- prior to drought
  - during drought
- 
- Water Supply and Drought Monitoring
    - Lake Levels
    - Reservoir Capacity
    - Long Range Weather forecasts
    - Palmer Drought Index
  
  - Initiate drought plan stages as appropriate



Lake Tawakoni 2006

# Water Supply Operations Model Development

- Need for model
  - Firm yield added to system (Lake Fork connection)
  - Multiple water supply sources connected
  - Diverse water supply
  - Integrated Pipeline Project with Tarrant Regional Water District
- Developed to
  - Evaluate reliability of water sources
  - Evaluate operating issues of multiple sources
  - Optimize water supply system
- Model Features
  - Extended the period of record to 100 years (1907 to 2007)
    - Includes a second significant drought (1908-1913)
    - The 1908 drought is the new drought of record for some area reservoirs
  - Multiple simulation modes
  - Energy cost prediction
  - Incorporates Return Flows
- Model Calibration
  - 2001-2007 lake levels
  - 2005-2007 energy usage

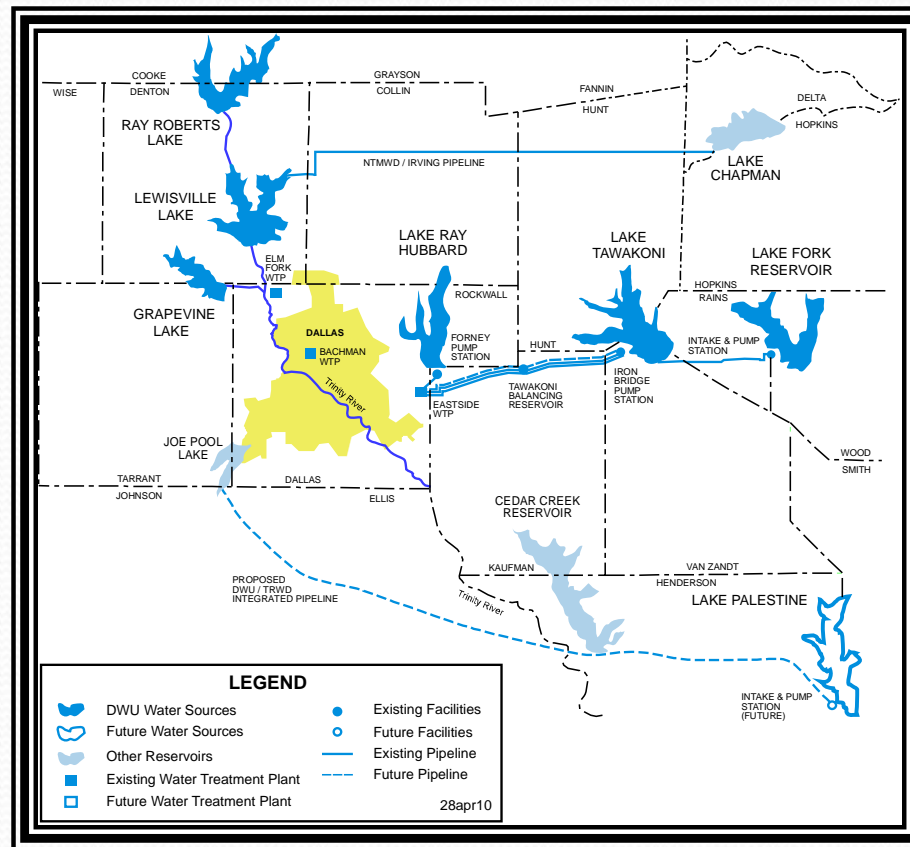


Ray Roberts Lake 2000

# Dallas Water Supplies

## Western System

- Lake Lewisville
- Lake Ray Roberts
- Lake Grapevine
- Elm Fork Run-of-the-River



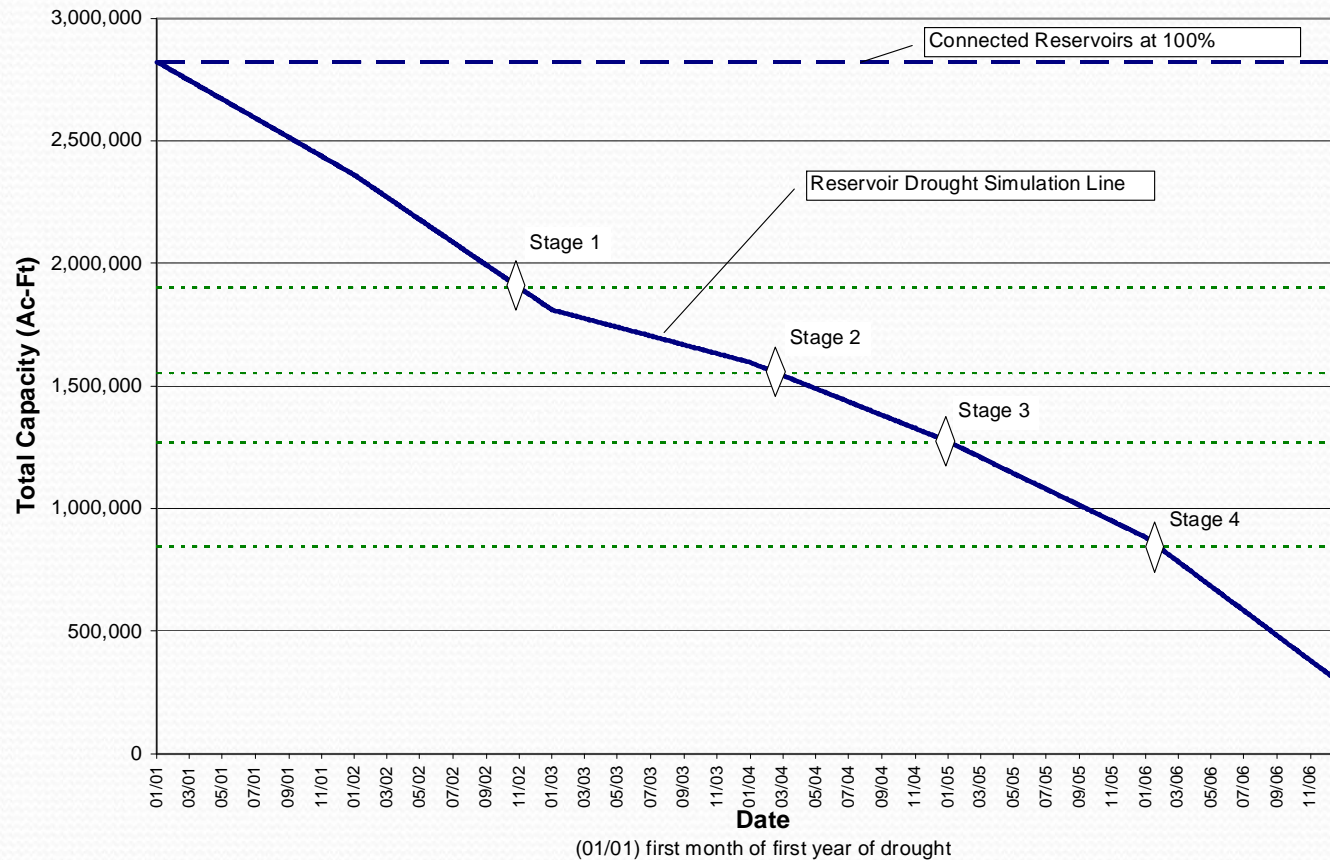
## Eastern System

- Lake Ray Hubbard
- Lake Tawakoni
- Lake Fork

# Reservoir Drought Simulation

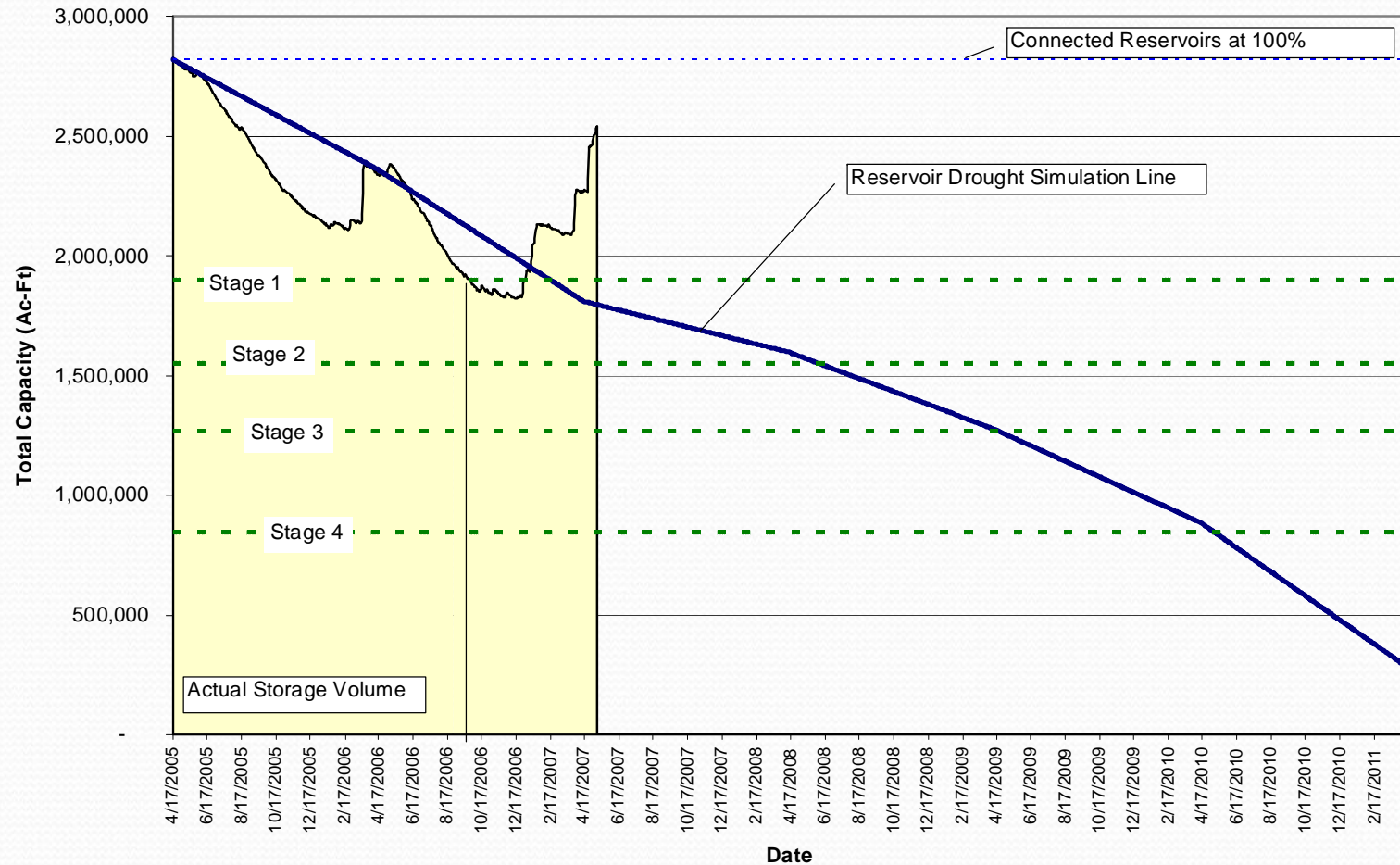
## Dallas Water Supply System Connected Reservoirs

Lewisville, Ray Roberts, Grapevine, Ray Hubbard, and Tawakoni



# 2006 Drought

Dallas Water Supply System Connected Reservoirs  
Lewisville, Ray Roberts, Grapevine, Ray Hubbard, and Tawakoni



# Drought Contingency Plan Triggers

- Triggers for
  - Drought
  - Capacity constraints
  - Natural or man-made contamination
- No proposed change to triggers
- Some response measures proposed to change
- Targets for demand reduction also changed

# 2010 Emergency Water Supply Management Plan Triggers

## **Stage 1**

- 35% Depleted
- Water demand has reached or exceeded 85% of delivery capacity for 4 consecutive days
- Natural or Man-made contamination of a water supply

## **Stage 2**

- 45% Depleted
- Water demand has reached or exceeded 90% of delivery capacity for 3 consecutive days
- Natural or Man-made contamination of a water supply

## **Stage 3**

- 55% Depleted
- Water demand has reached or exceeded 95% of delivery capacity for 2 consecutive days
- Natural or Man-made contamination of a water supply

## **Stage 4**

- 70% Depleted
- Water demand has reached or exceeded 98% of delivery capacity for 1 consecutive days
- Major water main break or pump system failure
- Natural or Man-made contamination of a water supply

# Drought Contingency Plan Summary of Changes

Stage	2005 Plan	2010 Plan (Proposed)
1	<ul style="list-style-type: none"> <li>• Voluntary <u>2-day-a-week</u> irrigation schedule (moved to Water Conservation Plan)</li> <li>• Target 1% reduction in total GPCD</li> </ul>	<ul style="list-style-type: none"> <li>• Mandatory <u>2-day-a-week</u> irrigation schedule</li> <li>• Target 5% reduction in total GPCD</li> </ul>
2	<ul style="list-style-type: none"> <li>• Mandatory <u>2-day-a-week</u> irrigation schedule</li> <li>• Target 5% reduction in total GPCD</li> </ul>	<ul style="list-style-type: none"> <li>• Mandatory <u>1-day-a-week</u> irrigation schedule</li> <li>• Target 15% reduction in total GPCD</li> </ul>
3	<ul style="list-style-type: none"> <li>• Hand-held hoses, hand-held buckets, or drip irrigation only</li> <li>• Target 15% reduction in total GPCD</li> </ul>	<ul style="list-style-type: none"> <li>• Hand-held hoses, hand-held buckets, or drip irrigation only</li> <li>• Target 20% reduction in total GPCD</li> </ul>
4	<ul style="list-style-type: none"> <li>• Irrigation of landscape areas is prohibited</li> <li>• Target 25% reduction in total GPCD</li> </ul>	<ul style="list-style-type: none"> <li>• Irrigation of landscape areas is prohibited*</li> <li>• Target 25% reduction in total GPCD</li> </ul>

\* Foundation watering with soaker hoses still allowed.

*“Savings early in the drought to ensure water availability at the end of the drought”*

# Stage One Response Measures Comparison

2005 Plan	2010 Plan (Proposed)
Encourage only initial filling of ornamental fountains	<b>Same as 2005 Plan</b>
Encourage reduction in draining and refilling of swimming pools	<b>Same as 2005 Plan</b>
Encourage reduction in frequency of recreational uses of faucets hoses and hydrants which use water in such a manner as to allow run-off	<b>Same as 2005 Plan</b>
Encourage reduction in frequency of washing or rinsing of vehicles	<b>Same as 2005 Plan</b>
Voluntary 2 day a week landscape irrigation	<b>Mandatory 2 day a week landscape irrigation</b>
	<b>Foundations may be watered on any day of the week during allowed watering hours</b>

# Stage Two Response Measures Comparison

2005 Plan	2010 Plan (Proposed)
Prohibit hosing off paved areas, buildings, windows or other surfaces	<b>Same as 2005 Plan</b>
Restrict operation of ornamental fountains and ponds to initial filling and to support aquatic life	<b>Same as 2005 Plan</b>
Encourage further reduction in draining and refilling of swimming pools	<b>Same as 2005 Plan</b>
Prohibit recreation water use of faucets hoses and hydrants which use water in such a manner as to allow run-off	<b>Same as 2005 Plan</b>
Restrict washing of vehicles to hand held bucket (does not affect commercial car washes)	<b>Same as 2005 Plan</b>
Mandatory 2 day a week landscape irrigation	<b>Mandatory 1 day a week landscape irrigation</b>
	<b>Foundations may be watered on any day of the week during allowed watering hours only with soaker or hand held hoses</b>

# Stage Three Response Measures Comparison

2005 Plan	2010 Plan (Proposed)
Target 15% reduction in total GPCD	Target 20% reduction in total GPCD
No application for new, additional, expanded, or increased-in-size water service connections, meters, service lines, pipeline extensions, mains, or water service facilities shall be approved	<b>Same as 2005 Plan</b>
10% rate increase for high water demand users (greater than 10,000 gallons per month)	<b>Same as 2005 Plan</b>
Prohibit the filling, refilling or adding of water to swimming pools, wading pools and Jacuzzi pools, and prohibit the permitting of new pools	<b>Same as 2005 Plan</b>
Prohibit washing of vehicles (does not affect commercial car washes only between 6:00 a.m. and 10:00 a.m. and between 6:00 p.m. and 10:00 p.m. )	<b>Same as 2005 Plan</b>
Mandatory 1 day a week landscape irrigation between 6:00 a.m. and 10:00 a.m. and between 6:00 p.m. and 10:00 p.m.	Mandatory 1 day a week landscape irrigation with hand held hoses and hand held buckets only
Foundations may be watered for a 2 -hour period (off-peak) with soaker hose or hand held hose.	<b>Same as 2005 Plan</b>

# Stage Four Response Measures Comparison

2005 Plan	2010 Plan (Proposed)
Prohibit washing of vehicles	<b>Same as 2005 Plan</b>
Prohibit landscape irrigation	<b>Same as 2005 Plan</b>
Foundations may be watered for a 2 -hour period (off-peak) with soaker hose or hand held hose.	<b>Same as 2005 Plan</b>



Lake Tawakoni 2006

# Wholesale Customer Measures

- Stages 1 and 2 - Requires water demand reductions in accordance with contract obligations for wholesale water customers
- Stage 3 – No new wholesale contracts shall be entertained unless there is an emergency situation.
- Stage 4 – Water allocation on a pro rata basis



Lake Tawakoni 2006

# Summary

- Conservation Plan has produced results
  - Average 2.8% reduction in gallons per capita annually
    - Goal was an average 1% reduction in GPCD per year over five years
- System-wide efforts worked in tandem to save over 98 billion gallons since 2001
- Expect to save even more in next 5 years
  - New water savings goal: average 1.5 percent per year reduction in GPCD
  - 14 cost-effective water conservation measures
- Conservation and Drought Plans continue to be reviewed and revised in accordance with state mandates and internal goals and objectives

# Next Steps

- Seeking committee support to adopt June 9, 2010 agenda item for
  - Water Conservation Five-year Strategic Plan Update
  - Water Conservation Plan (state mandated)
  - Drought Contingency Plan Update (state mandated)

# APPENDIX

# Water Conservation Program Milestones

2005-2010

# City Leadership Grant Program

- Kiest Park
  - Upgraded landscape to include water wise plants
  - Redesigned irrigation system to operate more efficiently
  - **Estimated water savings 431,737 gallons annually**
- Samuel Grand Recreation Center
  - Conservation staff Installed new earth-kind rose garden
  - Collaborative effort with Texas AgriLife (formerly Texas A&M Cooperative Extension Service)



# Irrigation System Inspections



- Licensed Irrigator on Staff
  - Serves residential and commercial customers
  - Offers recommendations on how to make improvements for maximum water efficiency
  - Works with city departments on proper maintenance and operation of city irrigation systems
  - **Efforts have saved over 31 million gallons annually for city facilities alone**

# Public Awareness Campaign



- Collaborative Effort with Tarrant Regional Water District
- Over \$1 million leveraged in media buys

# Environmental Education Initiative

- Collaborative effort with Department of Sanitation

- Program includes grades K-12
- Over 41,000 students have participated
- Over 900 teachers participated in staff development program

**R**ICHARDSON ISD

Dallas  
Independent  
School  
District



# Water Conservation Mascot “DEW”

- Received 2007 Water Mark Award from Texas American Water Works Association & Water Environment Federation for video “DEW Helps Kids Save Water”
  - Spot aired on Nickelodeon and the Cartoon Network in Summer 2007



# EPA Water Sense Award Fix-a-Leak Week

- Dallas chosen as winner of 2010 EPA Water Sense Public Outreach Campaign
  - Over 20 major water providers participated across the country



# Minor Plumbing Repair Program



- Over 1,700 families helped from 2005-2010
- 5,400 fixtures replaced
- **Estimated water savings 16.5 million gallons annually**

# New Throne for Your Home Program

- Toilet voucher program launched in June 2007
- 20,419 toilets replaced to date
  - 8,240 single-family
  - 12,179 multi family
- **Estimated water savings 93.2 million gallons annually**

# Industrial/Commercial Institutional Outreach Efforts



- Cooling Tower Audits
  - Program launched in March 2007
  - 60 audits performed to date
  - Follow-ups performed to determine actions taken
  - **Projected water savings 242 million gallons annually if recommendations implemented**

# Spray to Save Restaurant Program

- Pre-rinse spray nozzle program launched in November 2007
  - Over 3,100 restaurants participated to date
    - Over 8,500 fixtures replaced
  - **Estimated water savings 475 million gallons annually**

# Conservation Program Summary

FY2004 - 05 to Mar 2010

<b>Programs</b>	<b>Fixtures Replaced</b>	<b>Number of Audits</b>	<b>Water Savings (MG/Y)</b>
Toilet Voucher and Rebate	20,419		93.2
Minor Plumbing Repair	5,452		16.5
Spray-to-Save	8,583		475.0
Rain Freeze Sensor Rebate	9,400		N/A
Irrigation Audits		846	105.7
Cooling Tower Audits		60	242.4
<b>Total</b>	<b>43,854</b>	<b>906</b>	<b>932.8</b>

# Wholesale Customer Cities Efforts

- Take measures similar to Dallas' conservation ordinance
- Partner with Dallas on Annual Water Wise Garden Tours
  - City of Addison
  - City of Duncanville
- Encourage the use of low-flow devices
  - City of Carrollton issues free rain and freeze sensors
- Provide brochures, tips, bill inserts, websites
  - City of Irving offers interactive website