

This presentation premiered at WaterSmart Innovations

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The Effectiveness of Required Commercial Irrigation Inspections

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Austin Water

- Surface water utility
- 3 treatment plants with a combined treatment capacity of 325 mgd
- ~ 1,000,000 customers
- ~ 225,000 service connections
- ~17,000 commercial service connections

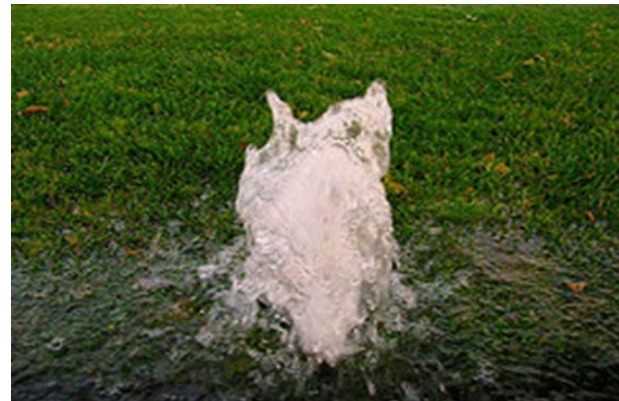


History of the requirement

- Commercial properties billed peak vs. non peak while residential properties have a highly tiered rate structure
- Relative high number of water waste reports for commercial properties
- Recommendation by 2007 Water Conservation Task Force
- Code and rule language a result of a public outreach process
- One of the final items to be implemented



The requirement

- Every two years – odd addresses in odd years, even addresses in even years
- Due dates assigned by zip codes – six separate zones
- Commercial, multifamily, and industrial water accounts on **parcels** larger than an acre
- Station by station inspection for City of Austin defined water waste
- Fines administered to the account holder for non compliance



The process

- List creation
- Notifications - 2 sent prior to due date to billing address of water account holder
- Response form processing
 - Does Not Apply
 - Compliance Plan
 - Irrigation Assessment
- Notice of violation and administrative enforcement
- Fines
 - \$200 initial late fee
 - \$25 a day accrual

Commercial Irrigation Assessment Zones

Zone 1

Facilities located in the following zip codes will be required to submit all forms by **January 31**

*** Properties with **ODD** addresses are due in **ODD** years
*** Properties with **EVEN** addresses are due in **EVEN** years

78653	78702	78728	78731
78747	78757	78758	78737

Zone 2

Facilities located in the following zip codes will be required to submit all forms by **March 31**

*** Properties with **ODD** addresses are due in **ODD** years
*** Properties with **EVEN** addresses are due in **EVEN** years

78617	78681	78722	78723
78729	78739	78744	78749

Zone 3

Facilities located in the following zip codes will be required to submit all forms by **May 31**

*** Properties with **ODD** addresses are due in **ODD** years
*** Properties with **EVEN** addresses are due in **EVEN** years

78613	78703	78710	78719
78725	78741	78752	78753

Zone 4

Facilities located in the following zip codes will be required to submit all forms by **July 31**

*** Properties with **ODD** addresses are due in **ODD** years
*** Properties with **EVEN** addresses are due in **EVEN** years

78660	78712	78705	78727
78730	78746	78748	78751

Zone 5

Facilities located in the following zip codes will be required to submit all forms by **September 30**

*** Properties with **ODD** addresses are due in **ODD** years
*** Properties with **EVEN** addresses are due in **EVEN** years

78724	78726	78732	78735
78736	78742	78745	78759

Zone 6

Facilities located in the following zip codes will be required to submit all forms by **November 30**

*** Properties with **ODD** addresses are due in **ODD** years
*** Properties with **EVEN** addresses are due in **EVEN** years

78652	78701	78704	78717
78721	78750	78754	78756

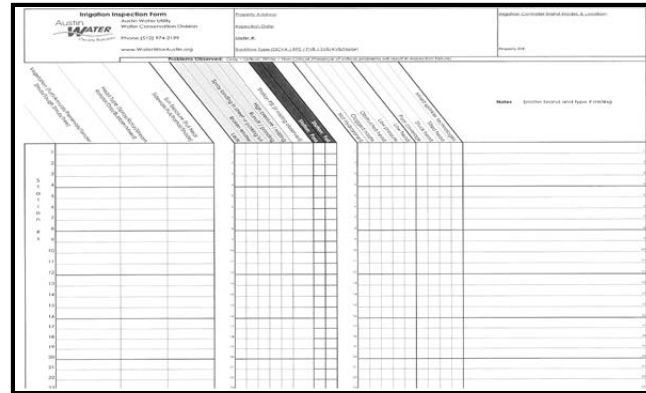
Please submit all Inspection Forms and/or Compliance Plans to:

AWU Water Conservation,
P.O. Box 1088
Austin, TX 78767
or FAX to (512) 974-3504
or Email to FacEvalSubmit@austintexas.gov

Please visit www.waterwiseaustin.org
or give us a call at (512) 974-2199 for additional information.

The inspection

- Austin Water authorized inspectors
 - Texas Commission on Environmental Quality Licensed Irrigation Inspector
 - Austin Water class and exam
- Station by station inspection for City of Austin defined water waste
 - ✓ Misting due to high pressure
 - ✓ Broken components
 - ✓ Runoff
 - ✓ Overspray
 - ✓ Leaks



The form is titled 'Irrigation Inspection Report' and includes fields for 'Inspector Name', 'Station Address', and 'Station Name'. It features a large table with columns for 'Station ID', 'Station Name', 'Inspector', 'Date', and 'Observations'. The 'Observations' column contains a grid for recording specific issues like misting, broken components, runoff, overspray, and leaks.

- Failing systems/stations can turn in a compliance plan
- Appropriate documents must be submitted prior to the due date

Overview of Austin's program

- Approximately 5,850 properties contacted over two years
- ODD addressed property responses (**~1/2 of total number**)
 - 1,331 passing inspections
 - 1,135 Does Not Apply forms – taken off of future mailings
 - Remainder include abandoned systems and systems with compliance plans, but no inspection
 - Approximately 400 notice of violations mailed
 - 72 administrative reviews
 - \$635,900 in fines assessed in calendar 2015 (does not include reversals)



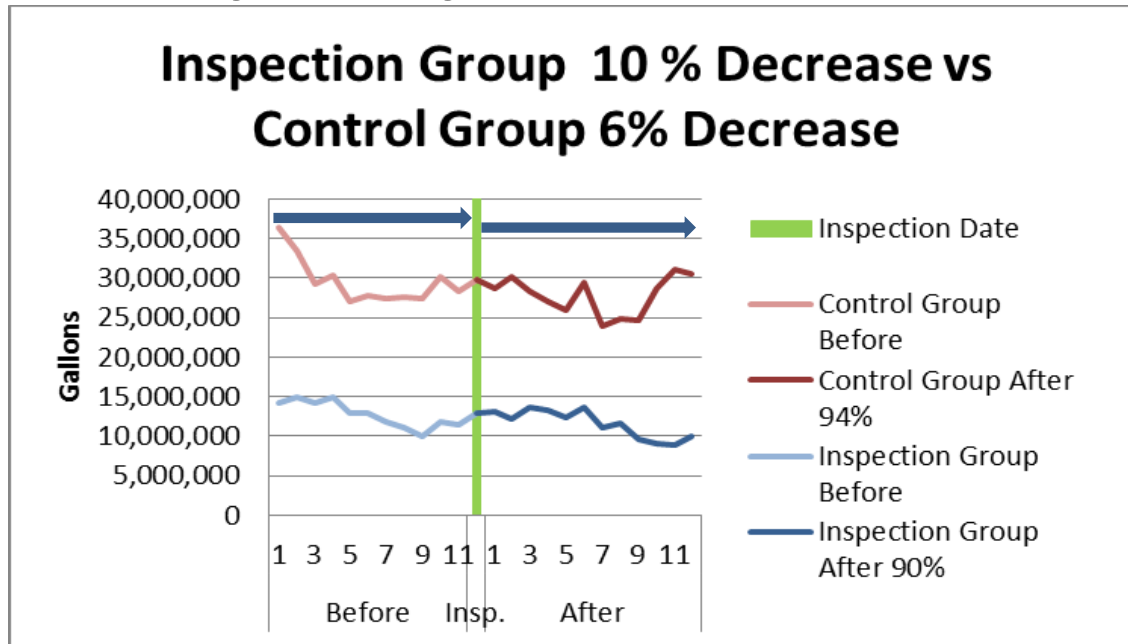
Preliminary analysis

- Efficiency vs. consumption question
- Water waste reports and fines fluctuate year to year
- Focus on water use and efficacy of the inspection

Preliminary analysis

- Use first year of the requirement to compare properties that had inspections vs. properties due the next year
- Look at water use for one year prior and one year after the various due dates to make a **relative** comparison within each zone
- Properties compared to properties in the same zone - no real need to control for weather, affluence, or geographic location
- Focused on irrigation only meters which had inspections the month of the due date

Preliminary analysis – all zones



Total volume prior to due date compared to total volume post due date for all six zones

Properties with an inspection used on average 26,611 gallons less than properties without inspections

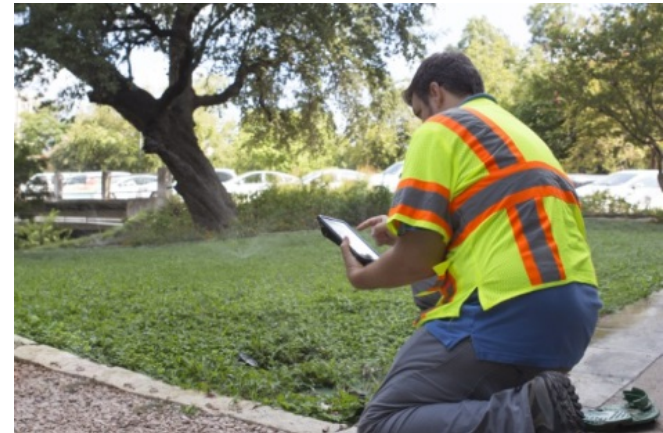
Preliminary analysis – individual zones

Month	Group	% of previous year's water use	Difference between groups
January	Inspection	101%	23%
	Control	78%	
March	Inspection	104%	18%
	Control	86%	
May	Inspection	84%	-2%
	Control	86%	
July	Inspection	87%	-5%
	Control	92%	
September	Inspection	93%	-15%
	Control	108%	
November	Inspection	69%	-37%
	Control	106%	

Trend shows assessments done later in the year were more effective, but we are unable to pinpoint the cause.

Future analysis

- More time and data will be nice (and complicated)
- Analyze the requirement as a whole
 - Has maintenance improved in non-due date year?
 - Are properties abandoning systems?
 - Are fine amounts effective?
- Are some inspectors more effective?
- Inspector feedback
- Landscape company feedback



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