



**CITY OF PLANO
COUNCIL AGENDA ITEM**

CITY SECRETARY'S USE ONLY				
<input type="checkbox"/> Consent <input type="checkbox"/> Regular <input type="checkbox"/> Statutory				
Council Meeting Date:		03/08/10		
Department:		Sustainability & Environmental Services		
Department Head		Nancy Nevil		
Agenda Coordinator (include phone #): Tiffany Stephens x4264				
CAPTION				
<p>A resolution of the City Council of the City of Plano, Texas, repealing Resolution No. 2010-2-9(R) which adopted the City of Plano Water Management Plan; adopting a new Water Management Plan for the City of Plano, Texas, to promote responsible use of water and to provide for best management practices resulting in on-going, long term water savings; authorizing its execution by the City Manager or his authorized designee; and providing an effective date.</p>				
FINANCIAL SUMMARY				
<input checked="" type="checkbox"/> NOT APPLICABLE <input type="checkbox"/> OPERATING EXPENSE <input type="checkbox"/> REVENUE <input type="checkbox"/> CIP				
FISCAL YEAR: 09/10	Prior Year (CIP Only)	Current Year	Future Years	TOTALS
Budget	0	0	0	0
Encumbered/Expended Amount	0	0	0	0
This Item	0	0	0	0
BALANCE	0	0	0	0
FUND(S): GENERAL FUND				
COMMENTS: There is no financial impact associated with this item.				
STRATEGIC PLAN GOAL: Managing natural resources relates to the City's Goal of a "Financially Strong City with Service Excellence".				
SUMMARY OF ITEM				
<p>The Texas Commission on Environmental Quality requires each municipality develop a water conservation plan and the Texas Administrative Code, Title 30, Part I, Chapter 288, Subchapter A establishes minimum requirements of the plan.</p>				
List of Supporting Documents:			Other Departments, Boards, Commissions or Agencies	
Water Management Plan				



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MEMORANDUM

DATE: March 2, 2009

TO: Thomas H. Muehlenbeck, City Manager

FROM: Nancy Nevil, Director of Sustainability & Environmental Services

RE: Revised Water Management Plan

On February 8, 2010, the City Council approved Resolution No. 2010-2-9 adopting the Water Management Plan. The City Secretary discovered two pages were missing from one of the ordinances included as an appendix and there were some references to “ordinance” when it should have been “resolution.”

At the adoption of the first Plan, the appendix for the Water Conservation Incentive Program was intentionally left blank. Since that time, the program has been finalized.

It was determined to repeal the previous resolution and replace it with a complete and accurate version.

Please let me know if you have any questions.

c: Mark Israelson, Assistant City Manager

A resolution of the City Council of the City of Plano, Texas, repealing Resolution No. 2010-2-9(R) which adopted the City of Plano Water Management Plan; adopting a new Water Management Plan for the City of Plano, Texas, to promote responsible use of water and to provide for best management practices resulting in on-going, long term water savings; authorizing its execution by the City Manager or his authorized designee; and providing an effective date.

WHEREAS, the City Council for the City of Plano, Texas, in Resolution No. 2010-2-9(R) (Feb. 8, 2010), adopted the City of Plano Water Management Plan ("Plan"); and

WHEREAS, the Plan adopted on February 8, 2010 contains clerical errors and is hereby replaced by a complete and accurate version; and

WHEREAS, the Water Code and the regulations of the Texas Commission on Environmental Quality require that the City adopt a Water Management Plan; and

WHEREAS, the City recognizes that the amount of water available to its water customers is limited; and

WHEREAS, the City recognizes that due to natural limitations, drought conditions, system failures and other acts of God which may occur, the City cannot guarantee an uninterrupted water supply for all purposes at all times; and

WHEREAS, the City Council has determined that adopting the Water Management Plan as corrected is in the best interest of the citizens of the City.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF PLANO, TEXAS, THAT:

Section I. The City Council hereby repeals in its entirety Resolution No. 2010-2-9(R) and adopts the City of Plano Water Management Plan, attached hereto as Addendum A, as if recited verbatim herein. The Appendices to Addendum A may be revised from time to time and the most recent version shall be part of the Water Management Plan.

Section II. The City Manager is authorized to execute any and all documents or take any action necessary to maintain the Water Management Plan.

DULY PASSED AND APPROVED this the 8th day of March, 2010.

Phil Dyer, MAYOR

ATTEST:

Diane Zucco, CITY SECRETARY

APPROVED AS TO FORM:

Diane C. Wetherbee, CITY ATTORNEY

City of Plano
Water Management Plan

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APPENDICES

APPENDIX A	List of References
APPENDIX B	Texas Commission on Environmental Quality Rules on Municipal Water Conservation and Drought Contingency Plans <ul style="list-style-type: none">• Texas Administrative Code Title 30, Part 1, Chapter 288, Subchapter A, Rule §288.1 – Definitions• Texas Administrative Code Title 30, Part 1, Chapter 288, Subchapter A, Rule §288.2 – Water Conservation Plans for Municipal Uses by Public Water Suppliers• Texas Administrative Code Title 30, Part 1, Chapter 288, Subchapter B, Rule §288.20 – Drought Contingency Plans for Municipal Uses by Public Water Suppliers
APPENDIX C	TCEQ Water Utility Profile
APPENDIX D	NTMWD Member City and Customer Annual Water Conservation Report
APPENDIX E	Landscape Water Management Regulations
APPENDIX F	Water Conservation Incentive Program
APPENDIX G	TCEQ Water Conservation Implementation Report
APPENDIX H	Illegal Water Connections and Theft of Water Ordinance
APPENDIX I	Water Rate Structure Ordinance
APPENDIX J	Resolution Adopting Water Management Plan
APPENDIX K	Drought Contingency & Water Emergency Response Ordinance
APPENDIX L	Plumbing Code Ordinance
APPENDIX M	Fugitive Water Ordinance

1. INTRODUCTION AND OBJECTIVES

Water supply has always been a key issue in the development of Texas. In recent years, the growing population and economic development of North Central Texas has led to increasing demands for water supplies. At the same time, local and less expensive sources of water supply are largely developed. Additional supplies to meet higher demands will be expensive and difficult to develop. It is therefore important that NTMWD and its Member Cities and Customers make the most efficient use of existing supplies. This will delay the need for new supplies, minimize the environmental impacts associated with developing new supplies, and delay the high cost of additional water supply development.

Recognizing the need for efficient use of existing water supplies, the Texas Commission on Environmental Quality (TCEQ) has developed guidelines and requirements governing the development of water conservation and drought contingency plans for public water suppliers. TCEQ guidelines and requirements are included in **Appendix B**. The best management practices established by the Water Conservation Implementation Task Force, established pursuant to SB1094 by the 78th Legislature, were also considered in the development of the water conservation measures. The Water Management Plan for the City of Plano was developed in concert with the NTMWD's water conservation and drought contingency and water emergency response plans.

The water conservation sections of this plan are intended as a year-round water efficiency plan and include measures that are designed to result in ongoing, long-term water savings. The objectives of this water conservation plan are as follows:

- To reduce water consumption from the levels that would prevail without conservation efforts.
- To reduce the loss and waste of water.
- To improve efficiency in the use of water.
- To document the level of recycling and reuse in the water supply.
- To extend the life of current water supplies by reducing the rate of growth in demand.

The drought contingency and water emergency response sections of this plan address strategies designed to temporarily reduce water use in response to specific conditions. The purpose of this drought contingency and water emergency response plan is as follows:

- To conserve the available water supply in times of drought and emergency
- To maintain supplies for domestic water use, sanitation, and fire protection
- To protect and preserve public health, welfare, and safety
- To minimize the adverse impacts of water supply shortages
- To minimize the adverse impacts of emergency water supply conditions.

The NTMWD supplies treated water to its Member Cities and Customers. The water conservation and drought contingency sections of this document were modeled after plans

developed by NTMWD in consultation with its Member Cities. In concert with the adoption of this plan, the City of Plano is required to do the following:

- Complete the TCEQ Water Utility Profile (**Appendix C**).
- Complete the TCEQ Water Conservation Implementation Report (**Appendix G**).
- Set five-year and ten-year goals for per capita water use (Section 4).
- Adopt a resolution approving the plan (**Appendix J**).

This plan includes all elements required by TCEQ. The final adopted version of the Water Management Plan, including appendices will also be provided to NTMWD, as well as TCEQ.

This Water Management Plan applies to all users of the City of Plano water supply.

Definitions:

Athletic Fields means turf or play surfaces that are provided by government agencies for public or non-profit sporting activities and events. The athletic field is typically defined by a grass that requires a very high level of maintenance and mowed at a low height to provide a consistent and safe play surface.

Central Controlled Irrigation Systems means large scale, technically advanced systems used to water large or multiple sites from a central location. This advanced technology can monitor and adapt system operation and irrigation run times in response to conditions in the system or surrounding areas. (weather conditions, pipe breaks, etc.) These systems may also be easily programmed (individually or globally) to reduce flow rates or the amount of water applied to meet conservation needs; required reduction percentages; and provide historical data or reports. The City central irrigation system uses multiple weather stations throughout the city to collect real-time climatologically data. This data is then available to the computer to automatically shut down the system when weather conditions warrant.

Customer means a person, company or other entity connected to the City's water system and contracting with the City of Plano to receive potable water service.

Drip or Low Flow Irrigation means irrigation systems using devices and components that emit water at a low volume and may be designed for specific types of plant material. These irrigation devices or components limit the amount and location of water being applied. Examples include micro-irrigation (emitters and drip tubes), irrigation (bubbler and low flow spray) heads used for watering trees, soaker hoses, etc.

Foundation means area that includes first 24" of soil from foundation slab.

Fugitive water means the pumping, flow, release, escape, or leakage of any water from any pipe, valve, faucet, connection, diversion, well, from any water supply, transport, storage disposal or delivery system of a facility onto adjacent property or the public right-of-way. For purposes of this Plan, it will apply to water extending 10' from property boundary lines onto adjacent property or 10' past targeted irrigation area.

High Use Areas means publicly owned properties that have irrigated surfaces where there is a high volume of public use and there may be a significant increase in risk and liability if surfaces are not minimally irrigated to mitigate safety hazards to users caused by lack of water.

Landscape means natural plant materials around buildings or on grounds (i.e., trees, shrubbery, grasses and flowers) but excludes athletic fields and high use areas.

Potable water means any public water supply which has been investigated and approved by the TCEQ as satisfactory for drinking, culinary and domestic purposes.

Public Health and Safety means such amount of water as necessary to sustain human life, reasonable standards of hygiene and sanitation, and fire suppression.

Wholesale customers purchase water at a discounted rate either directly from NTMWD or from a NTMWD water system Member City. Plano is a wholesale customer of NTMWD.

Responsibilities:

(a) The Director of Public Works and Engineering is responsible for:

- Advising the City Manager in issues related to water conservation and drought and water emergency issues.
- Developing and maintaining the Water Conservation and Drought and Emergency Response Plans in consonance with the most current NTMWD Model Plan and TCEQ guidelines and policies.
- Implementing programs to reduce and control water loss, calculating and reporting unaccounted for water, and keeping water loss under 12%. When water loss exceeds state standards, the City will intensify water loss control programs.
- Assuring that City ordinances are maintained to continue to support future revisions to the NTMWD Model Plan, City Plan, TCEQ guidelines, and legislative mandate.
- Preparing and submitting all the required reports, water utility profiles, and tabular materials related to water conservation in the formats and media as required by the City Plan and/or NTMWD, TCEQ, and/or the Texas Water Development Board (TWDB).
- Continuing the City's Water and Sewer Fund financial programming to support a residential meter replacement cycle of no more than 10 years and conducting a regular large meter testing program on no less than a 5-year cycle.
- Supporting the City's goal of reducing municipal gallons per capita per day (gpcd) to 213 gpcd within a 10 year period.
- Providing the City Plan to NTMWD for comment. Providing NTMWD and the Chair of the Region C water planning group the City's adopted resolution and drought contingency ordinance.
- Managing the administrative processing and follow-up associated with requesting of variances from City customers.
- Managing the administrative processing and follow-up associated with enforcement of all water conservation and drought contingency and water emergency response provisions of the drought contingency ordinance.
- Managing the program that allows the pursuit of administrative remedies for violations of water conservation and drought water use restrictions by non-single family water account holders.

(b) The Director of Sustainability & Environmental Services is responsible for:

- Developing and presenting water conservation educational and informational programs.

- Developing water conservation promotional activities including a water conservation incentive program.
- Developing and distributing the annual Water Confidence Report.
- Notifying the public of the initiation of any drought and emergency response stage.
- Assuring that education materials are maintained to continue to support future revisions to the NTMWD Model Plan, City Plan, TCEQ guidelines, and legislative mandate.

(c) The Director of Customer & Utility Billing is responsible for:

- Assuring the City continues its program of universal metering and billing.
- Assuring that the City water billing/records management system includes water usage classes and capabilities to sort/separate differing classes and categories of water usage as required by the NTMWD Model Plan and Texas Administrative Code (TAC) Title 30, Part I, Chapter 288, Subchapter A, Rule 288.2(a)(2)(b).

(d) The Chief Building Official is responsible for:

- Enforcing the requirements of the International Plumbing Code (IPC) in residential and commercial facilities.
- As part of the building permit and building inspection programs, enforcing requirement for landscape irrigation system design in accordance with state design and installation requirements and inclusion of freeze and rain sensors on all new irrigation systems (**Appendix L**). This requires irrigation system design submission by builders for review by the building official staff and inspection of the irrigation systems as part of the building inspection program.

(e) Planning and Development is responsible for:

- Maintaining and enforcing the Zoning Ordinance's landscape and irrigation plan requirements through the development review process.
- Implementing procedures to allow developers to delay the installation of landscaping during drought contingency watering restrictions.

(f) Parks and Recreation Department is responsible for:

- Operating and maintaining a central controlled irrigation system, and other city irrigation systems to ensure conservation of water, and efficient use of irrigation to meet the needs of users utilizing city sites. Safety and usability for recreational users of irrigated city sites shall be considered a priority.
- Installing and maintaining landscapes and managing natural and man-made park resources in a sustainable manner suitable for the scope and scale of the assets. Demonstration of conservation measures meaningful to residential scale shall be incorporated into sites and practices when feasible.

2. TEXAS COMMISSION ON ENVIRONMENTAL QUALITY RULES

2.1 Conservation Plans

The TCEQ rules governing development of water conservation plans for public water suppliers are contained in Title 30, Part 1, Chapter 288, Subchapter A, Rule 288.2 of the Texas Administrative Code, which is included in **Appendix B**. For the purpose of these rules, a water conservation plan is defined as “A strategy or combination of strategies for reducing the volume of water withdrawn from a water supply source, for reducing the loss or waste of water, for maintaining or improving the efficiency in the use of water, for increasing the recycling and reuse of water, and for preventing the pollution of water.” The elements in the TCEQ water conservation rules covered in this conservation plan are listed below.

Minimum Conservation Plan Requirements

The minimum requirements in the Texas Administrative Code for Water Conservation Plans for Public Water Suppliers are covered in this report as follows:

- 288.2(a)(1)(A) – Utility Profile – Section 3 and Appendix C
- 288.2(a)(1)(B) – Specification of Goals – Section 4
- 288.2(a)(1)(C) – Specific, Quantified Goals – Section 4
- 288.2(a)(1)(D) – Accurate Metering – Sections 5.1 and 5.2
- 288.2(a)(1)(E) – Universal Metering – Section 5.2
- 288.2(a)(1)(F) – Determination and Control of Unaccounted Water – Section 5.4
- 288.2(a)(1)(G) – Public Education and Information Program – Section 6
- 288.2(a)(1)(H) – Non-Promotional Water Rate Structure – Section 7
- 288.2(a)(1)(I) – Reservoir System Operation Plan – Section 8.1
- 288.2(a)(1)(J) – Means of Implementation and Enforcement – Section 12
- 288.2(a)(1)(K) – Coordination with Regional Water Planning Group – Section 10
- 288.2(c) – Review and Update of Plan – Section 11

Conservation Additional Requirements (Population over 5,000)

The Texas Administrative Code includes additional requirements for water conservation plans for drinking water supplies serving a population over 5,000:

- 288.2(a)(2)(A) – Leak Detection, Repair, and Water Loss Accounting – Sections 5.1, 5.2, 5.3, and 5.4
- 288.2(a)(2)(B) – Record Management System – Section 5.2
- 288.2(a)(2)(C) – Requirement for Water Conservation Plans by Wholesale Customers – Section 8.7

Additional Conservation Strategies

The TCEQ requires that a water conservation implementation report (Appendix G) be completed and submitted on an annual basis.

In addition to the TCEQ required water conservation strategies, the NTMWD also requires the following strategy be included in the Member City and Customer plans:

- 288.2(a)(3)(F) – Considerations for Landscape Water Management Regulations – Section 8.4 and Appendix E

TCEQ rules also include optional, but not required, conservation strategies, which may be adopted by suppliers. The NTMWD recommends that the following strategies be included in the Member City and Customer water conservation plans:

- 288.2(a)(3)(A) – Conservation Oriented Water Rates – Section 7
- 288.2(a)(3)(B) – Ordinances, Plumbing Codes or Rules on Water-Conserving Fixtures – Section 8.3
- 288.2(a)(3)(C) – Replacement or Retrofit of Water-Conserving Plumbing Fixtures – Section 8.6
- 288.2(a)(3)(D) – Reuse and Recycling of Wastewater – Section 8.2
- 288.2(a)(3)(F) – Considerations for Landscape Water Management Regulations – Section 8.5 and Appendix E
- 288.2(a)(3)(G) – Monitoring Method – Section 5.5
- 288.2(a)(3)(H) – Additional Conservation Ordinance Provisions – Section 8.5 and 8.6

2.2 Drought Contingency Plans

The TCEQ rules governing development of drought contingency plans for public water suppliers are contained in Title 30, Part 1, Chapter 288, Subchapter B, Rule 288.20 of the Texas Administrative Code, a current copy of which is included in **Appendix B**. For the purpose of these rules, a drought contingency and water emergency response plan is defined as “a strategy or combination of strategies for temporary supply and demand management responses to temporary and potentially recurring water supply shortages and other water supply emergencies.” The elements in the TCEQ drought contingency rules covered in this conservation plan are listed below.

Minimum Requirements

TCEQ’s minimum requirements for drought contingency plans are addressed in the following subsections of this report:

- 288.20(a)(1)(A) – Provisions to Inform the Public and Provide Opportunity for Public Input – Appendix K
- 288.20(a)(1)(B) – Provisions for Continuing Public Education and Information – Appendix K
- 288.20(a)(1)(C) – Coordination with the Regional Water Planning Group – Section 10

- 288.20(a)(1)(D) – Criteria for Initiation and Termination of Drought Stages – Appendix K
- 288.20(a)(1)(E) – Drought and Emergency Response Stages – Appendix K
- 288.20(a)(1)(F) – Specific, Quantified Targets for Water Use Reductions – Appendix K
- 288.20(a)(1)(G) – Water Supply and Demand Management Measures for Each Stage – Appendix K
- 288.20(a)(1)(H) – Procedures for Initiation and Termination of Drought Stages – Appendix K
- 288.20(a)(1)(I) - Procedures for Granting Variances – Appendix K
- 288.20(a)(1)(J) - Procedures for Enforcement of Mandatory Restrictions – Appendix K
- 288.20(a)(3) – Consultation with Wholesale Supplier – Appendix K
- 288.20(b) – Notification of Implementation of Mandatory Measures – Appendix K
- 288.20(c) – Review and Update of Plan – Section 11

3. WATER UTILITY PROFILE

The Water Utility Profile must be completed as a requirement of the Water Management Plan. See **Appendix C**.

4. SPECIFICATION OF WATER CONSERVATION GOALS

TCEQ rules require the adoption of specific water conservation goals for a water conservation plan. As part of plan adoption, the City of Plano must develop 5-year and 10-year goals for per capita municipal use. These goals should be submitted to NTMWD. The goals for this water management plan include the following:

- Maintain the per capita municipal water use below the specified amount in gallons per capita per day in a dry year, as shown in the completed Table 4.1.
- Maintain the level of unaccounted water in the system below 12% in 2009 and in subsequent years, as discussed in Section 5.4.
- Implement and maintain a program of universal metering and meter replacement and repair, as discussed in Section 5.2.
- Decrease waste in lawn irrigation by implementation and enforcement of landscape water management regulations, as discussed in Section 8.4 and **Appendix E**.
- Increase efficient water usage as discussed in Sections 8.5 and 8.6.
- Raise public awareness of water conservation and encourage responsible public behavior by a public education and information program, as discussed in Section 6.
- Develop a system specific strategy to conserve water during peak demands, thereby reducing the peak use.

**Table 4.1
Five-Year and Ten-Year Municipal Per Capita Water Use Goals (gpcd)**

Description	Current Average (gpcd)	5-Year Goal (gpcd)	10-Year Goal (gpcd)
Current 5-Year Average Per Capita Municipal Use with Credit for Reuse	237*		
Expected Reduction due to Low-Flow Plumbing Fixtures	N/A	N/A	N/A
Projected Reduction Due to Elements in this Plan		12	24
Water Conservation Goals (with credit for reuse)		225	213

*Based on water consumption of residents and does not include “industrial” or “commercial” use.

5. METERING, WATER USE RECORDS, CONTROL OF UNACCOUNTED WATER, AND LEAK DETECTION AND REPAIR

One of the key elements of water conservation is tracking water use and controlling losses through illegal diversions and leaks. It is important to carefully meter water use, detect and repair leaks in the distribution system and provide regular monitoring of unaccounted water.

5.1 Accurate Metering of Treated Water Deliveries from NTMWD

Water deliveries from NTMWD are metered by NTMWD using meters with accuracy of $\pm 2\%$. These meters are calibrated on a monthly basis by NTMWD to maintain the required accuracy.

5.2 Metering of Customer and Public Uses and Meter Testing, Repair, and Replacement

The provision of water to all customers, including public and governmental users, will be metered in the City of Plano. The City of Plano tests and/or replaces their residential customer meters in accordance with Sec. 4.2.8 of AWWA C700-95 and M-6, Water Meters – Selection, Installation, Testing and Maintenance Record Management System. All residential customer meters will be budgeted to be replaced on a minimum of a 10-year cycle. Additionally, large meters will be regularly tested on no less than a 5-year interval and either maintained or replaced when their test flow is outside standards established by AWWA.

As required by TAC Title 30, Part 1, Chapter 288, Subchapter A, Rule 288.2(a)(2)(B), the City of Plano will maintain a customer billing and record management system that allows for the separation of water sales and uses into residential, commercial, public/institutional, and industrial categories. This information will be included in an annual water conservation report, as described in Section 5.6 below.

5.3 Determination and Control of Unaccounted Water

Unaccounted water is the difference between water delivered to the City of Plano from NTMWD (and other supplies, if applicable) and metered water sales to customers plus authorized but unmetered uses. (Authorized but unmetered uses would include use for fire fighting, releases for flushing of lines, uses associated with new construction, etc.) Unaccounted water can include several categories:

- Inaccuracies in customer meters. (Customer meters tend to run more slowly as they age and under-report actual use.)
- Accounts which are being used but have not yet been added to the billing system.
- Losses due to water main breaks and leaks in the water distribution system.
- Losses due to fire fighting.
- Losses due to illegal connections and theft. (**Appendix H**)
- Other.

Measures to control unaccounted water will be part of the routine operations of the City of Plano. Maintenance crews and personnel will look for and report evidence of leaks in the

water distribution system. A leak detection and repair program is described in Section 5.4 below. Meter service technicians, building inspectors, and all City crews will watch for and report signs of illegal connections, so they can be quickly addressed.

Unaccounted water should be calculated in accordance with the provisions of **Appendix C**. With the measures described in this plan, the City of Plano should maintain unaccounted water below 12 percent in 2009 and subsequent years. If unaccounted water exceeds this goal, the City of Plano will implement a more intensive audit to determine the source(s) of and reduce the unaccounted water. The annual conservation report described below is the primary tool that should be used to monitor unaccounted water.

5.4 Leak Detection and Repair

As described above, city crews and personnel should look for and report evidence of leaks in the water distribution system. Areas of the water distribution system, in which numerous leaks and line breaks occur, should be targeted for replacement as funds are available. The City central irrigation system uses sub-metering and real-time data collection to monitor for leaks, line breaks, and malfunctions. The system automatically shuts down when leaks are detected, then automatically generates reports for these occurrences so they may be followed up by field technicians.

5.5 Monitoring of Effectiveness and Efficiency - Annual Water Conservation Report

The City of Plano will complete the NTMWD Member City and Customer Water Conservation Report (**Appendix D**) by March 31 each year and will use this report to monitor the effectiveness and efficiency of the water conservation program and to plan conservation-related activities for the next year. The form records the water use by category, per capita municipal use, and unaccounted water for the current year and compares them to historical values. The annual water conservation report should be sent to NTMWD, which will monitor NTMWD Member Cities' and Customers' water conservation trends.

5.6 Water Conservation Implementation Report

The TCEQ-required Water Conservation Implementation Report (**Appendix G**) is due to the TCEQ by May 1 of every year, starting in the year 2010. This report lists the various water conservation strategies that have been implemented, including the date the strategy was implemented. The report also calls for the five-year and ten-year per capita water use goals from the previous water conservation plan. The reporting entity must answer whether or not these goals have been met and if not, why not. The amount of water saved is also requested.

6. CONTINUING PUBLIC EDUCATION AND INFORMATION CAMPAIGN

The continuing public education and information campaign on water conservation includes the following elements:

- Designated education coordinator to develop water conservation materials, presentations, exhibits, rebate programs, and educational workshops.
- Trained water meter technicians to provide face-to-face communication with residents concerning proper irrigation system design and operation and other conservation practices
- Maintain Web site designed to educate residents on water conserving practices, real time water usage, recommended irrigation schedules, and links to other helpful resources.
- Utilize the “Water IQ: Know Your Water” and produce other public education materials as appropriate for targeted audiences.
- Insert water conservation information with water bills. Inserts will include material developed by Sustainability & Environmental Services (SES) staff and material obtained from the TWDB, the TCEQ, and other sources.
- Encourage local media coverage of water conservation issues and the importance of water conservation.
- Notify local organizations, schools, and civic groups that SES and staff of the NTMWD are available to make presentations on the importance of water conservation and ways to save water.
- Promote the *Texas Smartscape* Web site (www.txsmartscape.com) and make water conservation brochures and other water conservation materials available to the public at City Hall and other public places.
- Make information on water conservation available on City and department Web sites and include links to following websites: “Water IQ: Know Your Water,” *Texas Smartscape*, NTMWD, Texas Water Development Board, and Texas Commission on Environmental Quality.

7. WATER RATE STRUCTURE

The City of Plano will continue to bill customers using an increasing block rate water structure that is intended to encourage water conservation and discourage excessive use and waste of water. See **Appendix I** for the City's ordinance establishing an increasing block rate structure and minimum charge and base charges for all tiers for the residential and commercial/industrial water rates.

8. OTHER WATER CONSERVATION MEASURES

8.1 NTMWD System Operation Plan

Member Cities and Customers of NTMWD purchase treated water from NTMWD and do not have surface water supplies for which to implement a system operation plan. NTMWD's permits do allow some coordinated operation of its water supply sources, and NTMWD is seeking additional water rights for coordinated operation to optimize its available water supplies.

8.2 Reuse and Recycling of Wastewater

The City of Plano does not own and operate their own wastewater treatment plants. Their wastewater is treated by NTMWD. NTMWD currently has the largest wastewater reuse program in the state. NTMWD has water rights through Lake Lavon allowing reuse of up to 71,882 acre-feet per year of treated wastewater for municipal purposes. In addition, NTMWD has also developed the East Fork Raw Water Supply Project which can divert up to 157,393 acre-feet per year based on treated wastewater discharges by the NTMWD. These two reuse projects will provide up to 44 percent of the NTMWD's currently permitted water supplies. NTMWD also provides treated effluent from its wastewater treatment plants available for direct reuse for landscape irrigation and industrial use.

8.3 Ordinances, Plumbing Codes, or Rules on Water-Conserving Fixtures

The state has required water-conserving fixtures in new construction and renovations since 1992. The state standards call for flows of no more than 2.5 gallons per minute (gpm) for faucets, 3.0 gpm for showerheads, and 1.6 gallons per flush for toilets. Similar standards are now required nationally under federal law. These state and federal standards assure that all new construction and renovations will use water-conserving fixtures. As it deems appropriate, the City of Plano will continue to implement ordinances, plumbing codes, and rules for water conserving fixtures as they evolve through relevant building codes and State of Texas requirements.

8.4 Landscape Water Management Measures

The City of Plano adopts the following basic landscape water conservation measures as required by NTMWD:

- The City of Plano promotes a policy that restricts lawn irrigation between the hours of 10 am to 6 pm from April 1 to October 31 of each year. Registered and properly functioning central controlled irrigation system and low flow irrigation systems are exempt from this provision. Government agencies watering athletic fields, high use areas, or any other public grounds that are heavily used by the public will be programmed to meet the minimum watering requirement to keep the surface / turf safe and usable for its intended purpose. Running government irrigation systems for maintenance, testing, and calibration purposes at any time is also exempt; provided there is a maintenance technician on-site while the system is running. Public sites shall be programmed to meet this 10 AM to 6 PM watering prohibition when feasible. As older, large scale public irrigation systems are renovated, systems will be designed to minimize exemptions to the level of funding available.

- Promote lawn and landscape irrigation limited to a maximum of twice per week between April 1 and October 31. Registered and properly functioning central controlled irrigation system and low flow irrigation systems are exempt from this provision. Government agencies watering athletic fields, high use areas, or any other public grounds that are heavily used by the public will be programmed to meet the minimum watering requirement to keep the surface / turf safe and usable for its intended purpose. Running government irrigation systems for maintenance, testing, and calibration purposes at any time is also exempt; provided there is a maintenance technician on-site while the system is running. As a good faith effort, public sites shall be programmed to meet twice per week watering schedules when feasible. As older, large scale public irrigation systems are renovated, systems will be designed to minimize exemptions to the level of funding available.
- Promote watering to one day a week between November 1 and March 30.
- No person or operation shall cause or permit the flow of excess or fugitive water onto any adjacent property or public right-of-way (**Appendix M**).
- Prohibition of watering of impervious surfaces. Wind driven water drift will be taken into consideration (**Appendix M**).
- Prohibition of outdoor watering during precipitation or freeze events (**Appendix M**).

The City has developed landscape regulations as part of its zoning ordinance (**Appendix E**). The requirements are intended to minimize waste in landscape irrigation by requiring:

- Submission of a water budget with landscape plans for new commercial development
- Rain sensors on irrigation systems
- Irrigation system zones to water plants based on similar water needs
- Trees and plants suitable for local soil and climate conditions.
- Landscape designs that conserve water through creative design and that comply with the following principles:
 - Soil protection and improvement
 - Careful selection and design of turf areas
 - Use of site-appropriate plan materials with water conservation in mind
 - Use of mulch around all plant materials and areas that are not turf or hardscape

In addition, the plumbing codes have been amended (**Appendix L**) to require:

- New irrigation systems meeting detailed requirements of use of drip and low flow irrigation, distribution uniformity (75 percent), low-angle spray heads, designs in accordance with TCEQ
- No spray heads allowed between street and sidewalk planting areas of both residential and commercial properties
- Installation and inspection for irrigation systems that include an evaluation of the system for the distribution uniformity
- Rain and freeze sensors are required on all new irrigation systems. Rain and freeze sensors must be maintained to function

8.5 Additional Water Conservation Measures

- Promote proper maintenance of irrigation systems.
- “At home” car washing can be done only when using a water hose with a shut-off nozzle.
- Promote outdoor water efficiency on Web site, including water conserving irrigation systems.
- The Customer & Utility Services Department (C/US) will continue to deploy the next generation of the automated meter reading systems known as fixed network systems which will replace the existing AMR over a 5 year implementation. The fixed network system will offer the new ability to analyze water usage by meter by time of day. Data is captured on a daily basis which assists in the City's efforts to educate and inform customers of patterns of water usage to help customers make better decisions regarding their water consumption and will also help identify presence of leaks.

8.6 Rebates and Free Distribution of Water Conserving Devices

The Water Conservation Incentive Program is described in **Appendix F**. The items may change from time to time as the program evolves. The appendix will be modified as these changes occur.

The City offers partial credit for leak repair with sufficient documentation.

8.7 Requirement for Water Conservation Plans by Wholesale Customers

The NTMWD Model Plan requires that every contract for the wholesale sale of water by Member Cities and/or Customers that is entered into, renewed, or extended after the adoption of this water conservation plan include a requirement that the wholesale customer and any wholesale customers of that wholesale customer develop and implement a water conservation plan meeting the requirements of Title 30, Part 1, Chapter 288, Subchapter A, Rule 288.2 of the Texas Administrative Code. The requirement will also extend to each successive wholesale customer in the resale of the water. The Colony is the only active wholesale customer of Plano’s water system.

9. IMPLEMENTATION OF THE DROUGHT CONTINGENCY & WATER EMERGENCY RESPONSE PLAN

A drought is defined as an extended period of time when an area receives insufficient amounts of rainfall to replenish the water supply, causing water supply sources, in this case reservoirs, to be depleted. In the absence of drought response measures, water demands tend to increase during a drought due to the need for additional outdoor irrigation. The severity of a drought depends on the degree of depletion of supplies and on the relationship of demand to available supplies. The NTMWD considers a drought to end when all of its supply reservoirs refill to the conservation storage pool.

Appendix K includes ordinance establishing procedures and criteria for declaring a water emergency and implementing and terminating drought response stages, procedures for requesting variances, and establishing administrative remedies and fees and criminal penalties for violating the restrictions.

10. COORDINATION WITH THE REGIONAL WATER PLANNING GROUP AND NTMWD

The City of Plano will send a copy of this water management plan, the resolution adopting the plan, and the water utility profile to the NTMWD and the Chair of the Region C Water Planning Group.

11. REVIEW AND UPDATE OF WATER MANAGEMENT PLAN

As required by TCEQ rules, the City of Plano will review the Water Management Plan, including the Drought Contingency and Water Emergency Response Ordinance, every five years. The plan will be updated as appropriate based on new or updated information.

12. IMPLEMENTATION AND ENFORCEMENT OF THE WATER MANAGEMENT PLAN

Appendix J contains a copy of the resolution adopted by the City Council regarding the Water Management Plan. The following ordinances are also included as part of the Water Management Plan:

Appendix E – Landscape Water Management Regulation

Appendix H – Illegal Water Connections and Theft of Water

Appendix I – Water Rates

Appendix K – Drought Contingency & Water Emergency Response

Appendix L – Plumbing Code

Appendix M – Fugitive Water

**APPENDIX A
LIST OF REFERENCES**

- (1) Title 30 of the Texas Administrative Code, Part 1, Chapter 288, Subchapter B, Rule 288.20, downloaded from <http://www.tnrcc.state.tx.us/oprd/rules/pdflib/288a.pdf>, July 2007.
- (2) Freese and Nichols, Inc.: *North Texas Municipal Water District Water Conservation and Drought Contingency and Water Emergency Response Plan*, prepared for the North Texas Municipal Water District, Fort Worth, March 2008.

The following conservation and drought contingency plans and related documents were reviewed in the development of this plan. References marked with a * were used heavily in the development of this plan.

- (3) City of Austin Water Conservation Division: "City of Austin Water Drought Contingency Plan, Developed to Meet Senate Bill 1 Regulatory Requirements," Austin, August 1999.
- (4) City of Austin Water Conservation Division: "City of Austin Water Conservation Plan, Developed to Meet Senate Bill 1 Regulatory Requirements," Austin, August 1999.
- (5) Upper Trinity Regional Water District: "Water Conservation Plan and Emergency Water Demand Management Plan," adopted by the Board of Directors, Lewisville, August 5, 1999.
- (6) Upper Trinity Regional Water District: "Water Conservation Plan and Emergency Water Demand Management Plan (2002 Amended)," adopted by the Board of Directors, Lewisville, February 2002.
- (7) *City of Dallas Water Utilities Department: "City of Dallas Water Management Plan," adopted by the City Council, Dallas, September 1999.
- (8) Updates to City of Dallas Water Management Plan found at <http://www.dallascityhall.com> in September 2003.
- (9) *City of Dallas Water Utilities Department: "City of Dallas Water Conservation Plan," adopted by the City Council, Dallas, September 1999.
- (10) *City of Fort Worth: "Water Conservation plan for the City of Fort Worth," Fort Worth, August 1999.
- (11) Updates to the City of Fort Worth water conservation plan found at <http://ci.fort-worth.tx.us> in September 2003.
- (12) *City of Fort Worth: "Emergency Water Management Plan for the City of Fort Worth," Fort Worth, August 19, 2003.
- (13) HDR Engineering, Inc.: "Water Conservation and Emergency Demand Management Plan," prepared for the Tarrant Regional Water District, Austin, February 2000.
- (14) Freese and Nichols, Inc.: "Water Conservation and Drought Contingency Plan," prepared for Brown County Water Improvement District No. 1, Fort Worth, August 1999.
- (15) Freese and Nichols, Inc.: "Water Conservation and Drought Contingency Plan," prepared for the Sabine River Authority of Texas, Fort Worth, September 1994.

- (16) HDR Engineering, Inc.: "Water Conservation and Emergency Demand Management Plan," prepared for the Tarrant Regional Water District, Austin, June 1998.
- (17) HDR Engineering, Inc.: "Water Conservation Plan for the City of Corpus Christi," adopted by the City of Corpus Christi City Council, August 24, 1999.
- (18) City of Houston's water conservation plan downloaded September 2003 from <http://www.cityofhouston.gov>
- (19) City of Houston: "Ordinance N. 2001-753, Amending Chapter 47 of the Code of Ordinances Relating to Water Emergencies," Houston, August 2001.
- (20) City of Houston: "Ordinance No. 98-764, Relating to Water Conservation," Houston, September 1998.
- (21) City of Houston: "Water Conservation Plan," 1998.
- (22) City of Houston: "Water Emergency Response Plan," Houston, July 15, 1998.
- (23) City of Lubbock: "Water Conservation Plan," ordinance number 10177 adopted by the City Council in August 1999.
- (24) City of El Paso Water Conservation Ordinance downloaded August 14, 2003 from <http://www.epwu.org/ordinance.html>
- (25) San Antonio Water System: "Water Conservation and Reuse Plan," San Antonio, November 1998 with June 2002 updates.
- (26) North Texas Municipal Water District: "District Policy No. 24 Water Conservation Plan Containing Drought Contingency Plan," adopted August 1999.
- (27) GDS Associates, Inc.: "Water Conservation Study," prepared for the Texas Water Development Board, Fort Worth, 2002.
- (28) A & N Technical Services, Inc.: "BMP Costs & Savings Study: A Guide to Data and Methods for Cost-Effectiveness Analysis of Urban Water Conservation Best Management Practices," prepared for The California Urban Water Conservation Council, Santa Monica, California, July 2000.
- (29) *City of Dallas: "City of Dallas Ordinances, Chapter 49, Section 21.1," Dallas, October 1, 2001.
- (30) Title 30 of the Texas Administrative Code, Part 1, Chapter 288, Subchapter A, Rules 288.1 and 288.2, downloaded from [http://info.sos.state.tx.us/pls/pub/readtac\\$ext.ViewTAC?tac_view=4&ti=30&pt=1&ch=288](http://info.sos.state.tx.us/pls/pub/readtac$ext.ViewTAC?tac_view=4&ti=30&pt=1&ch=288), July 2007.
- (31) Water Conservation Implementation Task Force: "Texas Water Development Board Report 362, Water Conservation Best Management Practices Guide," prepared for the Texas Water Development Board, Austin, November 2004.
- (32) Freese and Nichols, Inc.: *North Texas Municipal Water District Water Conservation and Drought Contingency/Water Emergency Response Plan*, prepared for the North Texas Municipal Water District, Fort Worth, March 2008.

The following conservation and drought contingency plans and related documents were reviewed in the development of this plan. References marked with a * were used heavily in the development of this plan.

- (33) Edward Motley, Marisa Vergara, Tom Gooch, and Stephanie Griffin: Memorandum to File on "Region C Municipal Water Use Projections Adopted on August 18, 2003," Fort Worth, August 21, 2003.
- (34) City of Austin Water Conservation Division: "City of Austin Water Drought Contingency Plan, Developed to Meet Senate Bill 1 Regulatory Requirements," Austin, August 1999.
- (35) City of Austin Water Conservation Division: "City of Austin Water Conservation Plan, Developed to Meet Senate Bill 1 Regulatory Requirements," Austin, August 1999.
- (36) Upper Trinity Regional Water District: "Water Conservation Plan and Emergency Water Demand Management Plan," adopted by the Board of Directors, Lewisville, August 5, 1999.
- (37) Upper Trinity Regional Water District: "Water Conservation Plan and Emergency Water Demand Management Plan (2002 Amended)," adopted by the Board of Directors, Lewisville, February 2002.
- (38) *City of Dallas Water Utilities Department: "City of Dallas Water Management Plan," adopted by the City Council, Dallas, September 1999.
- (39) Updates to City of Dallas Water Management Plan found at <http://www.dallascityhall.com> in September 2003.
- (40) *City of Dallas Water Utilities Department: "City of Dallas Water Conservation Plan," adopted by the City Council, Dallas, September 1999.
- (41) *City of Fort Worth: "Water Conservation plan for the City of Fort Worth," Fort Worth, August 1999.
- (42) Updates to the City of Fort Worth water conservation plan found at <http://ci.fort-worth.tx.us> in September 2003.
- (43) *City of Fort Worth: "Emergency Water Management Plan for the City of Fort Worth," Fort Worth, August 19, 2003.
- (44) HDR Engineering, Inc.: "Water Conservation and Emergency Demand Management Plan," prepared for the Tarrant Regional Water District, Austin, February 2000.
- (45) Freese and Nichols, Inc.: "Water Conservation and Drought Contingency Plan," prepared for Brown County Water Improvement District No. 1, Fort Worth, August 1999.
- (46) Freese and Nichols, Inc.: "Water Conservation and Drought Contingency Plan," prepared for the Sabine River Authority of Texas, Fort Worth, September 1994.
- (47) HDR Engineering, Inc.: "Water Conservation and Emergency Demand Management Plan," prepared for the Tarrant Regional Water District, Austin, June 1998.
- (48) HDR Engineering, Inc.: "Water Conservation Plan for the City of Corpus Christi," adopted by the City of Corpus Christi City Council, August 24, 1999.

- (49) City of Houston's water conservation plan downloaded September 2003 from <http://www.cityofhouston.gov>
- (50) City of Houston: "Ordinance N. 2001-753, Amending Chapter 47 of the Code of Ordinances Relating to Water Emergencies," Houston, August 2001.
- (51) City of Houston: "Ordinance No. 98-764, Relating to Water Conservation," Houston, September 1998.
- (52) City of Houston: "Water Conservation Plan," 1998.
- (53) City of Houston: "Water Emergency Response Plan," Houston, July 15, 1998.
- (54) City of Lubbock: "Water Conservation Plan," ordinance number 10177 adopted by the City Council in August 1999.
- (55) City of El Paso Water Conservation Ordinance downloaded August 14, 2003 from <http://www.epwu.org/ordinance.html>
- (56) San Antonio Water System: "Water Conservation and Reuse Plan," San Antonio, November 1998 with June 2002 updates.
- (57) North Texas Municipal Water District: "District Policy No. 24 Water Conservation Plan Containing Drought Contingency Plan," adopted August 1999.
- (58) GDS Associates, Inc.: "Water Conservation Study," prepared for the Texas Water Development Board, Fort Worth, 2002.
- (59) A & N Technical Services, Inc.: "BMP Costs & Savings Study: A Guide to Data and Methods for Cost-Effectiveness Analysis of Urban Water Conservation Best Management Practices," prepared for The California Urban Water Conservation Council, Santa Monica, California, July 2000.
- (60) *City of Dallas: "City of Dallas Ordinances, Chapter 49, Section 21.1," Dallas, October 1, 2001.

APPENDIX B

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY RULES ON MUNICIPAL WATER CONSERVATION AND DROUGHT CONTINGENCY PLANS

Texas Administrative Code Title 30, Part 1, Chapter 288, Subchapter A, Rule §288.1 – Definitions

The following words and terms, when used in this chapter, shall have the following meanings, unless the context clearly indicates otherwise.

- (1) Agricultural or Agriculture--Any of the following activities:
 - (A) cultivating the soil to produce crops for human food, animal feed, or planting seed or for the production of fibers;
 - (B) the practice of floriculture, viticulture, silviculture, and horticulture, including the cultivation of plants in containers or non-soil media by a nursery grower;
 - (C) raising, feeding, or keeping animals for breeding purposes or for the production of food or fiber, leather, pelts, or other tangible products having a commercial value;
 - (D) raising or keeping equine animals;
 - (E) wildlife management; and
 - (F) planting cover crops, including cover crops cultivated for transplantation, or leaving land idle for the purpose of participating in any governmental program or normal crop or livestock rotation procedure.
- (2) Agricultural use--Any use or activity involving agriculture, including irrigation.
- (3) Best management practices--Voluntary efficiency measures that save a quantifiable amount of water, either directly or indirectly, and that can be implemented within a specific time frame.
- (4) Conservation--Those practices, techniques, and technologies that reduce the consumption of water, reduce the loss or waste of water, improve the efficiency in the use of water, or increase the recycling and reuse of water so that a water supply is made available for future or alternative uses.
- (5) Drought contingency plan--A strategy or combination of strategies for temporary supply and demand management responses to temporary and potentially recurring water supply shortages and other water supply emergencies. A drought contingency plan may be a separate document identified as such or may be contained within another water management document(s).
- (6) Industrial use--The use of water in processes designed to convert materials of a lower order of value into forms having greater usability and commercial value, commercial fish production, and the development of power by means other than hydroelectric, but does not include agricultural use.
- (7) Irrigation--The agricultural use of water for the irrigation of crops, trees, and pastureland, including, but not limited to, golf courses and parks which do not receive water through a municipal distribution system.
- (8) Irrigation water use efficiency--The percentage of that amount of irrigation water which is beneficially used by agriculture crops or other vegetation relative to the amount of water diverted from the source(s) of supply. Beneficial uses of water for

irrigation purposes include, but are not limited to, evapotranspiration needs for vegetative maintenance and growth, salinity management, and leaching requirements associated with irrigation.

- (9) Mining use--The use of water for mining processes including hydraulic use, drilling, washing sand and gravel, and oil field repressuring.
- (10) Municipal per capita water use--The sum total of water diverted into a water supply system for residential, commercial, and public and institutional uses divided by actual population served.
- (11) Municipal use--The use of potable water within or outside a municipality and its environs whether supplied by a person, privately owned utility, political subdivision, or other entity as well as the use of sewage effluent for certain purposes, including the use of treated water for domestic purposes, fighting fires, sprinkling streets, flushing sewers and drains, watering parks and parkways, and recreational purposes, including public and private swimming pools, the use of potable water in industrial and commercial enterprises supplied by a municipal distribution system without special construction to meet its demands, and for the watering of lawns and family gardens.
- (12) Municipal use in gallons per capita per day--The total average daily amount of water diverted or pumped for treatment for potable use by a public water supply system. The calculation is made by dividing the water diverted or pumped for treatment for potable use by population served. Indirect reuse volumes shall be credited against total diversion volumes for the purpose of calculating gallons per capita per day for targets and goals.
- (13) Nursery grower--A person engaged in the practice of floriculture, viticulture, silviculture, and horticulture, including the cultivation of plants in containers or nonsoil media, who grows more than 50% of the products that the person either sells or leases, regardless of the variety sold, leased, or grown. For the purpose of this definition, grow means the actual cultivation or propagation of the product beyond the mere holding or maintaining of the item prior to sale or lease, and typically includes activities associated with the production or multiplying of stock such as the development of new plants from cuttings, grafts, plugs, or seedlings.
- (14) Pollution--The alteration of the physical, thermal, chemical, or biological quality of, or the contamination of, any water in the state that renders the water harmful, detrimental, or injurious to humans, animal life, vegetation, or property, or to the public health, safety, or welfare, or impairs the usefulness or the public enjoyment of the water for any lawful or reasonable purpose.
- (15) Public water supplier--An individual or entity that supplies water to the public for human consumption.
- (16) Regional water planning group--A group established by the Texas Water Development Board to prepare a regional water plan under Texas Water Code, §16.053.
- (17) Retail public water supplier--An individual or entity that for compensation supplies water to the public for human consumption. The term does not include an individual or entity that supplies water to itself or its employees or tenants when that water is not resold to or used by others.
- (18) Reuse--The authorized use for one or more beneficial purposes of use of water that remains unconsumed after the water is used for the original purpose of use and before that water is either disposed of or discharged or otherwise allowed to flow into a watercourse, lake, or other body of state-owned water.
- (19) Water conservation plan--A strategy or combination of strategies for reducing the

volume of water withdrawn from a water supply source, for reducing the loss or waste of water, for maintaining or improving the efficiency in the use of water, for increasing the recycling and reuse of water, and for preventing the pollution of water. A water conservation plan may be a separate document identified as such or may be contained within another water management document(s).

- (20) Wholesale public water supplier--An individual or entity that for compensation supplies water to another for resale to the public for human consumption. The term does not include an individual or entity that supplies water to itself or its employees or tenants as an incident of that employee service or tenancy when that water is not resold to or used by others, or an individual or entity that conveys water to another individual or entity, but does not own the right to the water which is conveyed, whether or not for a delivery fee.

Source Note: The provisions of this §288.1 adopted to be effective May 3, 1993, 18 TexReg 2558; amended to be effective February 21, 1999, 24 TexReg 949; amended to be effective April 27, 2000, 25 TexReg 3544; amended to be effective August 15, 2002, 27 TexReg 7146; amended to be effective October 7, 2004, 29 TexReg 9384; amended to be effective January 10, 2008, 33 TexReg 193

	Texas Administrative Code
<u>TITLE 30</u>	ENVIRONMENTAL QUALITY
<u>PART 1</u>	TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
<u>CHAPTER 288</u>	WATER CONSERVATION PLANS, DROUGHT CONTINGENCY PLANS, GUIDELINES AND REQUIREMENTS
<u>SUBCHAPTER A</u>	WATER CONSERVATION PLANS
<u>RULE §288.2</u>	Water Conservation Plans for Municipal Uses by Public Water Suppliers

(a) A water conservation plan for municipal water use by public water suppliers must provide information in response to the following. If the plan does not provide information for each requirement, the public water supplier shall include in the plan an explanation of why the requirement is not applicable.

Minimum requirements.

- (1) All water conservation plans for municipal uses by public drinking water suppliers must include the following elements:
- (A) a utility profile including, but not limited to, information regarding population and customer data, water use data, water supply system data, and wastewater system data;
 - (B) until May 1, 2005, specification of conservation goals including, but not limited to, municipal per capita water use goals, the basis for the development of such goals, and a time frame for achieving the specified goals;
 - (C) beginning May 1, 2005, specific, quantified five-year and ten-year targets for water savings to include goals for water loss programs and goals for municipal use, in gallons per capita per day. The goals established by a public water supplier under this subparagraph are not enforceable;

- (D) metering device(s), within an accuracy of plus or minus 5.0% in order to measure and account for the amount of water diverted from the source of supply;
 - (E) a program for universal metering of both customer and public uses of water, for meter testing and repair, and for periodic meter replacement;
 - (F) measures to determine and control unaccounted-for uses of water (for example, periodic visual inspections along distribution lines; annual or monthly audit of the water system to determine illegal connections; abandoned services; etc.);
 - (G) a program of continuing public education and information regarding water conservation;
 - (H) a water rate structure which is not "promotional," i.e., a rate structure which is cost-based and which does not encourage the excessive use of water;
 - (I) a reservoir systems operations plan, if applicable, providing for the coordinated operation of reservoirs owned by the applicant within a common watershed or river basin in order to optimize available water supplies; and
 - (J) a means of implementation and enforcement which shall be evidenced by:
 - (i) a copy of the ordinance, resolution, or tariff indicating official adoption of the water conservation plan by the water supplier; and
 - (ii) a description of the authority by which the water supplier will implement and enforce the conservation plan; and
 - (K) documentation of coordination with the regional water planning groups for the service area of the public water supplier in order to ensure consistency with the appropriate approved regional water plans.
- (2) Additional content requirements. Water conservation plans for municipal uses by public drinking water suppliers serving a current population of 5,000 or more and/or a projected population of 5,000 or more within the next ten years subsequent to the effective date of the plan must include the following elements:
- (A) a program of leak detection, repair, and water loss accounting for the water transmission, delivery, and distribution system in order to control unaccounted-for uses of water;
 - (B) a record management system to record water pumped, water deliveries, water sales, and water losses which allows for the desegregation of water sales and uses into the following user classes:
 - (i) residential;
 - (ii) commercial;
 - (iii) public and institutional; and
 - (iv) industrial;
 - (C) a requirement in every wholesale water supply contract entered into or renewed after official adoption of the plan (by either ordinance, resolution, or tariff), and including any contract extension, that each successive wholesale customer develop and implement a water conservation plan or water conservation measures using the applicable elements in this chapter. If the customer intends to resell the water, the contract between the initial supplier and customer must provide that the contract for the resale of the water must have water conservation requirements so that each successive customer in the resale of the water will be required to implement water conservation measures in accordance with the provisions of this chapter.
- (3) Additional conservation strategies. Any combination of the following strategies shall be selected by the water supplier, in addition to the minimum requirements in

paragraphs (1) and (2) of this subsection, if they are necessary to achieve the stated water conservation goals of the plan. The commission may require that any of the following strategies be implemented by the water supplier if the commission determines that the strategy is necessary to achieve the goals of the water conservation plan:

- (A) conservation-oriented water rates and water rate structures such as uniform or increasing block rate schedules, and/or seasonal rates, but not flat rate or decreasing block rates;
- (B) adoption of ordinances, plumbing codes, and/or rules requiring water-conserving plumbing fixtures to be installed in new structures and existing structures undergoing substantial modification or addition;
- (C) a program for the replacement or retrofit of water-conserving plumbing fixtures in existing structures;
- (D) reuse and/or recycling of wastewater and/or graywater;
- (E) a program for pressure control and/or reduction in the distribution system and/or for customer connections;
- (F) a program and/or ordinance(s) for landscape water management;
- (G) a method for monitoring the effectiveness and efficiency of the water conservation plan; and
- (H) any other water conservation practice, method, or technique which the water supplier shows to be appropriate for achieving the stated goal or goals of the water conservation plan.

(b) A water conservation plan prepared in accordance with 31 TAC §363.15 (relating to Required Water Conservation Plan) of the Texas Water Development Board and substantially meeting the requirements of this section and other applicable commission rules may be submitted to meet application requirements in accordance with a memorandum of understanding between the commission and the Texas Water Development Board.

(c) Beginning May 1, 2005, a public water supplier for municipal use shall review and update its water conservation plan, as appropriate, based on an assessment of previous five-year and ten-year targets and any other new or updated information. The public water supplier for municipal use shall review and update the next revision of its water conservation plan not later than May 1, 2009, and every five years after that date to coincide with the regional water planning group.

Source Note: The provisions of this §288.2 adopted to be effective May 3, 1993, 18 TexReg 2558; amended to be effective February 21, 1999, 24 TexReg 949; amended to be effective April 27, 2000, 25 TexReg 3544; amended to be effective October 7, 2004, 29 TexReg 9384

Texas Administrative Code

TITLE 30
PART 1
CHAPTER 288

SUBCHAPTER B
RULE §288.20

ENVIRONMENTAL QUALITY
TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
WATER CONSERVATION PLANS, DROUGHT
CONTINGENCY PLANS, GUIDELINES AND
REQUIREMENTS
DROUGHT CONTINGENCY PLANS
**Drought Contingency Plans for Municipal Uses by Public
Water Suppliers**

-
- (a) A drought contingency plan for a retail public water supplier, where applicable, must include the following minimum elements.
- (1) Minimum requirements. Drought contingency plans must include the following minimum elements.
- (A) Preparation of the plan shall include provisions to actively inform the public and affirmatively provide opportunity for public input. Such acts may include, but are not limited to, having a public meeting at a time and location convenient to the public and providing written notice to the public concerning the proposed plan and meeting.
 - (B) Provisions shall be made for a program of continuing public education and information regarding the drought contingency plan.
 - (C) The drought contingency plan must document coordination with the regional water planning groups for the service area of the retail public water supplier to ensure consistency with the appropriate approved regional water plans.
 - (D) The drought contingency plan must include a description of the information to be monitored by the water supplier, and specific criteria for the initiation and termination of drought response stages, accompanied by an explanation of the rationale or basis for such triggering criteria.
 - (E) The drought contingency plan must include drought or emergency response stages providing for the implementation of measures in response to at least the following situations:
 - (i) reduction in available water supply up to a repeat of the drought of record;
 - (ii) water production or distribution system limitations;
 - (iii) supply source contamination; or
 - (iv) system outage due to the failure or damage of major water system components (e.g., pumps).
 - (F) The drought contingency plan must include the specific, quantified targets for water use reductions to be achieved during periods of water shortage and drought. The entity preparing the plan shall establish the targets. The goals established by the entity under this subparagraph are not enforceable.
 - (G) The drought contingency plan must include the specific water supply or water demand management measures to be implemented during each stage of the plan including, but not limited to, the following:
 - (i) curtailment of non-essential water uses; and
 - (ii) utilization of alternative water sources and/or alternative delivery mechanisms with the prior approval of the executive director as appropriate (e.g., interconnection with another water system, temporary use of a non-municipal water supply, use of reclaimed water for non-potable purposes, etc.).
 - (H) The drought contingency plan must include the procedures to be followed for the initiation or termination of each drought response stage, including

procedures for notification of the public.

- (I) The drought contingency plan must include procedures for granting variances to the plan.
 - (J) The drought contingency plan must include procedures for the enforcement of any mandatory water use restrictions, including specification of penalties (e.g., fines, water rate surcharges, discontinuation of service) for violations of such restrictions.
- (2) Privately-owned water utilities. Privately-owned water utilities shall prepare a drought contingency plan in accordance with this section and incorporate such plan into their tariff.
- (3) Wholesale water customers. Any water supplier that receives all or a portion of its water supply from another water supplier shall consult with that supplier and shall include in the drought contingency plan appropriate provisions for responding to reductions in that water supply.
- (b) A wholesale or retail water supplier shall notify the executive director within five business days of the implementation of any mandatory provisions of the drought contingency plan.
- (c) The retail public water supplier shall review and update, as appropriate, the drought contingency plan, at least every five years, based on new or updated information, such as the adoption or revision of the regional water plan.

Source Note: The provisions of this §288.20 adopted to be effective February 21, 1999, 24 TexReg 949; amended to be effective April 27, 2000, 25 TexReg 3544; amended to be effective October 7, 2004, 29 TexReg 9384.

**APPENDIX C
TCEQ WATER UTILITY PROFILE**

	<p>Texas Commission on Environmental Quality</p> <p>UTILITY PROFILE & WATER CONSERVATION PLAN REQUIREMENTS FOR MUNICIPAL WATER USE BY PUBLIC WATER SUPPLIERS</p> <p><small>This form is provided to assist entities in water conservation plan development for municipal water use by a retail public water supplier. Information from this form should be included within a water conservation plan for municipal use. If you need assistance in completing this form or in developing your plan, please contact the conservation staff of the Resource Protection Team in the Water Supply Division at (512) 239-4691.</small></p>
---	--

Name of Entity: _____

Address & Zip: _____

Telephone Number: _____ **Fax:** _____

Form Completed By: _____

Title: _____

Signature: _____ **Date:** _____

Name and Phone Number of Person/Department responsible for implementing a water conservation program: _____

UTILITY PROFILE

I. POPULATION AND CUSTOMER DATA

A. Population and Service Area Data

1. Attach a copy of your service-area map and, if applicable, a copy of your Certificate of Convenience and Necessity (CCN).
2. Service area size (square miles): _____

3. Current population of service area: _____

4. Current population served:

a. water _____

b. wastewater _____

5. Population served by water utility for the previous five years:

6. Projected population for service area in the following decades:

Year	Population	Year	Population
_____	_____	<u>2010</u>	_____
_____	_____	<u>2020</u>	_____
_____	_____	<u>2030</u>	_____
_____	_____	<u>2040</u>	_____
_____	_____	<u>2050</u>	_____

7. List source/method for the calculation of current and projected population:

B. Active Connections

1. Current number of active connections. Check whether multi-family service is counted as Residential _____ or Commercial _____

Treated water users:	Metered	Not-metered	Total
Residential	_____	_____	_____
Commercial	_____	_____	_____
Industrial	_____	_____	_____
Other	_____	_____	_____

2. List the net number of new connections per year for most recent three years:

Year	_____	_____	_____
Residential	_____	_____	_____
Commercial	_____	_____	_____
Industrial	_____	_____	_____
Other	_____	_____	_____

C. High Volume Customers

List annual water use for the five highest volume customers
(indicate if treated or raw water delivery)

	Customer	Use (1,000gal./yr.)	Treated/Raw Water
(1)	_____	_____	_____
(2)	_____	_____	_____
(3)	_____	_____	_____
(4)	_____	_____	_____
(5)	_____	_____	_____

II. WATER USE DATA FOR SERVICE AREA

A. Water Accounting Data

1. Amount of water use for previous five years (in 1,000 gal.):

Please indicate : Diverted Water _____
 Treated Water _____

Year	_____	_____	_____	_____	_____
January	_____	_____	_____	_____	_____
February	_____	_____	_____	_____	_____
March	_____	_____	_____	_____	_____

April	_____	_____	_____	_____	_____
May	_____	_____	_____	_____	_____
June	_____	_____	_____	_____	_____
July	_____	_____	_____	_____	_____
August	_____	_____	_____	_____	_____
September	_____	_____	_____	_____	_____
October	_____	_____	_____	_____	_____
November	_____	_____	_____	_____	_____
December	_____	_____	_____	_____	_____
Total	_____	_____	_____	_____	_____

Indicate how the above figures were determined (e.g., from a master meter located at the point of a diversion from the source or located at a point where raw water enters the treatment plant, or from water sales).

2. Amount of water (in 1,000 gallons) delivered (sold) as recorded by the following account types for the past five years.

Year	Residential	Commercial	Industrial	Wholesale	Other	Total Sold
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

3. List previous five years records for water loss (the difference between water diverted (or treated) and water delivered (or sold))

Year	Amount (gal.)	%
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

4. Municipal water use for previous five years:

Year	Population	Total Water Diverted or Pumped for Treatment (1,000 gal.)
------	------------	--

_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

B. Projected Water Demands

If applicable, attach projected water supply demands for the next ten years using information such as population trends, historical water use, and economic growth in the service area over the next ten years and any additional water supply requirement from such growth.

III. WATER SUPPLY SYSTEM DATA

A. Water Supply Sources

List all current water supply sources and the amounts authorized with each:

	Source	Amount Authorized
Surface Water:	_____	_____ acre-feet
Groundwater:	_____	_____ acre-feet
Contracts:	_____	_____ acre-feet
Other:	_____	_____ acre-feet

B. Treatment and Distribution System

1. Design daily capacity of system: _____ MGD
2. Storage Capacity: Elevated _____ MGD, Ground _____ MGD
3. If surface water, do you recycle filter backwash to the head of the plant?
Yes _____ No _____. If yes, approximately _____ MGD.
4. Please attach a description of the water system. Include the number of

treatment plants, wells, and storage tanks. If possible, include a sketch of the system layout.

IV. WASTEWATER SYSTEM DATA

A. Wastewater System Data

1. Design capacity of wastewater treatment plant(s): _____ MGD
2. Is treated effluent used for irrigation on-site _____, off-site _____, plant washdown _____, or chlorination/dechlorination _____? If yes, approximately _____ gallons per month.
3. Briefly describe the wastewater system(s) of the area serviced by the water utility. Describe how treated wastewater is disposed of. Where applicable, identify treatment plant(s) with the TCEQ name and number, the operator, owner, and, if wastewater is discharged, the receiving stream. If possible, attach a sketch or map which locates the plant(s) and discharge points or disposal sites.

B. Wastewater Data for Service Area

1. Percent of water service area served by wastewater system: _____%
2. Monthly volume treated for previous three years (in 1,000 gallons):

Year	_____	_____	_____
January	_____	_____	_____
February	_____	_____	_____
March	_____	_____	_____
April	_____	_____	_____
May	_____	_____	_____
June	_____	_____	_____
July	_____	_____	_____
August	_____	_____	_____
September	_____	_____	_____
October	_____	_____	_____
November	_____	_____	_____
December	_____	_____	_____
Total	_____	_____	_____

APPENDIX D
NTMWD MEMBER CITY AND CUSTOMER ANNUAL WATER CONSERVATION REPORT

APPENDIX D
NTMWD MEMBER CITY AND CUSTOMER ANNUAL WATER CONSERVATION REPORT
 Due: March 31 of every year

Entity Reporting: _____
 Filled Out By: _____
 Date Completed: _____
 Year Covered: _____
 # of Connections _____

Recorded Deliveries and Sales by Month (in Million Gallons):

Month	Deliveries from NTMWD	Other Supplies	Sales by Category				Total
			Residential	Commercial	Public/Institutional	Industrial	
January							0.000
February							0.000
March							0.000
April							0.000
May							0.000
June							0.000
July							0.000
August							0.000
September							0.000
October							0.000
November							0.000
December							0.000
TOTAL	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Unaccounted Water (Million Gallons):

NTMWD Deliveries 0.000 from Table above
 Other Supplies 0.000 from Table above
 Total Supplies 0.000 from Table above
 Total Sales 0.000 from Table above
 Estimated Fire Use estimated from best available data
 Estimated Line Flushing Use estimated from best available data
 Unaccounted Water 0.000
 % Unaccounted #DIV/0!
 Goal for % Unaccounted 12.00%

Per Capita Municipal Use (Gallons per person per day)

Municipal Use (MG) 0.000 from Table above (NTMWD deliveries+ other supplies - industrial sales - municipal sales - other sales)

Estimated Population please describe source of population estimate

(gpcd) #DIV/0!

5-year Per Capita Goal ()

10-year Per Capita Goal ()

Recorded Wholesale Sales by Month (in Million Gallons):

Month	Sales to	Total Wholesale Sales								
January										0.000
February										0.000
March										0.000
April										0.000
May										0.000
June										0.000
July										0.000
August										0.000
September										0.000
October										0.000
November										0.000
December										0.000
TOTAL	0.000									

Information on Wholesale Customers:

Estimated

Population

Customer

Unusual Circumstances (use additional sheets if necessary):

--

Progress in Implementation of Conservation Plan (use additional sheets if necessary):

--

Conservation measures planned for next year (use additional sheets if necessary):

--

Assistance requested from North Texas Municipal Water District (use additional sheets if necessary):

--

Other (use additional sheets if necessary):

--

APPENDIX E
LANDSCAPE WATER MANAGEMENT REGULATIONS

ORDINANCE NO. 2009-5-14
(Zoning Case 2009-02)

AN ORDINANCE OF THE CITY OF PLANO, TEXAS, AMENDING SECTION 3.1200 (LANDSCAPING REQUIREMENTS) 6. (LANDSCAPE PLAN APPROVAL) C. OF ARTICLE 3 (SUPPLEMENTARY REGULATIONS) AND RELATED SECTIONS OF THE COMPREHENSIVE ZONING ORDINANCE OF THE CITY, ORDINANCE NO. 2006-4-24, AS HERETOFORE AMENDED, REGARDING THE ESTIMATION OF ANNUAL LANDSCAPE WATER REQUIREMENTS; AND PROVIDING A PENALTY CLAUSE, A REPEALER CLAUSE, A SAVINGS CLAUSE, A SEVERABILITY CLAUSE, AND AN EFFECTIVE DATE.

WHEREAS, the City Secretary of Plano, Texas, directed that notices of a hearing be issued, as required by the Zoning Ordinance of the City of Plano and laws of the State of Texas, at a meeting of the City Council, to be held on the 11th day of May, 2009, for the purpose of considering a change in the Zoning Ordinance; and

WHEREAS, the City Secretary of the said City accordingly caused to be issued and published the notices required by its Zoning Ordinance and laws of the State of Texas applicable thereto, the same having been published in a paper of general circulation in the City of Plano, Texas, at least fifteen (15) days prior to the time set for such hearing; and

WHEREAS, the City Council of said City, pursuant to such notice, held its public hearing and heard all persons wishing to be heard both for and against the aforesaid change in the Zoning Ordinance, on the 11th day of May, 2009; and

WHEREAS, the City Council is of the opinion and finds that such change would not be detrimental to the public health, safety, or general welfare, and will promote the best and most orderly development of the properties affected thereby, and to be affected thereby, in the City of Plano, and as well, the owners and occupants thereof, and the City generally.

IT IS, THEREFORE, ORDAINED BY THE CITY COUNCIL OF THE CITY OF PLANO, TEXAS, THAT:

Section 1. Section 3.1200 (Landscaping Requirements) 6. (Landscape Plan Approval) c. of Article 3 (Supplementary Regulations) of the Comprehensive Zoning Ordinance No. 2006-4-24, as the same has been heretofore amended, is hereby further amended regarding the estimation of annual landscape water requirements, and, such portion of the section to read in its entirety as follows:

6. Landscape Plan Approval

- (c) Unless otherwise requested, a full irrigation plan is not required for approval by the Planning and Engineering Departments. The only irrigation information required on the landscape plan is the following:
 - (i) The location and size of all water meters, including ones dedicated to the irrigation system, which must be located in the public right-of-way or a dedicated easement.
 - (ii) The landscape plan shall include a table showing the annual landscape water requirements for the project site by individual hydrozone and for the site as a whole (totals for all hydrozones.) A hydrozone is a contiguous landscape area containing plants with similar watering needs. Each site shall contain a minimum of two hydrozones, one for turf areas and one for prepared bed areas. Additional breakdowns may be requested after initial review of landscape plan.

The annual watering needs for each hydrozone shall be calculated using the following formula:

$$LWR = RTM \times [(ET \times K) - R] \times A/C$$

Where:

LWR = Landscape Water Requirements for each hydrozone in gallons per year.

RTM = Run Time Multiplier based upon type of irrigation head

Use the following factors:

Spray	1.33
Drip	1.25
Micro Spray	1.25
Rotor	1.25

ET = Local EvapoTranspiration rate in inches per year.

Use 55.85" as the factor

K = Landscape coefficient rate for the type of hydrozone.

Use the following factors:

Groundcovers	0.5
Shrubs	0.5
Mixture of Shrubs and Groundcover	0.5
Warm Season Turfgrass	0.6
Cool Season Turfgrass	0.8

R = 25% of annual Rainfall precipitation.
Use 8.7 (34.82 inches per year x 25%)

A = Area of hydrozone in square feet.

C = Conversion factor resulting in gallons per year.
Use 1.604

Section II. All provisions of the ordinances of the City of Plano in conflict with the provisions of this Ordinance are hereby repealed, and all other provisions of the Ordinances of the City of Plano, not in conflict with the provisions of this Ordinance, shall remain in full force and effect.

Section III. The repeal of any ordinance or part of ordinances affected by the enactment of this Ordinance shall not be construed as abandoning any action now pending under or by virtue of such ordinance or as discontinuing, abating, modifying or altering any penalty accruing or to accrue, or as affecting any rights of the municipality under any section or provisions of any ordinance at the time of passage of this Ordinance.

Section IV. Any person, firm or corporation found to be violating any term or provision of this Ordinance, shall be subject to a fine in accordance with Section 1-4(a) of the City Code of Ordinances for each offense. Every day a violation continues shall constitute a separate offense.

Section V. It is the intention of the City Council that this Ordinance, and every provision hereof, shall be considered severable and the invalidity or partial invalidity of any section, clause or provision of this Ordinance shall not affect the validity of any other portion of this Ordinance.

Section VI. This Ordinance shall become effective immediately upon its passage and publication as required by law.

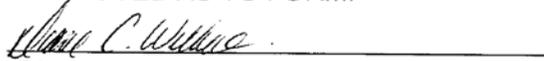
PASSED AND APPROVED THIS THE 11th DAY OF MAY, 2009.


Pat Evans, MAYOR

ATTEST:


Diane Zucco, CITY SECRETARY

APPROVED AS TO FORM:


Diane C. Wetherbee, CITY ATTORNEY

APPENDIX F WATER CONSERVATION INCENTIVE PROGRAM

The Water Conservation Incentive Program includes two components, as outlined below:

1. Free Water Conservation Items

The City of Plano offers residents free water conservation items that are available at the Customer and Utility Service counters from 8am to 5pm, Monday through Friday. Counter locations are at the Municipal Center and the Joint Use Facility.

Following is the list of items available and a description of each item:

- Low-Flow Shower Head: This self-cleaning shower head features a non-aerating spray, meaning less temperature loss and hot water energy savings.
- Shower Coach: The Shower Coach is a five-minute timer that mounts to the shower wall and helps you track every second of water use.
- Toilet Leak Detection Tablets: These dye tablets are used to check for a leak between the toilet tank and bowl.
- Toilet Flapper: Water treatment processes, toilet bowl cleaners, and high water pressure can cause replaceable toilet parts, such as the toilet flapper, to disintegrate. This item should be used to replace an existing toilet flapper if black “goo” is found to be present.
- Kitchen Faucet Aerator: By introducing air into the stream, this aerator provides an even spray pattern while saving water.
- Rain Gauge: This gauge assists the resident in determining how to adjust an outdoor irrigation schedule according to season and recent rainfall.
- Bathroom Faucet Aerator: By introducing air into the stream, the aerator provides an even spray pattern while saving water.

2. Water Conservation Rebate Program

Program Eligibility and Guidelines

Eligibility:

- All purchases must be made after March 1, 2010.
- Participant must currently own their home and have a City of Plano water utility account in good standing for the property where installation of qualifying item occurred.
- Eligibility is limited to residential homes only; commercial buildings are not eligible.
- To meet eligibility guidelines, items must be purchased from a retailer located within the City of Plano.
- The City of Plano reserves the right to terminate or modify the water conservation rebate program at any time.

Process:

- Resident mails voucher (toilet program) or application (rain barrel and rain/freeze sensor program) to City of Plano Water Conservation Rebate Program: 4200 W. Plano Parkway, Plano, TX 75093

- Completed voucher or application must be received by the City of Plano within 120 days of purchase of eligible water conserving item.
- Utility credits will be processed in the order they are received on a first-come first-served basis.
- The City issues a credit on resident's utility bill within 30 days of receipt of voucher

WaterSense Approved, High Efficiency Toilets (HET's)

Eligibility:

- Only new, qualifying WaterSense high efficiency models of toilets (HET) will be eligible for utility credit.
- New high efficiency qualifying toilet (0.8-1.6 gallons per flush) must replace a low efficiency toilet (approximately 3-7 gallons per flush). Residence must not already have high efficiency toilets (HET's) installed.
- A list of qualifying toilets can be found online at www.livegreeninplano.com

Process:

- Resident must first purchase and install qualified toilet from local retailer
- Morrison Supply has agreed to verify replacement of high flow toilet with the new HET and to collect the old toilet for recycling.
- Resident must contact Morrison Supply within 30 days of installation (no longer than 120 days from date of purchase) to verify installation.
- Morrison Supply will collect the old toilet within 30 days and issue the resident a voucher for credit on their water utility bill.
 - \$100 credit for 1st toilet
 - \$75 credit for 2nd toilet
 - \$50 credit for 3rd toilet
- Resident will complete voucher and send to City of Plano Water Conservation Rebate Program: 4200 W. Plano Parkway, Plano, TX 75093

Rain/Freeze Sensor

Eligibility:

- New irrigation systems are not eligible for this program.
- Irrigation system must not already have a rain and freeze sensor device installed.
- Only new, qualifying models of rain and freeze sensors will be eligible for rebate. A list of approved sensors can be found on www.livegreeninplano.com website.
- The City of Plano does not require an irrigation permit to retrofit an irrigation system for a rain and freeze sensor.

Process:

- Resident must select, purchase, and install rain/freeze sensor from qualifying list.
- Rain/Freeze Sensor Applications are available online at www.livegreeninplano.com

- Resident must mail in rebate application, proof of purchase, and proof of installation no later than 120 days from date of purchase. If sensor is not installed by a professional irrigation contractor, resident must submit photographic proof of installation.
- Resident will send completed application to City of Plano Water Conservation Rebate Program: 4200 W. Plano Parkway, Plano, TX 75093
- The City of Plano will issue a \$50 water utility credit to resident's utility bill.
- If required documentation has not been provided or if proof of installation cannot be determined, rebate will be denied.

Rain Barrels

- The City of Plano will issue a \$25 water utility credit for a rain barrel installation. Credits are limited to two installations per household.
- Resident must provide proof of purchase or proof of enrollment in Rain Barrel-making Workshop offered through City of Plano or Texas AgriLife.
- Must provide proof of installation in the form of invoice from installer or photograph of installed rain barrel at residence.
- Rain Barrel Rebate Applications are available online at www.livegreeninplano.com.
- Completed applications must be received by the City of Plano within 120 days of purchase of rain barrel or within 120 days of rain barrel workshop attendance.
- If required documentation has not been provided or if proof of installation cannot be determined, rebate will be denied.
- Applications should be sent to City of Plano Water Conservation Rebate Program: 4200 W. Plano Parkway, Plano, TX 75093

**APPENDIX G
TCEQ WATER CONSERVATION IMPLEMENTATION REPORT**

	Texas Commission on Environmental Quality
	Water Conservation Implementation Report
	<small>This report must be completed by entities that are required to submit a water conservation plan to the TCEQ in accordance with Title 30 Texas Administrative Code, Chapter 288. Please complete this report and submit it to the TCEQ. If you need assistance in completing this form, please contact the Resource Protection Team in the Water Supply Division at (512) 239-4691.</small>

Entity Name: _____

Address: _____

Telephone Number: _____ **Fax:** _____

Form Completed By: _____

Title: _____

Signature: _____ **Date:** _____

I. WATER USES

Indicate the type(s) of water uses (example: municipal, industrial, or agricultural).

_____ Use

_____ Use

_____ Use

II. WATER CONSERVATION MEASURES IMPLEMENTED

Provide the water conservation measures and the dates the measures were implemented.

Description of Water Conservation Measure: _____

Date Implemented: _____

Description of Water Conservation Measure: _____

Date Implemented: _____

Description of Water Conservation Measure: _____

Date Implemented: _____

Description of Water Conservation Measure: _____

Date Implemented: _____

Description of Water Conservation Measure: _____

Date Implemented: _____

Description of Water Conservation Measure: _____

Date Implemented: _____

Description of Water Conservation Measure: _____

Date Implemented: _____

Description of Water Conservation Measure: _____

Date Implemented: _____

Description of Water Conservation Measure: _____

Date Implemented: _____

III. TARGETS

- A. Provide the **specific and quantified five and ten-year targets** as listed in water conservation plan for previous planning period.

5-Year Specific/Quantified Target: _____

Date to achieve target: _____

10-Year Specific/Quantified Target: _____

Date to achieve target: _____

- B. State if these targets in the water conservation plan are being met.

- C. List the **actual amount of water saved**.

- D. If the targets are not being met, provide an explanation as to why, including any progress on the targets.

APPENDIX H
ILLEGAL WATER CONNECTIONS AND THEFT OF WATER ORDINANCE
Ordinance No. 62-3-3

Sec. 21-17. Miscellaneous offenses relating to waterworks system.

It shall be unlawful for any person to do, commit or assist in committing any of the following things or acts in the city:

- (1) Opening or closing any fire hydrant, or lifting or removing any covers of any gate valves or shut-offs connected with the waterworks system of the city, without the permission of the superintendent of the water department, except in case of fire, and then under the direction of officers of the fire department. It shall be an exception however, that a property owner or occupant may access the property's water meter box for the sole purpose of turning water on or off at the city valve;
 - (2) Interfering with, destroying, defacing, impairing, injuring, or wantonly forcing open any gate or door, or in any way whatsoever destroying, injuring, or defacing any part of any engine house, reservoir, standpipe, elevated tank, building, or appurtenances, fences, trees, shrubs, or fixtures or property appertaining to the waterworks system;
 - (3) Going upon or ascending the stairway or steps of any elevated water tank or standpipe of the waterworks system, except by permission of the waterworks superintendent;
 - (4) Placing any telegraph, telephone, electric light pole, or any obstruction whatsoever within ten (10) feet of any fire hydrant;
 - (5) Resorting to any fraudulent device or arrangement for the purpose of procuring water for himself or others from private connections or premises contrary to city regulation or ordinances;
 - (6) Interfering with or injuring any reservoir, tank, fountain, hydrant, pipe, cock, valve, or other apparatus pertaining to the waterworks system, or turning on or shutting off without authority the water in any street hydrant or other water fixture, or hitching or tying any animal thereto;
 - (7) Making or permitting to be made any connection with the main or service pipe of the waterworks system or turning on or using the water of such system without first obtaining a permit therefor;
 - (8) Covering over or concealing from view any water valve box, service or meter box;
 - (9) Removing any water meter that has been placed by the city, or changing, interfering with or tampering with any water meter in any manner; this paragraph shall not apply to employees of the city, when acting in their official capacity;
 - (10) Turning on the water supply to any building or to any supply pipe where the supply has been turned off for the nonpayment of the monthly water charges or for the violation of any rule or ordinance governing the waterworks system.
- (Ord. No. 62-3-3, § 12-12-2, 3-12-62; 92-11-22, § I, 11-9-92)

Sec. 21-18. Connection--Permit.

It shall be unlawful for any person to make any connection to the mains or pipes of the waterworks system of the city unless a permit authorizing such connection has been issued by the city secretary. Application for such permit shall be filed with the city secretary. Such application shall state fully the several and various uses for which water is wanted, giving the name of the owner of the property, the number of the lot and block, the name of the street and the house number. If the application is approved, the city secretary shall issue the permit.

(Ord. No. 62-3-3, § 12-12-3, 3-12-62)

**APPENDIX I
WATER RATE STRUCTURE**

Ordinance 2009-2-15 provides an increasing block rate structure and lists the minimum charge and base charges for all tiers for the residential and commercial/industrial water rates. The Plano water rate structure is as follows:

RESIDENTIAL Minimum Charge - Meter Size		
Meter Size	Water	Sewer
5/8 and 3/4	\$15.07	\$12.24
1 inch	\$15.07	\$12.24
1-1/2 inch	\$66.68	\$12.24
2 inch	\$.105.24	\$12.24

RESIDENTIAL CONSUMPTION CHARGES

WATER	
First 1,000 gallons	Included in minimum meter charge
1,001-5,000 gallons	\$0.35 per 1,000 gallons
All over 5,000 gallons	\$1.79 per 1,000 gallons
All over 20,000 gallons for water consumed April 1 through October 31 (on all meters, including separately metered irrigation use systems)	\$3.57 per 1,000 gallons

SEWER	
First 1,000 gallons	Included in minimum meter charge
All over 1,000 gallons	\$4.26 per 1,000 gallons
<p><u>Winter Quarter Averaging</u> - Sewer charges on residential accounts are billed based on the Winter Quarter Averages of three consecutive winter periods.</p>	

NON-RESIDENTIAL Minimum Charge - Meter Size		
Meter Size	Water	Sewer
5/8 and 3/4	\$15.07	\$12.24
1 inch	\$34.04	\$23.88
1-1/2 inch	\$66.68	\$43.19
2 inch	\$105.24	\$66.42
3 inch	\$208.02	\$128.28
4 inch	\$323.76	\$197.84
6 inch	\$645.12	\$391.19
8 inch	\$1030.75	\$582.11
10 inch	\$1,480.79	\$893.86

NON-RESIDENTIAL CONSUMPTION CHARGES

Water	
First 1,000 gallons	Included in minimum meter charge
1,001-5,000 gallons	\$0.35 per 1,000 gallons
All over 5,000 gallons	\$1.79 per 1,000 gallons
Separately metered irrigation use systems All over 20,000 gallons Consumed April 1 thru October 31 (summer)	\$3.57 per 1,000 gallons

Sewer	
First 1,000 gallons	Included in minimum meter charge
All over 1,000 gallons	\$4.26 per 1,000 gallons

Maximum charge (cap) for Evaporative Cooling Towers (separately metered) and Commercial Swimming Pools is 12,000 gallons.

There is no sewer charge for separately metered landscape irrigation systems.

APPENDIX J
ADOPTION OF WATER MANAGEMENT PLAN
Resolution No.

(Pages 58-59 Reserved for Signed Resolution
Adopting Water Management Plan)

APPENDIX K
DROUGHT CONTINGENCY & WATER EMERGENCY RESPONSE ORDINANCE
Ordinance No. 2009-10-18

ORDINANCE NO. 2009-10-18

AN ORDINANCE OF THE CITY OF PLANO, TEXAS, REPEALING ORDINANCE NO. 2006-11-18 IN ITS ENTIRETY, WHICH WAS CODIFIED AS CHAPTER 21, ARTICLE II, DIVISION 4, DROUGHT CONTINGENCY PLAN, OF THE CODE OF ORDINANCES OF THE CITY OF PLANO; ADOPTING A NEW DROUGHT CONTINGENCY PLAN TO BE CODIFIED AS CHAPTER 21, ARTICLE II, DIVISION 4 OF THE CODE OF ORDINANCES OF THE CITY OF PLANO; ESTABLISHING PROCEDURES AND CRITERIA FOR DECLARING A WATER EMERGENCY AND IMPLEMENTING AND TERMINATING DROUGHT RESPONSE STAGES; ESTABLISHING RESTRICTIONS ON CERTAIN WATER USES DURING DROUGHT RESPONSE STAGES; ESTABLISHING ADMINISTRATIVE REMEDIES AND CRIMINAL PENALTIES FOR VIOLATING THE RESTRICTIONS AND PROVISIONS FOR ENFORCEMENT OF THESE RESTRICTIONS; AND PROVIDING A REPEALER CLAUSE, A SEVERABILITY CLAUSE, A SAVINGS CLAUSE; AN EFFECTIVE DATE; AND PROVIDING FOR THE PUBLICATION OF THE CAPTION HEREOF.

WHEREAS, in August, 2004, the North Texas Municipal Water District ("NTMWD") developed a model drought contingency plan in accordance with state law and has requested all member cities to adopt this plan; and

WHEREAS, a public hearing was conducted on May 22, 2006, to require input from the public on this drought ordinance plan; and

WHEREAS, on May 22, 2006, by Ordinance No. 2006-5-23, the City Council of the City of Plano adopted a Drought Contingency Plan to be implemented in the event of a water shortage, such Ordinance was codified as Division 4, Article II, Chapter 21 of the City of Plano Code of Ordinances; and

WHEREAS, NTMWD prepared a model drought contingency and water emergency response plan in March 2008, to address current Texas Commission on Environmental Quality ("TCEQ") requirements and to replace the plan dated August 2004, and revised in April 2006; and

WHEREAS, the City of Plano has reviewed the model plan and determined those elements and activities to be included in it plan;

WHEREAS, the City Council for the City of Plano, Texas ("City Council") has determined that the current drought contingency plan created by City Ordinance No. 2006-11-18 should be repealed in its entirety and replaced with this ordinance; and

WHEREAS, the City Council hereby finds and determines that the repeal of the previous drought contingency plan and the enactment of this drought contingency plan is in the best interest of the City of Plano and its citizens and should be adopted as set forth below.

NOW THEREFORE, BE IT ORDAINED BY THE CITY CODE OF THE CITY OF PLANO, TEXAS THAT:

Section I. Ordinance No. 2006-5-23 duly passed approved by the City Council of the City of Plano, Texas, on May 22, 2006, and Ordinance No. 2007-3-10 is hereby repealed in its entirety and replaced by this ordinance.

Section II. The Drought Contingency Plan which follows the NTMWD model and complies with the regulations and requirements of the Texas Water Code and TCEQ are hereby adopted and codified as Division 4, Drought Contingency Plan, of Article II, Water, of Chapter 21, Utilities of the Code of Ordinances of the City of Plano shall read as follows:

“DIVISION 4: DROUGHT CONTINGENCY PLAN”

Sec. 21-53. Purpose and Scope

(a) The North Texas Municipal Water District (NTMWD) supplies treated water to the City of Plano, as well as other member cities and customers. A model drought contingency plan was developed by NTMWD in accordance with the regulations and requirements of the Texas Administration Code ("TAC") and the Texas Commission on Environmental Quality ("TCEQ") and consultation with its member cities. The NTMWD model plan calls for member cities and customers to adopt similar criteria and procedures for declaring a water emergency and implementing drought or emergency response stages as used by NTMWD. Member cities and customers may also adopt more stringent drought stages than NTMWD if conditions warrant. The following ordinance is written in accordance with TAC and the NTMWD's model drought contingency plan.

(b) There is hereby established a City of Plano Drought Contingency Plan (in this division called "the Plan") to provide procedures for:

- (1) Conserving the available water supply in times of drought and emergency;
- (2) Maintaining supplies for domestic water use, sanitation, and fire protection;
- (3) Protecting and preserving public health, safety, and welfare;

- (4) Minimizing the adverse impacts of water supply shortages; and
 - (5) Minimizing the adverse impacts of emergency water supply conditions.
- (c) The plan applies to:
- (1) All persons and premises within the city using water from the city's water system ("the system");
 - (2) All wholesale contract customers; and
 - (3) All retail customers who live in unincorporated areas within the city's extraterritorial jurisdiction and are served by the system.

Sec. 21-54. Exemption

The governmental use of water for essential services such as police, fire, and emergency services which is necessary to preserve or protect the health, safety and welfare of the citizens of Plano are exempt from any and all restrictions or mandates set forth in the Plan.

Sec. 21-55. Definitions

The following words, terms, and phrases, when used in this division, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

'Customer' means a person, company or other entity connected to the City's water system and contracting with the City of Plano to receive potable water service.

'Low Flow Irrigation' means irrigation systems using devices and components that emit water at a low volume and may be designed for specific types of plant material. These irrigation devices or components limit the amount and location of water being applied. Examples include micro-irrigation (emitters and drip tubes), irrigation (bubbler and low flow spray) heads used for watering trees, soaker hoses, etc.

'Foundation' means area that includes first 24" of soil from foundation slab.

'General emergency' means a condition in which the existing or projected water supply available to the city is not anticipated to meet the normal water requirements of metered water users. This condition may be the result of factors including, but

not limited to, natural emergency conditions (i.e., drought, etc.) and/or a failure of the city's or its supplier's water distribution systems.

'Landscape' means natural plant materials around buildings or on grounds (i.e., trees, shrubbery, grasses and flowers) but excludes athletic fields and high use areas.

'Landscape beds' means plants and shrubs that are separated from turf.

'North Texas Municipal Water District' or *"NTMWD"* refers to the North Texas Municipal Water District.

'Plan' refers to the City of Plano Drought Contingency Plan.

'Person' means owner, occupant, or person in control of the premises or a person authorized by the owner, occupant, or person in control of the premises.

'Potable water' means any public water supply, which has been investigated and approved by the TCEQ as satisfactory for drinking, culinary and domestic purposes.

'Public Health and Safety' means such amount of water as necessary to sustain human life, reasonable standards of hygiene and sanitation, and fire suppression.

'Putting Green' means the ground that is specially prepared for putting. The putting green is typically defined by a fine bladed grass that requires an extremely high level of maintenance to provide a smooth surface for rolling the ball when putting.

'System' means the City of Plano water works system and shall include, but not be limited to, all reservoirs, storage tanks, elevated tanks, pipelines, pumps, hydrants, meters, valves, connections, engines, and all other property and machinery used in connection with the City's water works system.

'Tee Box' means the rectangular area considered the starting place for the hole to be played. The tee box is typically defined by a grass that requires a very high level of maintenance and mowed at a low height to provide a consistent surface to begin play on the hole.

'Athletic Fields' means turf or play surfaces that are provided by government agencies for public or non-profit sporting activities and events. The athletic field is typically defined by a grass that requires a very high level of maintenance and mowed at a low height to provide a consistent and safe play surface.

'High Use Areas' means publicly owned properties that have irrigated surfaces where there is a high volume of public use and there may be a significant increase in risk and liability if surfaces are not minimally irrigated to mitigate safety hazards to users caused by lack of water.

'Ornamental Fountains' means water features used for aesthetic or cosmetic purposes only that must use, or be refilled with, potable water. This shall not include pond aerifiers and other water recycling devices used to mitigate stagnant conditions in lakes, ponds, or other natural bodies of water.

'Central Controlled Irrigation Systems' means large scale, technically advanced systems used to water large or multiple sites from a central location. This "Smart" technology can monitor and adapt system operation and irrigation run times in response to conditions in the system or surrounding areas. (weather conditions, pipe breaks, etc.) These systems may also be easily programmed to reduce flow rates or the amount of water applied to meet required reduction percentages and provide historical data or reports.

Sec. 21-56. Presumption

For purposes of enforcement of administrative remedies and criminal penalties under this ordinance, it shall be presumed that the person in actual control of the watering or irrigation devices for a premise is responsible for any violations of this ordinance. The requirement of a culpable mental state is expressly waived for any administrative or criminal penalty or remedy.

Sec. 21-57. Authority to Declare Water Emergency

(a) The City Manager or the official designee may order the implementation of a drought or water emergency response stage when one or more of the trigger conditions for that stage are met. The following actions will be taken when a drought or water emergency response stage is initiated:

- (1) The public will be notified in accordance with Sec. 21.58.
- (2) NTMWD will be notified by e-mail with a follow-up letter or fax that provides details of the reasons for initiation of the drought/water emergency response stage.
- (3) If any mandatory provisions of the drought contingency and water emergency response plan are activated, the City of Plano will notify the Executive Director of the TCEQ and the Executive Director of the NTMWD within five (5) business days.

(b) Drought contingency/water emergency response stages imposed by NTMWD action may be initiated by the City of Plano. For trigger conditions internal to the City of Plano, the City Manager or official designee may decide not to order the implementation of a drought response stage or water emergency even though one or more of the trigger criteria for the stage are met. Factors which could influence such a decision include, but are not limited to, the time of the year, weather conditions, the anticipation of replenished water supplies, or the anticipation that additional facilities will become available to meet needs. The reason for this decision should be documented.

(c) In the event of a city-wide emergency, the order shall be made by public announcement in the City within twenty-four (24) hours of implementation. In the event of an emergency of limited geographically extent, door-to-door notification shall be made by door hangers and/or in person.

Sec. 21-58. Notification and Termination of Water Emergency

(a) Notification of Water Emergency – The City of Plano will inform and educate the public about the drought contingency and water emergency response plan by the following means:

- (1) Preparing a bulletin describing the plan and making it available at city hall and other appropriate locations.
- (2) Making the plan available to the public through the City's Web site.
- (3) Including information about the drought contingency and water emergency response plan on the City's Web site.
- (4) Notifying local organizations, schools, and civic groups that staff are available to make presentations on the drought contingency and water emergency response section of the Water Management Plan (usually in conjunction with presentations on water conservation programs).
- (5) At any time that the drought contingency and water emergency response plan is activated or the drought stage or water emergency response stage changes, the City of Plano will notify local media of the issues, the drought response stage or water emergency response stage (if applicable), and the specific actions required of the public. The information will also be publicized on the City's Web site. Utility Bill inserts and direct mail to each utility customer will also be used as appropriate.

(b) Violations Following Notification - No criminal citation or administrative fee for violating any of the water use restrictions set forth in Drought or Emergency Response Stages 2, 3 or 4 will be issued until the notice of a water emergency or notice of

drought response stage has been published in at least one issue of a newspaper in general circulation in the City of Plano.

Sec. 21-59. Initiation and Termination of Drought or Emergency Response Stages

A drought is defined as an extended period of time when an area receives insufficient amounts of rainfall to replenish the water supply, causing water supply sources, in this case reservoirs, to be depleted. In the absence of drought response measures, water demands tend to increase during a drought due to the need for additional outdoor irrigation. The severity of a drought depends on the degree of depletion of supplies and on the relationship of demand to available supplies. The NTMWD considers a drought to end when all of its supply reservoirs refill to the conservation storage pool.

(a) Initiation of a Drought or Emergency Response Stage – The City Manager or Deputy City Manager in his absence is authorized to initiate a drought or emergency response stage when one or more of the criteria applicable to that stage are triggered.

(b) Notification to Public – The following actions will be taken to notify the public when a drought emergency response stage is initiated or raised.

- (1) The public will be notified of the implementation or amendment of a drought or emergency response stage in the manner set forth in Sec. 21-58 above;
- (2) Wholesale customers and the NTMWD will be notified by telephone with a follow-up letter, e-mail or facsimile transmission;
- (3) If any mandatory provisions of the drought or emergency response contingency plan are activated, notification will be sent to the Executive Director of the TCEQ within five (5) business days:

(c) Drought or Emergency Response Stages Imposed by NTMWD – The City Manager or his authorized designee may elect not to implement a drought or emergency response stage depending on all relevant factors. Factors which could influence such a decision include, but are not limited to, the time of the year, weather conditions, the anticipation of replenished water supplies, or the anticipation that additional facilities will become available to meet needs. The reason for this decision should be documented.

(d) Termination of a Drought or Emergency Response Stage – The drought or emergency response stage shall remain in effect until the City Manager or Deputy City Manager in his absence determines that the conditions that triggered the drought response stage have been alleviated or no longer exist or lake levels established by NTMWD for termination are met.

(e) Notification of Public – The following actions will be taken to notify the public when a drought or emergency response stage is terminated or lowered:

- (1) The public will be notified of the termination or lowering of a drought or emergency response stage in the manner provided in Sec. 21-58 herein;
- (2) Wholesale customers and the NTMWD will be notified by telephone with a follow-up letter, e-mail, or facsimile transmission;
- (3) If any mandatory provisions of the drought response contingency plan are terminated, the Executive Director of the TCEQ will be notified within five (5) business days.

Sec. 21-59.1 Initiation and Termination Conditions for Stage 1

The NTMWD has initiated Stage 1, which may be initiated due to one or more of the following:

- (1) The NTMWD Executive Director, with the concurrence of the NTMWD Board of Directors, finds that conditions warrant the declaration of Stage 1.
- (2) Water demand is projected to approach the limit of the permitted supply.
- (3) The storage in Lavon Lake is less than 65 percent of the total conservation pool capacity.
- (4) NTMWD's storage in Jim Chapman Lake is less than 65 percent of NTMWD's total conservation pool capacity.
- (5) The Sabine River Authority has indicated that its Upper Basin water supplies used by NTMWD (Lake Tawakoni and/or Lake Fork) are in a mild drought.
- (6) NTMWD has concern that Lake Texoma, the East Fork Raw Water Supply Project, or some other NTMWD source may be limited in availability in the next six (6) months.
- (7) NTMWD water demand exceeds 90 percent of the amount that can be delivered to customers for three (3) consecutive days.
- (8) Water demand for all or part of NTMWD's delivery system approaches delivery capacity because delivery capacity is inadequate.

- (9) NTMWD's supply source becomes contaminated.
- (10) NTMWD's water supply system is unable to deliver water due to the failure or damage of major water system components.
- (11) Plano's water demand exceeds 90 percent of the amount that can be delivered to customers for three (3) consecutive days.
- (12) Plano's water demand for all or part of the delivery system approaches delivery capacity because delivery capacity is inadequate.
- (13) Plano's supply source becomes contaminated.
- (14) Plano's water supply system is unable to deliver water due to the failure or damage of major water system components.
- (15) Other criteria as determined by the City of Plano.

(b) Stage 1 may terminate when NTMWD terminates its Stage 1 condition or when the circumstances that caused the initiation of Stage 1 no longer prevail.

Sec. 21-59.2 Goals for Use Reduction and Actions Available Under Stage 1

(a) Stage 1 is intended to raise public awareness of potential drought or water emergency problems. The goal for water use reduction under Stage 1 is a **two (2) percent reduction** in the amount of water produced by NTMWD.

(b) The City Manager or official designee may order the implementation of any of the actions listed below, as deemed necessary:

- (1) Request voluntary reductions in water use by the public and by wholesale customers.
- (2) Emphasize City's water conservation policy of restricting landscape and lawn irrigation from 10 AM to 6 PM beginning April 1 through October 31.
- (3) Increase public education efforts on ways to reduce water use.
- (4) Review the problems that caused the initiation of Stage 1.
- (5) Intensify efforts on leak detection and repair.
- (6) Reduce non-essential city government water use. (Examples include street cleaning, vehicle washing, operation of ornamental fountains, etc.)

- (7) Notify major water users and work with them to achieve voluntary water use reductions.
- (8) Reduce city government irrigation water use to meet or exceed reduction goal for the stage.
- (9) Prohibit watering areas that have been overseeded with cool season grasses (such as rye grass or other similar grasses) except for golf courses, athletic fields, erosion protection, public use areas related to public safety, and for locations using on-site well water or properly permitted on-site creek withdrawals.
- (10) Increase notification and enforcement measures to prohibit use of poorly maintained irrigation systems and correct fugitive water issues.

Sec. 21-59.3 Initiation and Termination Conditions for Stage 2

(a) The NTMWD has initiated Stage 2, which may be initiated due to one or more of the following:

- (1) The NTMWD Executive Director, with the concurrence of the NTMWD Board of Directors, finds that conditions warrant the declaration of Stage 2.
- (2) Water demand is projected to approach the limit of the permitted supply.
- (3) The storage in Lavon Lake is less than 55 percent of the total conservation pool capacity.
- (4) NTMWD's storage in Jim Chapman Lake is less than 55 percent of NTMWD's total conservation pool capacity.
- (5) NTMWD has concern that Lake Texoma, the East Fork Raw Water Supply Project, or some other NTMWD source may be limited in availability in the next 3 months.
- (6) NTMWD water demand exceeds 95 percent of the amount that can be delivered to customers for three consecutive days.
- (7) NTMWD water demand for all or part of the delivery system equals delivery capacity because delivery capacity is inadequate.
- (8) NTMWD's supply source becomes contaminated.

- (9) NTMWD's water supply system is unable to deliver water due to the failure or damage of major water system components.
- (10) Plano's water demand exceeds 95 percent of the amount that can be delivered to customers for three consecutive days.
- (11) Plano's water demand for all or part of the delivery system equals delivery capacity because delivery capacity is inadequate.
- (12) Plano's supply source becomes contaminated.
- (13) Plano's water supply system is unable to deliver water due to the failure or damage of major water system components.
- (14) Other criteria as determined by the City of Plano.

(b) Stage 2 may terminate when NTMWD terminates its Stage 2 condition or when the circumstances that caused the initiation of Stage 2 no longer prevail.

Sec. 21-59.4 Goals for Use Reduction and Actions Available Under Stage 2

(a) The goal for water use reduction under Stage 2 is a **five (5) percent reduction** in the amount of water produced by NTMWD. If circumstances warrant or if required by NTMWD, the City Manager or official designee can set a goal for greater water use reduction.

(b) The City Manager or official designee may order the implementation of any of the actions listed below, as deemed necessary.

- (1) Continue or initiate any actions available under Stage 1.
- (2) Notify wholesale customers of actions being taken and request them to implement similar procedures.
- (3) Initiate engineering studies to evaluate alternatives should conditions worsen.
- (4) Further accelerate public education efforts on ways to reduce water use.
- (5) Further reduce non-essential city government water use. (Examples include street cleaning, vehicle washing, operation of ornamental fountains, etc.)

- (6) Encourage the public to wait until the current drought or emergency situation has passed before establishing new landscaping.
- (7) Prohibit the use of treated water to fill or refill residential, amenity, and any other natural or manmade ponds. A pond is considered to be a still body of water with a surface area of five hundred (500) square feet or more.

(c) The following measures impose mandatory requirements on customers. **The City of Plano must notify TCEQ and NTMWD within five (5) business days if these measures are implemented.**

- (1) Limit landscape watering with sprinklers or irrigation systems to no more than two (2) days per week. Exceptions are as follows:
 - (i) The exemption for new sodded grass areas shall not exceed thirty (30) consecutive days from the Certificate of Occupancy date, Temporary Certificate of Occupancy date, or Certificate of Completion date for new home or building construction and shall not exceed forty-five (45) consecutive days from the time of placement of newly seeded, hydro seeded, hydro mulched, or sprigged areas in open space, common areas, or right-of-ways. This exemption shall also apply to turf renovation at athletic fields and high use areas. This exemption does not waive the requirement for compliance with other water use restrictions in the Plan. Should an exemption need to extend past these time periods, the property owner must request a variance under Sec. 21-60.2.
 - (ii) Locations using on-site well water or properly permitted creek withdrawals.
 - (iii) Registered and properly functioning central controlled irrigation system and low flow irrigation systems. Government agencies watering athletic fields, high use areas, or any other public grounds that are heavily used by the public during evening or morning hours are exempt from this watering schedule; however, public irrigation systems will be programmed to meet overall water use reduction goals of the stage. Running government irrigation systems for maintenance, testing, and calibration purposes at any time is also exempt; provided there is a maintenance technician on-site while the system is running.
- (2) Landscape watering shall comply with the following mandatory watering schedule. Watering shall take place on the days indicated based upon the location of the service address as indicated on the Watering Zone Map attached hereto as "Exhibit A."

Zone	Morning Watering Time 2:00 AM to 9:59 AM	Evening Watering Time 6:01 PM to 10:00 PM
1	Monday	Thursday
2	Friday	Tuesday
3	Saturday	Wednesday
4	Thursday	Monday
5	Tuesday	Friday
6	Wednesday	Saturday

Note: Landscape watering will be enforced as follows:

2:00 a.m. to 9:59 a.m. on assigned day watering is allowed;
10:00 a.m. to 5:59 p.m. – watering is not allowed;
6:00 p.m. to 9:59 p.m. on assigned day watering is allowed;
10:00 p.m. to 1:59 a.m. – watering is not allowed.

Except as otherwise provided herein, landscape watering is prohibited on Sunday.

- (3) Prohibit planting of cool season grasses (such as rye grass or other similar grasses) that intensify cool season water requirements.

Sec. 21-59.5 Initiation and Termination Conditions for Stage 3

(a) The NTMWD has initiated Stage 3, which may be initiated due to one or more of the following:

- (1) The NTMWD Executive Director, with the concurrence of the NTMWD Board of Directors, finds that conditions warrant the declaration of Stage 3.
- (2) Water demand is projected to approach or exceed the limit of the permitted supply.
- (3) The storage in Lavon Lake is less than forty-five (45) percent of the total conservation pool capacity.
- (4) NTMWD’s storage in Jim Chapman Lake is less than forty-five (45) percent of NTMWD’s total conservation pool capacity.
- (5) The Sabine River Authority has indicated that its Upper Basin water supplies used by NTMWD (Lake Tawakoni and/or Lake Fork) are in a Moderate drought. (Measures required by SRA under a

Moderate drought designation are similar to those under NTMWD's Stage 3).

- (6) The supply from Lake Texoma, the East Fork Raw Water Supply Project, or some other NTMWD source has become limited in availability.
- (7) NTMWD water demand exceeds ninety-eight (98) percent of the amount that can be delivered to customers for three (3) consecutive days.
- (8) NTMWD water demand for all or part of the delivery system exceeds delivery capacity because delivery capacity is inadequate.
- (9) NTMWD's supply source becomes contaminated.
- (10) NTMWD's water supply system is unable to deliver water due to the failure or damage of major water system components.
- (11) Plano's water demand exceeds ninety-eight (98) percent of the amount that can be delivered to customers for three (3) consecutive days.
- (12) Plano's water demand for all or part of the delivery system exceeds delivery capacity because delivery capacity is inadequate.
- (13) Plano's supply source becomes contaminated.
- (14) Plano's water supply system is unable to deliver water due to the failure or damage of major water system components.
- (15) Other criteria as determined by the City of Plano.

(b) Stage 3 may terminate when NTMWD terminates its Stage 3 condition or when the circumstances that caused the initiation of Stage 3 no longer prevail.

Sec. 21-59.6 Goals for Use Reduction and Actions Available Under Stage 3

(a) The goal for water use reduction under Stage 3 is a **ten (10) percent reduction** in the amount of water obtained from NTMWD. If circumstances warrant or if required by NTMWD, the City Manager or official designee can set a goal for a greater water use reduction.

(b) The City Manager or official designee must implement any action(s) required by NTMWD. In addition, the City Manager or official designee may order the implementation of any of the actions listed below, as deemed necessary.

- (1) Continue or initiate any actions available under Stages 1 and 2.
- (2) Notify wholesale customers of actions being taken and request them to implement similar procedures.
- (3) Implement viable alternative water supply strategies.

(c) The following measures impose mandatory requirements on customers. **The City of Plano must notify TCEQ and NTMWD within five (5) business days if these measures are implemented.**

- (1) Initiate mandatory water use restrictions as follows:
 - (i) Prohibit hosing of paved areas, buildings, or windows., (Pressure washing of impervious surfaces is allowed) except for outdoor public restrooms, pavilions and shelters, where public health, safety, and welfare may be compromised by unsanitary conditions if the facilities cannot be cleaned.
 - (ii) Prohibit operation of all ornamental fountains or other amenity impoundments to the extent they use treated water.
 - (iii) Prohibit washing or rinsing of vehicles by hose except with a hose end cutoff nozzle.
- (2) Limit landscape watering with sprinklers or irrigation systems at each service address to **once every seven (7) days**. Landscape watering shall comply with the following mandatory watering schedule. Watering shall take place on the day indicated based upon the location of the service address as indicated on the Watering Zone Map attached hereto as "Exhibit B."

Zone	Collection Day
1	Monday
2	Tuesday
3	Wednesday
4	Thursday
5	Friday
6	Saturday

All customers, residential and commercial, will be allowed to water as delineated by zones. Exceptions are as follows:

- (i) Foundations, new landscaping, new plantings (first year) of shrubs and trees may be watered within a ten (10) foot radius of their trunk for up to two (2) hours on any day by a hand-

- held hose, a soaker hose, or a dedicated zone using a low flow irrigation system.
- (ii) Prohibit watering of golf courses using treated water, except as needed to keep greens and tee boxes alive.
 - (iii) Government agencies watering athletic fields, high use areas, or any other public grounds that are heavily used by the public during evening or morning hours are exempt from this watering schedule; however, public irrigation systems will be programmed to meet overall water use reduction goals of the stage, and comply with watering schedules where feasible. Running government irrigation systems for maintenance, testing, and calibration purposes at any time is also exempt; provided there is a maintenance technician on-site while the system is running.
 - (iv) Locations using other sources of water supply for irrigation may irrigate without restrictions.
 - (v) Low flow irrigation systems may irrigate without restrictions.
- (3) Limit landscape watering with sprinklers or irrigation systems between November 1 and March 31 to once every two weeks. An exception is allowed for landscape associated with new construction as noted in (2)(i) above.
 - (4) Prohibit hydro seeding, hydro mulching, and sprigging.
 - (5) Existing swimming pools may not be drained and refilled (except to replace normal water loss).
 - (6) Consider a rate surcharge as requested by NTMWD.
 - (7) Initiate a rate surcharge for all water use over a certain level.
 - (8) If NTMWD has imposed a reduction in water available to Member Cities and Customers, impose the same percent reduction on wholesale customers.

Sec. 21-59.7 Initiation and Termination Conditions for Stage 4

(a) The NTMWD has initiated Stage 4, which may be initiated due to one or more of the following:

- (1) The NTMWD Executive Director, with the concurrence of the NTMWD Board of Directors, finds that conditions warrant the declaration of Stage 4.

- (2) Water demand is projected to approach or exceed the limit of the permitted supply.
- (3) The storage in Lavon Lake is less than thirty-five (35) percent of the total conservation pool capacity.
- (4) NTMWD's storage in Jim Chapman Lake is less than thirty-five (35) percent of NTMWD's total conservation pool capacity.
- (5) The Sabine River Authority has indicated that its Upper Basin water supplies used by NTMWD (Lake Tawakoni and/or Lake Fork) are in a severe drought or Emergency.
- (6) The supply from Lake Texoma, the East Fork Raw Water Supply Project, or some other NTMWD source has become severely limited in availability.
- (7) NTMWD water demand exceeds the amount that can be delivered to customers.
- (8) NTMWD water demand for all or part of the delivery system seriously exceeds delivery capacity because the delivery capacity is inadequate.
- (9) NTMWD's supply source becomes contaminated.
- (10) NTMWD's water supply system is unable to deliver water due to the failure or damage of major water system components.
- (11) Plano's water demand exceeds the amount that can be delivered to customers.
- (12) Plano's water demand for all or part of the delivery system seriously exceeds delivery capacity because the delivery capacity is inadequate.
- (13) Plano's supply source becomes contaminated.
- (14) Plano's water supply system is unable to deliver water due to the failure or damage of major water system components.
- (15) Plano is unable to recover water storage of one hundred (100) percent in all storage facilities within a twenty-four (24) hour period.
- (16) Plano's individual plan may be implemented if other criteria dictate.

(b) Stage 4 may terminate when NTMWD terminates its Stage 4 condition or when the circumstances that caused the initiation of Stage 4 no longer prevail.

Sec. 21-59.8 Goals for Use Reduction and Actions Available Under Stage 4

(a) The goal for water use reduction under Stage 4 is a **reduction of whatever amount is necessary** in the amount of water obtained from NTMWD. If circumstances warrant or if required by NTMWD, the City Manager or official designee can set a goal for a greater water use reduction.

(b) The City Manager or official designee must implement any action(s) required by NTMWD. In addition, the City Manager or official designee may order the implementation of any of the actions listed below, as deemed necessary.

- (1) Continue or initiate any actions available under Stages 1, 2, and 3.
- (2) Notify wholesale customers of actions being taken and require them to implement similar procedures.
- (3) Implement viable alternative water supply strategies.

(c) The following measures impose mandatory requirements on customers. **The City of Plano must notify TCEQ and NTMWD within five (5) business days if these measures are implemented.**

- (1) Prohibit the irrigation of new landscaping using treated water.
- (2) Prohibit washing of vehicles except as necessary for health, sanitation, or safety reasons.
- (3) Prohibit commercial and residential landscape watering, except that foundations and trees (within a ten foot radius of their trunk) may be watered for two (2) hours on any day with a hand-held hose, a soaker hose, or a dedicated zone using a low flow irrigation system. Central controlled irrigation systems and low flow irrigation systems are **not** exempt from this requirement. Water may not be trucked or otherwise transported into the City for irrigation purposes.
- (4) Prohibit the permitting of private pools. Pools already permitted may be completed and filled with water. Existing private and public pools may add water to maintain pool levels but may not be drained and refilled.
- (5) Require all commercial water users to reduce water use by a percentage established by the City Manager or official designee.
- (6) If NTMWD has imposed a reduction in water available to Member Cities and Customers, impose the same percent reduction on wholesale customers.

Sec. 21-60. Procedures for Granting Variances to the Plan

(a) The City Manager or official designee may grant temporary variances for existing water uses otherwise prohibited under this drought contingency and water emergency response plan if one or more of the following conditions are met:

- (1) Failure to grant such a variance would cause an emergency condition adversely affecting health, sanitation, or fire safety for the public or the person or entity requesting the variance.
- (2) Compliance with this plan cannot be accomplished due to technical or other limitations.
- (3) Alternative methods that achieve the same level of reduction in water use can be implemented.

(b) Variances shall be granted or denied at the discretion of the City Manager or official designee. All petitions for variances should be in writing and addressed to the Director of Public Works and Engineering. All petitions should include the following information:

- (1) Name and address of the petitioners
- (2) Purpose of water use
- (3) Specific provisions from which relief is requested
- (4) Detailed statement of the adverse effect of the provision from which relief is requested
- (5) Description of the relief requested
- (6) Period of time for which the variance is sought
- (7) Alternative measures that will be taken to reduce water use
- (8) Other pertinent information.

(c) Variances are considered temporary and must be submitted for reconsideration should the Drought and Emergency Response Stage elevate from the stage in which the temporary variance was approved to any higher stage of response.

Sec. 21-61. Criminal Penalty

Any person, firm or corporation who violates any term or provision of this Ordinance shall be deemed guilty of a misdemeanor and upon conviction thereof shall be subject to a fine in accordance with Section 1-4(b) of the City Code of Ordinances for each offense. These criminal penalties may be imposed in addition to any Administrative or Civil Remedy listed herein. Each day a violation continues shall constitute a separate offense. The requirement of a culpable mental state is expressly waived for criminal prosecution purposes.

Sec. 21-62. Administrative Remedies for Violations

The following administrative remedies are available to the City in cases of noncompliance with the provisions of this ordinance. These administrative remedies may be assessed in addition to any criminal penalty assessed for a violation of this ordinance. Each day a violation continues shall constitute a separate violation for purposes of assessing administrative remedies. The requirement of a culpable mental state is expressly waived for administrative remedies.

In the event that any person violates the provisions of this ordinance, the Director of Public Works & Engineering or his designee, shall give notice to such person setting forth the evidence of noncompliance with the restrictions outlined in stages 2, 3 and 4.

(a) In-Ground Irrigation Systems Violations**(1) Notification of Violation**

- (i) Placement of a notice flag on the premises to advise the person his double check device has been turned off and locked; and
- (ii) The City will install a locking device on the person's double check valve to the irrigation system; and
- (iii) Notice to be sent by letter delivered by United States Postal Service addressed to the person as recorded in the city's customer and utility billing records notifying that the irrigation system has been turned off and locked. The letter shall advise the person of the assessment of administrative remedies and fees. The letter shall advise the person the procedures for payment of the administrative fees and the procedure for requesting a hearing to contest the assessment of the administrative remedies.

(2) Remedy

- (i) The administrative penalty is one hundred fifty dollars (\$150) per occurrence when paid at Customer and Utility Services.

(b) Violations for Systems Without Double-Check Valves or In-Ground Irrigation Systems**(1) Violation Notification**

- (i) Placement of a notice flag on the premises to advise the person he was in violation of watering restrictions.

- (ii) Notice shall be sent by letter delivered by United States Postal Service addressed to the person as recorded in the city's customer and utility billing records notifying the person of the violation. The letter shall advise the person of the assessment of administrative fees. The letter shall advise the person the procedures for payment of the administrative fees and the procedure for requesting a hearing to contest the assessment of the administrative remedies.

(2) Remedy

- (i) The administrative penalty is one hundred fifty dollars (\$ 150.00) per occurrence when paid at Customer & Utility Services.

(c) Procedures for Paying Administrative Penalties or Requesting a Hearing on the Fees

- (1) Personal appearance by the person listed on the city's Customer & Utility Services billing records is required to re-establish service to the irrigation system. The person's government issued photo identification must be provided at time of payment or upon request for a hearing.
- (2) A person may request a hearing to protest the assessment of any administrative penalty. To request a hearing, the owner must make the request in person to the City of Plano Public Works Department within fifteen (15) business days from the date on the written notice of violation.
- (3) The Public Works Operations Manager or his designee shall conduct the hearing. The Manager shall evaluate all information offered by the petitioner at the hearing. The person making the request for a hearing shall bear the burden of proof to show why, by a preponderance of the evidence, the administrative remedy should not be assessed. The Manager will provide a decision at the time of the hearing or within three (3) business days following the conclusion of the hearing.
- (4) Payment of any penalty assessed at the hearing must be made within seven (7) business days of the decision from the hearing. Any penalty not paid within this time limit shall be added to the person's next water billing cycle;

- (5) A person may appeal the decision from the hearing to the office of the Director of Public Works & Engineering or his designee. The Director or his designee shall hear the appeal;
 - (6) The request for an appeal must be filed in writing with the office of the Director of Public Works & Engineering within three (3) business days from the notice being given by the Manager.
 - (7) The Director or his designee shall render a decision at the time of the appeal or within three (3) business days from the conclusion of the appeal.
 - (8) A person may elect to pay the administrative penalty without requesting a hearing. Any penalty not paid within fifteen (15) business days from the date on the written notice shall be added to the person's next water billing cycle.
 - (9) Unpaid penalties related to the Drought Contingency Plan can result in the termination of the domestic water services in accordance with City of Plano Code Chapter 21, Article IV, Service Charges Generally, Section 21-131(d) and the established policies and procedures of the Customer and Utility Services Department.
- (d) Re-establishment of service to double checks that have been locked-off.
- (1) The administrative penalty is to be paid at City of Plano Customer & Utility Services. The locking device will be removed within three (3) working days after notice of payment is received from Customer & Utility Services.
 - (2) Request for same day service to unlock double check will require an additional fee of forty dollars (\$40) to be paid in advance at Customer & Utility Services.
- (e) It shall be unlawful for a person to remove through the use of any means or otherwise cause damage to a lock that has been placed on a backflow prevention device by the director or his designee pursuant to this section.
- (f) *Administrative remedy for customers outside city.* The Director of Public Works & Engineering shall advise wholesale water customers outside the city limits receiving water service from the city of actions taken under the plan by telephone and/or by letter. Noncompliance with any requirement in any stage may result in termination of service and removal of meter. Prior to such termination, the wholesale water customer shall be given notice of the city's intent to terminate service and shall have five (5)

business days from the mailing of such notice to appeal the decision to the Director. Notice shall be sufficient if sent by certified mail to the last known address of the customer. If service is terminated, customer shall be liable for all costs of reinstallation. Termination of service to a wholesale water customer under this provision is subject also to the terms of any written contract between the city and the customer.”

Section III. All wholesale water contracts entered into or renewed after adoption of this ordinance, including contract extensions, shall include a provision that requires all wholesale water customers of the City to comply with the provisions of this ordinance.

Section IV. This plan shall be coordinated with the Region C Water Planning Group and with North Texas Municipal Water District, as required by TCEQ, to insure consistency with the appropriate approved regional water plan.

Section V. All provisions of the ordinances of the City of Plano, codified or uncodified, in conflict with the provisions of this Ordinance are hereby repealed upon the effective date of this Ordinance, and all other provisions of the ordinances of the City of Plano, codified or uncodified, not in conflict with the provisions of this Ordinance, shall remain in full force and effect.

Section VI. It is the intention of the City Council that this Ordinance, and every provision hereof, shall be considered severable, and the invalidity or unconstitutionality of any section, clause, provision or portion of this Ordinance shall not affect the validity or constitutionality of any other portion of this Ordinance.

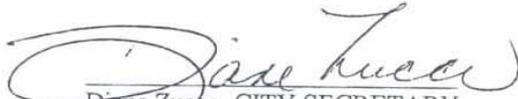
Section VII. The repeal of any ordinance or part of any ordinance effectuated by the enactment of this Ordinance shall not be construed as abandoning any action now pending under or by virtue of such ordinance or as affecting any rights of the municipality under any section or provision of any ordinance at the time of passage this Ordinance.

Section VIII. This Ordinance shall become effective from and after its passage and publication as required by law.

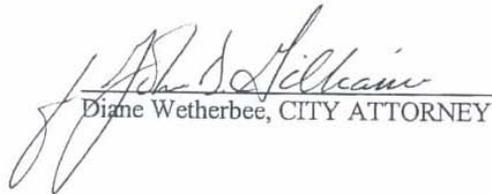
DULY PASSED AND APPROVED BY THE CITY COUNCIL OF THE CITY OF PLANO, TEXAS, on this the 26th day of October, 2009.

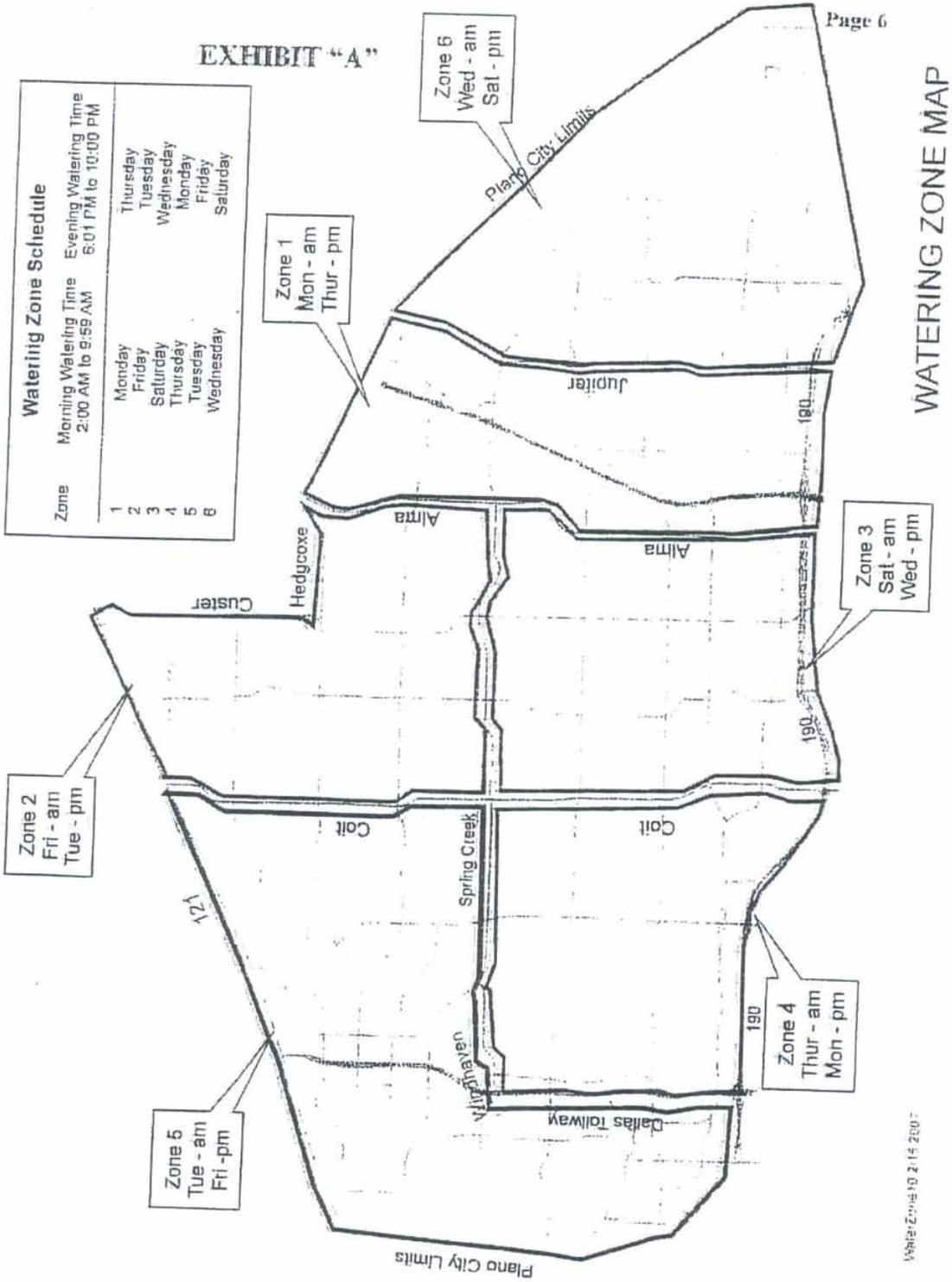

Phil Dyer, MAYOR

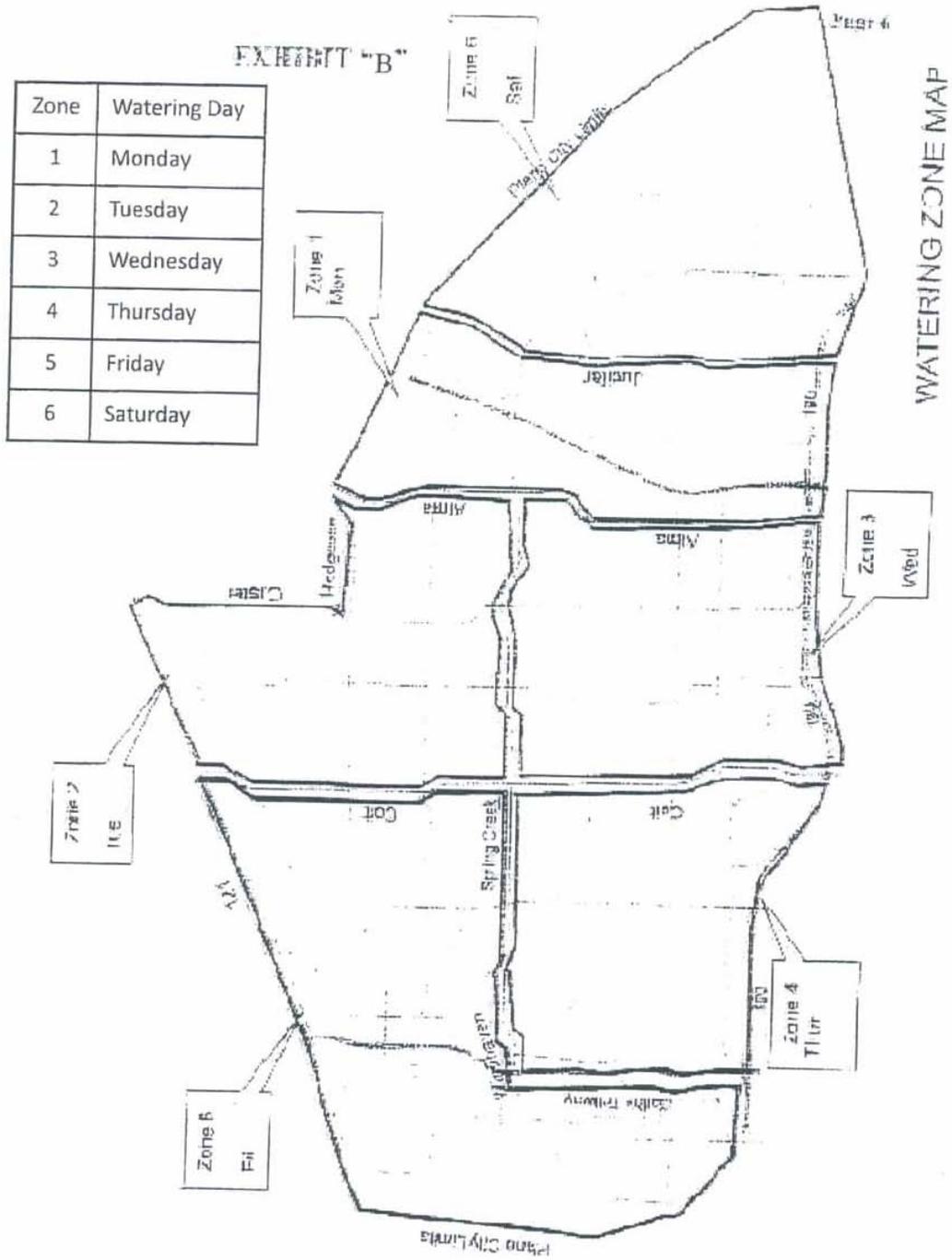
ATTESTED TO:


Diane Zuoco, CITY SECRETARY

APPROVED AS TO FORM:


Diane Wetherbee, CITY ATTORNEY





**APPENDIX L
PLUMBING CODE ORDINANCE
Ordinance No. 2008-12-4**

ORDINANCE NO. 2008-12-4

AN ORDINANCE OF THE CITY OF PLANO AMENDING CHAPTER SIX, BUILDING AND BUILDING REGULATIONS, WITH THE ADDITION OF ARTICLE XIII, IRRIGATION SYSTEMS, TO ESTABLISH THE MINIMUM STANDARDS FOR INSTALLATION OF IRRIGATION SYSTEMS WITHIN THE CITY LIMITS OF THE CITY; AND PROVIDING A REPEALER CLAUSE, A SEVERABILITY CLAUSE, A PENALTY CLAUSE AND AN EFFECTIVE DATE.

WHEREAS, the City Council of the City of Plano has determined that water conservation and environmental protection are important issues and concerns affecting the city; and,

WHEREAS, properly-installed irrigation systems will conserve water, help avoid wasteful use, and improve the overall quality of life for the citizens of Plano; and

WHEREAS, during the 2007 legislative session, the Texas Legislature adopted House Bill 1656; and

WHEREAS, House Bill 1656 amended Chapter 401 of the Texas Local Government Code to require a city with a population of over 20,000 or more to regulate the installation of irrigation systems within the corporate limits of the city and

WHEREAS, the provisions herein are necessary to promote and protect the health, safety, and welfare of the public by creating an urban environment that is protective of the city's water supply and provides an enhanced quality of life for the citizens of the City of Plano.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF PLANO, TEXAS:

Section I. Article XIII, Irrigation Systems of Chapter Six of the Code of Ordinances is hereby adopted and shall read in its entirety as follows:

ARTICLE XIII IRRIGATION SYSTEMS

Sec. 6-561 Definitions

The following words and terms have the following meanings, unless the context clearly indicates otherwise.

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- (1) **Air gap separation (AG)**--A complete physical separation between the free flowing discharge end of a potable water supply pipeline and an open or non-pressure receiving vessel.
- (2) **Atmospheric Vacuum Breaker (AVB)**—An assembly containing a float check, a check seat, and an air inlet port. Atmospheric Vacuum Breakers shall not be subjected to back pressure situations.
- (3) **Auxiliary Water Supply**- Any water supply other than the City of Plano's approved public water supply, including water from another public water supply or from a natural source including, but not limited to, wells, cisterns, springs, rivers, streams, used waters, or industrial fluids.
- (4) **Backflow prevention**--The mechanical prevention of reverse flow, or back siphonage, of nonpotable water from an irrigation system into the potable water source.
- (5) **Backflow prevention assembly**—An assembly which, when properly installed between the City water supply system and the terminus or point of ultimate use will prevent backflow. Examples of such include, but are not limited to, reduced pressure backflow assemblies, double check valve assemblies, pressure vacuum breakers, and air gap separation.
- (6) **City**- The City of Plano, Texas and its duly authorized representatives.
- (7) **Commission** – The Commission on Environmental Quality.
- (8) **Completion of irrigation system installation**--When the landscape irrigation system has been installed, all minimum standards met, all tests performed, and the irrigator is satisfied that the system is operating correctly.
- (9) **Consulting**--The act of providing advice, guidance, review or recommendations related to landscape irrigation systems.
- (10) **Cross-connection**—A physical connection between a public water system and either another supply of unknown or questionable quality, any source which may contain contaminating or polluting substances, or any source of water treated to a lesser degree than approved or auxiliary water supply source in the treatment process.
- (11) **Design**--The act of determining the various elements of a landscape irrigation system that will include, but not be limited to, elements such as collecting site specific information, defining the scope of the project, defining plant watering needs, selecting and laying out emission devices, locating system components, conducting hydraulics calculations, identifying any local

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regulatory requirements, or scheduling irrigation work at a site. Completion of the various components will result in an irrigation plan.

(12) **Design pressure**--The pressure that is required for an emission device to operate properly. Design pressure is calculated by adding the operating pressure necessary at an emission device to the total of all pressure losses accumulated from an emission device to the water source.

(13) **Double Check Valve (DC)**—An assembly composed of two independently acting, approved check valves, including tightly closing resilient seated shutoff valves attached at each end of the assembly and fitted with properly located resilient-seated test cocks.

(14) **Emission device**--Any device that is contained within an irrigation system and that is used to apply water. Common emission devices in an irrigation system include, but are not limited to, spray and rotary sprinkler heads, and drip irrigation emitters.

(15) **Employed**--Engaged or hired to provide consulting services or perform any activity relating to the sale, design, installation, maintenance, alteration, repair, or service to irrigation systems. A person is employed if that person is in an employer-employee relationship as defined by Internal Revenue Code, 26 United States Code Service, §3212(d) based on the behavioral control, financial control, and the type of relationship involved in performing employment related tasks.

(16) **Head-to-head spacing**--The spacing of spray or rotary heads equal to the manufacturers published radius of the head.

(17) **Health hazard**—A cross connection, potential cross connection, or other situation involving any substance that could cause death, illness, spread of disease, or has a high probability of causing such effects if introduced into the potable drinking water supply.

(18) **Hydraulics**--The science of dynamic and static water; the mathematical computation of determining pressure losses and pressure requirements of an irrigation system.

(19) **Inspector**--A licensed plumbing inspector, water district operator, other governmental entity, or irrigation inspector who inspects irrigation systems and performs other enforcement duties for a municipality or water district as an employee or as a contractor.

(20) **Installer**--A person who actually connects an irrigation system to a private or public raw or potable water supply system or any water supply, who is licensed according to Title 30, Texas Administrative Code, Chapter 30 (relating to Occupational Licenses and Registrations).

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(21) **Irrigation inspector**--A person who inspects irrigation systems and performs other enforcement duties for a municipality or water district as an employee or as a contractor and is required to be licensed under Title 30, Texas Administrative Code, Chapter 30 (relating to Occupational Licenses and Registrations).

(22) **Irrigation plan**--A scaled drawing of a landscape irrigation system which lists required information, the scope of the project, and represents the changes made in the installation of the irrigation system.

(23) **Irrigation services**--Selling, designing, installing, maintaining, altering, repairing, servicing, permitting, providing consulting services regarding, or connecting an irrigation system to a water supply.

(24) **Irrigation system**--An assembly of component parts that is permanently installed for the controlled distribution and conservation of water to irrigate any type of landscape vegetation in any location, and/or to reduce dust or control erosion. This term does not include a system that is used on or by an agricultural operation as defined by Texas Agricultural Code, §251.002.

(25) **Irrigation technician**--A person who works under the supervision of a licensed irrigator to install, maintain, alter, repair, service or supervise installation of an irrigation system, including the connection of such system in or to a private or public, raw or potable water supply system or any water supply, and who is required to be licensed under Title 30, Texas Administrative Code, Chapter 30 (relating to Occupational Licenses and Registrations).

(26) **Irrigation zone**--A subdivision of an irrigation system with a matched precipitation rate based on plant material type (such as turf, shrubs, or trees), microclimate factors (such as sun/shade ratio), topographic features (such as slope) and soil conditions (such as sand, loam, clay, or combination) or for hydrological control.

(27) **Irrigator**--A person who sells, designs, offers consultations regarding, installs, maintains, alters, repairs, services or supervises the installation of an irrigation system, including the connection of such system to a private or public, raw or potable water supply system or any water supply, and who is required to be licensed under Title 30, Texas Administrative Code, Chapter 30.

(28) **Irrigator-in-Charge**--The irrigator responsible for all irrigation work performed by an exempt business owner, including, but not limited to obtaining permits, developing design plans, supervising the work of other irrigators or irrigation technicians, and installing, selling, maintaining, altering, repairing, or servicing a landscape irrigation system.

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(29) **Landscape irrigation**--The science of applying the necessary amount of water to promote or sustain healthy growth of plant material or turf.

(30) **License**--An occupational license that is issued by the commission under Title 30, Texas Administrative Code, Chapter 30 to an individual that authorizes the individual to engage in an activity that is covered by Title 30, Texas Administrative Code, Chapter 30.

(31) **Mainline**--A pipe within an irrigation system that delivers water from the water source to the individual zone valves.

(32) **Maintenance checklist**--A document made available to the irrigation system's owner or owner's representative that contains information regarding the operation and maintenance of the irrigation system, including, but not limited to: checking and repairing the irrigation system, setting the automatic controller, checking the rain or moisture sensor, cleaning filters, pruning grass and plants away from irrigation emitters, using and operating the irrigation system, the precipitation rates of each irrigation zone within the system, any water conservation measures currently in effect from the water purveyor, the name of the water purveyor, a suggested seasonal or monthly watering schedule based on current evapotranspiration data for the geographic region, and the minimum water requirements for the plant material in each zone based on the soil type and plant material where the system is installed.

(33) **Major maintenance, alteration, repair, or service**--Any activity that involves opening to the atmosphere the irrigation main line at any point prior to the discharge side of any irrigation zone control valve. This includes, but is not limited to, repairing or connecting into a main supply pipe, replacing a zone control valve, or repairing a zone control valve in a manner that opens the system to the atmosphere.

(34) **Master valve**--A remote control valve located after the backflow prevention device that controls the flow of water to the irrigation system mainline.

(35) **Matched precipitation rate**--The condition in which all sprinkler heads within an irrigation zone apply water at the same rate.

(36) **New installation**--An irrigation system installed at a location where one did not previously exist.

(37) **Non-health hazard**--A cross-connection or potential cross connection involving any substance that generally would not be a health hazard but would constitute a nuisance, or be aesthetically objectionable, if introduced into the potable water supply.

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- (38) **Non-potable water**—A water supply, which has not been approved, for human consumption by the commission.
- (39) **Pass-through contract**--A written contract between a contractor or builder and a licensed irrigator or exempt business owner to perform part or all of the irrigation services relating to an irrigation system.
- (40) **Potable water**—Any public water supply which has been investigated and approved by the commission as satisfactory for drinking, culinary and domestic purposes.
- (41) **Pressure Vacuum Breaker**—An assembly which contains an independently operating internally loaded check valve and an independently operating loaded air inlet valve located on the discharge side of the check valve, with properly located resilient-seated test cocks and tightly closing resilient-seated shutoff valves attached at each end of the assembly. Pressure vacuum breakers shall not be subjected to back pressure situations.
- (42) **Reclaimed water**--Domestic or municipal wastewater which has been treated to a quality suitable for beneficial use, such as landscape irrigation.
- (43) **Records of landscape irrigation activities**—The irrigation plans, contracts, warranty information, invoices, copies of permits, and other documents that relate to the installation, maintenance, alteration, repair, or service of a landscape irrigation system.
- (44) **Reduced Pressure Principle Backflow Prevention Assembly (RP)** – an assembly containing two independently acting approved check vales together with a hydraulically operating, mechanically independent pressure differential relief valve located between the check valves and at the same time below the first check valve. The unit includes properly located resilient-seated test cocks and two tightly-closing resilient seated shutoff valves at each end of the assembly.
- (45) **Static water pressure**--The pressure of water when it is not moving.
- (46) **Supervision**--The on-the-job oversight and direction by a licensed irrigator who is fulfilling his or her professional responsibility to the client and/or employer in compliance with local or state requirements. Also a licensed installer working under the direction of a licensed irrigator or beginning January 1, 2009, an irrigation technician who is working under the direction of a licensed irrigator to install, maintain, alter, repair or service an irrigation system.
- (47) **Water conservation**--The design, installation, service, and operation of an irrigation system in a manner that prevents the waste of water, promotes the most efficient use of water, and

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applies the least amount of water that is required to maintain healthy individual plant material or turf, reduce dust, and control erosion.

(48) **Zone flow**--A measurement, in gallons per minute or gallons per hour, of the actual flow of water through a zone valve, calculated by individually opening each zone valve and obtaining a valid reading after the pressure has stabilized. For design purposes, the zone flow is the total flow of all nozzles in the zone at a specific pressure.

(49) **Zone valve**--An automatic valve that controls a single zone of a landscape irrigation system.

Sec. 6-562 Valid License Required

Any person who connects an irrigation system to the water supply within the city must hold a valid irrigation license, as defined by Chapter 30, Title 30 of the Texas Administrative Code and required by Chapter 1903 of the Texas Occupations Code, or a Texas State Plumbing License.

Exception

A property owner is not required to be licensed in accordance with Texas Occupations Code, Title 12, §1903.002(c)(1) if he or she is performing irrigation work in a building or on a premises owned or occupied by the person as the person's home. A home or property owner who installs an irrigation system must meet the standards contained in Title 30, Texas Administrative Code, Chapter 344 regarding spacing, water pressure, spraying water over impervious materials, rain or moisture shut-off devices or other technology, backflow and isolation valves. The city may, at any point, adopt more stringent requirements for a home or property owner who installs an irrigation system (see Texas Occupation Code § 1903.002 for other exemptions to the licensing requirement)

Sec. 6-563 Permit Required

It shall be unlawful for any person to install or cause to be installed, or to permit any person to install an irrigation system, or to make any alterations, additions or changes to an irrigation system, without first having procured a permit to do so from the building official. Any plan approved for a permit must be in compliance with the requirements of this chapter.

Exemptions:

1. *An irrigation system that is an on-site sewage disposal system, as defined by Section 355.002 Health and Safety Code; or*
2. *An irrigation system used on or by an agricultural operation as defined by Section 251.002 , Agriculture Code; or*

3. *An irrigation system connected to a groundwater well used by the property owner for domestic use.*

Sec. 6-564 Backflow Prevention Methods and Devices

(a) Any irrigation system that is connected to the potable water supply must be connected through a backflow prevention method approved by the Texas Commission on Environmental Quality (TCEQ). The backflow prevention device must be approved by the American Society of Sanitary Engineers; or the Foundation for Cross-Connection Control and Hydraulic Research, University of Southern California; or any other laboratory that has equivalent capabilities for both the laboratory and field evaluation of backflow prevention assemblies. The backflow prevention device must be installed in accordance with the laboratory approval standards or if the approval does not include specific installation information, the manufacturer's current published recommendations.

(b) If conditions that present a health hazard exist, one of the following methods must be used to prevent backflow:

- (1) An air gap may be used if:
 - (A) there is an unobstructed physical separation; and
 - (B) the distance from the lowest point of the water supply outlet to the flood rim of the fixture or assembly into which the outlet discharges is at least one inch or twice the diameter of the water supply outlet, whichever is greater.
- (2) Reduced pressure principle backflow prevention assemblies may be used if:
 - (A) the assembly is installed with the termination point a minimum of twelve (12) inches above finished grade in a location that will ensure that the assembly will not become submerged; and
 - (B) drainage is provided for any water that may be discharged through the assembly relief valve.
- (3) Pressure vacuum breakers may be used if:
 - (A) no back-pressure condition will occur; and
 - (B) the device is installed at a minimum of 12 inches above any downstream piping and the highest downstream opening. Pop-up sprinklers are measured from the retracted position from the top of the sprinkler.
- (4) Atmospheric vacuum breakers may be used if:
 - (A) no back-pressure will be present;
 - (B) there are no shutoff valves downstream from the atmospheric vacuum breaker;
 - (C) the device is installed at a minimum of six inches above any downstream piping and the highest downstream opening. Pop-up sprinklers are measured from the retracted position from the top of the sprinkler;
 - (D) there is no continuous pressure on the supply side of the atmospheric vacuum breaker for more than 12 hours in any 24-hour period; and
 - (E) a separate atmospheric vacuum breaker is installed on the discharge side of each irrigation control valve, between the valve and all the emission devices that the valve controls.

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(c) Backflow prevention assemblies used in applications designated as health hazards must be tested upon installation and annually thereafter.

(d) If there are no conditions that present a health hazard, double check valve backflow prevention assemblies may be used to prevent backflow if the device is tested upon installation and test cocks are used for testing only.

(e) If a double check valve is installed below ground:

- (1) test cocks must be plugged, except when the double check valve is being tested;
- (2) test cock plugs must be threaded, water-tight, and made of non-ferrous material;
- (3) a y-type strainer is installed on the inlet side of the double check valve;
- (4) there must be a clearance between any fill material and the bottom of the double check valve to allow space for testing and repair; and
- (5) there must be space on the side of the double check valve to test and repair the double check valve.

(f) If an existing irrigation system without a backflow-prevention assembly requires major maintenance, alteration, repair, or service, the system must be connected to the potable water supply through an approved, properly installed backflow prevention method before any major maintenance, alteration, repair, or service is performed.

(g) The irrigator shall ensure the backflow prevention device is tested prior to being placed into service and the test results provided to the local water purveyor and the irrigation system's owner or owner's representative within ten business days of testing of the backflow prevention assembly.

(h) The City is not responsible for any pressure loss created by the installation of a backflow assembly.

Sec 6-565 Specific Conditions and Cross-Connection Control

(a) Before any chemical is added to an irrigation system connected to the potable water supply, the irrigation system must be connected through a reduced pressure principle backflow prevention assembly or air gap.

(b) Connection of any auxiliary water supply to an irrigation system that is connected to the potable water supply can only be done if the irrigation system is connected to the potable water supply through a reduced pressure backflow prevention assembly or an air gap separation.

(c) Irrigation system components with chemical additives induced by aspiration, injection, or emission system connected to any potable water supply must be connected through a reduced pressure principle backflow assembly.

(d) If an irrigation system is designed or installed on a property that is served by an on-site sewage facility, as defined in Chapter 285 of Title 30, Texas Administrative Code, then:

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- (1) all irrigation piping and valves must meet the separation distances from the On-Site Sewage Facilities system as required for a private water line in Texas Administrative Code, Title 30, Section 285.91(10);
- (2) any connections using a private or public potable water source that is not the city's potable water system must be connected to the water source through a reduced pressure principle backflow prevention assembly as defined in Texas Administrative Code, Title 30, Section 344.50; and
- (3) any water from the irrigation system that is applied to the surface of the area utilized by the On-Site Sewage Facility system must be controlled on a separate irrigation zone or zones so as to allow complete control of any irrigation to that area so that there will not be excess water that would prevent the On-Site Sewage Facilities system from operating effectively.

(e) Quick couplers or hose connections of any type installed within the irrigation system shall require the proper installation of a reduced pressure backflow prevention assembly. The assembly shall be tested upon installation and annually thereafter.

Sec. 6-566 Water Conservation

All irrigation systems shall be designed, installed, maintained, altered, repaired, serviced, and operated in a manner that will promote water conservation as defined in the Definitions section of this ordinance.

Sec. 6-567 Irrigation Plan Design: Minimum Standards

(a) An irrigator shall prepare an irrigation plan for each site where a new irrigation system will be installed. A paper or electronic copy of the irrigation plan must be on the job site at all times during the installation of the irrigation system. A drawing showing the actual installation of the system is due to each irrigation system owner after all new irrigation system installations. During the installation of the irrigation system, variances from the original plan may be authorized by the licensed irrigator if the variance from the plan does not:

- (1) diminish the operational integrity of the irrigation system;
- (2) violate any requirements of this ordinance; and
- (3) go unnoted in red on the irrigation plan.

(b) The irrigation plan must include complete coverage of the area to be irrigated. If a system does not provide complete coverage of the area to be irrigated, it must be noted on the irrigation plan.

(c) All irrigation plans used for construction must be drawn to scale. The plan must include, at a minimum, the following information:

- (1) the irrigator's seal, signature, and date of signing;

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- (2) all major physical features and the boundaries of the areas to be watered;
- (3) a North arrow;
- (4) a legend;
- (5) the zone flow measurement for each zone;
- (6) location and type of each:
 - (A) controller;
 - (B) sensor (for example, but not limited to, rain, moisture, wind, flow, or freeze);
- (7) location, type, and size of each:
 - (A) water source, such as, but not limited to a water meter and point(s) of connection;
 - (B) backflow prevention assembly;
 - (C) water emission device, including, but not limited to, spray heads, rotary sprinkler heads, quick-couplers, bubblers, drip, or micro-sprays;
 - (D) valve, including but not limited to, zone valves, master valves, and isolation valves;
 - (E) pressure regulation component; and
 - (F) main line and lateral piping.
- (8) the scale used; and
- (9) the design pressure.

Sec. 6-568 Design and Installation: Minimum Requirements

- (a) No irrigation design or installation shall require the use of any component, including the water meter, in a way which exceeds the manufacturer's published performance limitations for the component.
- (b) Spacing.
 - (1) The maximum spacing between emission devices must not exceed the manufacturer's published radius or spacing of the device(s). The radius or spacing is determined by referring to the manufacturer's published specifications for a specific emission device at a specific operating pressure.
 - (2) New irrigation systems shall not utilize above-ground spray emission devices in landscapes that are less than 48 inches not including the impervious surfaces in either length or width and which contain impervious pedestrian or vehicular traffic surfaces along two or more perimeters. If pop-up sprays or rotary sprinkler heads are used in a new irrigation system, the sprinkler heads must direct flow away from any adjacent surface and shall not be installed closer than four inches from a hardscape, such as, but not limited to, a building foundation, fence, concrete, asphalt, pavers, or stones set with mortar.
 - (3) Narrow paved walkways, jogging paths, golf cart paths or other small areas located in cemeteries, parks, golf courses or other public areas may be exempted from this requirement if the runoff drains into a landscaped area.

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(c) Water pressure. Emission devices must be installed to operate at the minimum and not above the maximum sprinkler head pressure as published by the manufacturer for the nozzle and head spacing that is used. Methods to achieve the water pressure requirements include, but are not limited to, flow control valves, a pressure regulator, or pressure compensating spray heads.

(d) Piping. Piping in irrigation systems must be designed and installed so that the flow of water in the pipe will not exceed a velocity of five feet per second for polyvinyl chloride (PVC) pipe.

(e) Irrigation Zones. Irrigation systems shall have separate zones based on plant material type, microclimate factors, topographic features, soil conditions, and hydrological requirements.

(f) Matched precipitation rate. Zones must be designed and installed so that all of the emission devices in that zone irrigate at the same precipitation rate.

(g) Irrigation systems shall not spray water over surfaces made of concrete, asphalt, brick, wood, stones set with mortar, or any other impervious material, such as, but not limited to, walls, fences, sidewalks, streets, etc.

(h) Master valve. When provided, a master valve shall be installed on the discharge side of the backflow prevention device on all new installations.

(i) PVC pipe primer solvent. All new irrigation systems that are installed using PVC pipe and fittings shall be primed with a colored primer prior to applying the PVC cement in accordance with the International Plumbing Code (Section 605).

(j) Rain or moisture shut-off devices or other technology. All new automatically controlled irrigation systems must include sensors or other technology designed to inhibit or interrupt operation of the irrigation system during periods of moisture or rainfall. Rain or moisture shut-off technology must be installed according to the manufacturer's published recommendations. Repairs to existing automatic irrigation systems that require replacement of an existing controller must include a sensor or other technology designed to inhibit or interrupt operation of the irrigation system during periods of moisture or rainfall

(k) Isolation valve. All new irrigation systems must include an isolation valve between the water meter and the backflow prevention assembly.

(l) Depth coverage of piping. Piping in all irrigation systems must be installed according to the manufacturer's published specifications for depth coverage of piping.

(1) If the manufacturer has not published specifications for depth coverage of piping, the piping must be installed to provide minimum depth coverage of six inches of select backfill,

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between the top of the pipe and the natural grade of the topsoil. All portions of the irrigation system that fail to meet this standard must be noted on the irrigation plan. If the area being irrigated has rock at a depth of six inches or less, select backfill may be mounded over the pipe. Mounding must be noted on the irrigation plan and discussed with the irrigation system owner or owner's representative to address any safety issues.

(2) If a utility, man-made structure or roots create an unavoidable obstacle, which makes the six-inch depth coverage requirement impractical, the piping shall be installed to provide a minimum of two inches of select backfill between the top of the pipe and the natural grade of the topsoil.

(3) All trenches and holes created during installation of an irrigation system must be backfilled and compacted to the original grade.

(m) Wiring irrigation systems.

(1) Underground electrical wiring used to connect an automatic controller to any electrical component of the irrigation system must be listed by Underwriters Laboratories as acceptable for burial underground.

(2) Electrical wiring that connects any electrical components of an irrigation system must be sized according to the manufacturer's recommendation.

(3) Electrical wire splices which may be exposed to moisture must be waterproof as certified by the wire splice manufacturer.

(4) Underground electrical wiring that connects an automatic controller to any electrical component of the irrigation system must be buried with a minimum of six inches of select backfill.

(n) Water contained within the piping of an irrigation system is deemed to be non-potable. No drinking or domestic water usage, such as, but not limited to, filling swimming pools or decorative fountains, shall be connected to an irrigation system. If a hose bib (an outdoor water faucet that has hose threads on the spout) is connected to an irrigation system for the purpose of providing supplemental water to an area, the hose bib must be installed using a quick coupler key on a quick coupler installed in a covered purple valve box and the hose bib and any hoses connected to the bib must be labeled "non potable, not safe for drinking." An isolation valve must be installed upstream of a quick coupler connecting a hose bib to an irrigation system.

(o) Beginning January 1, 2010, either a licensed irrigator or a licensed irrigation technician shall be on-site at all times while the landscape irrigation system is being installed. When an irrigator is not onsite, the irrigator shall be responsible for ensuring that a licensed irrigation technician is on-site to supervise the installation of the irrigation system.

Sec. 6-569 Completion of Irrigation System Installation

Upon completion of the irrigation system, the irrigator or irrigation technician who provided supervision for the on-site installation shall be required to complete four items:

- (1) A final "walk through" with the irrigation system's owner or the owner's representative to explain the operation of the system;
- (2) The maintenance checklist on which the irrigator or irrigation technician shall obtain the signature of the irrigation system's owner or owner's representative and shall sign, date, and seal the checklist. If the irrigation system's owner or owner's representative is unwilling or unable to sign the maintenance checklist, the irrigator shall note the time and date of the refusal on the irrigation system's owner or owner's representative's signature line. The irrigation system owner or owner's representative will be given the original maintenance checklist and a duplicate copy of the maintenance checklist shall be maintained by the irrigator. The items on the maintenance checklist shall include but are not limited to:
 - (A) the manufacturer's manual for the automatic controller, if the system is automatic;
 - (B) a seasonal (spring, summer, fall, winter) watering schedule based on either current/real time evapotranspiration or monthly historical reference evapotranspiration (historical ET) data, monthly effective rainfall estimates, plant landscape coefficient factors, and site factors;
 - (C) a list of components, such as the nozzle, or pump filters, and other such components; that require maintenance and the recommended frequency for the service; and
 - (D) the statement, "This irrigation system has been installed in accordance with all applicable state and local laws, ordinances, rules, regulations or orders. I have tested the system and determined that it has been installed according to the Irrigation Plan and is properly adjusted for the most efficient application of water at this time."
- (3) A permanent sticker which contains the irrigator's name, license number, company name, telephone number and the dates of the warranty period shall be affixed to each automatic controller installed by the irrigator or irrigation technician. If the irrigation system is manual, the sticker shall be affixed to the original maintenance checklist. The information contained on the sticker must be printed with waterproof ink and include:
- (4) The irrigation plan indicating the actual installation of the system must be provided to the irrigation system's owner or owner representative.

Sec. 6-570 Maintenance, Alteration, Repair, or Service of Irrigation Systems

(a) The licensed irrigator is responsible for all work that the irrigator performed during the maintenance, alteration, repair, or service of an irrigation system during the warranty period. The irrigator or business owner is not responsible for the professional negligence of any other irrigator who subsequently conducts any irrigation service on the same irrigation system.

(b) All trenches and holes created during the maintenance, alteration, repair, or service of an irrigation system must be returned to the original grade with compacted select backfill.

(c) Colored PVC pipe primer solvent must be used on all pipes and fittings used in the maintenance, alteration, repair, or service of an irrigation system in accordance with the International Plumbing Code (Section 605).

(d) When maintenance, alteration, repair or service of an irrigation system involves excavation work at the water meter or backflow prevention device, an isolation valve shall be installed, if an isolation valve is not present.

Sec 6-571 Reclaimed Water

Reclaimed water may be utilized in landscape irrigation systems if:

- (1) there is no direct contact with edible crops, unless the crop is pasteurized before consumption;*
- (2) the irrigation system does not spray water across property lines that do not belong to the irrigation system's owner;*
- (3) the irrigation system is installed using purple components;*
- (4) the domestic potable water line is connected using an air gap or a reduced pressure principle backflow prevention device, in accordance with §290.47(i) of this title (relating to Appendices);*
- (5) a minimum of an eight inch by eight inch sign, in English and Spanish, is prominently posted on/in the area that is being irrigated, that reads, "RECLAIMED WATER – DO NOT DRINK" and "AGUA DE RECUPERACIÓN – NO BEBER"; and*
- (6) backflow prevention on the reclaimed water supply line shall be in accordance with the regulations of the city's water provider.*

Sec. 6-572 Items not covered by this ordinance

Any item not covered by this ordinance and required by law shall be governed by the Texas Occupations Code, the Texas Water Code, Title 30 of the Texas Administrative Code, and any other applicable state statute or TCEQ rule.

Sec. 6-573 Fees

Prior to issuance of a permit the applicant shall pay a permit fee in accordance with the City of Plano Building Inspections Fee Schedule as adopted by the city council, as it exists or may be amended.

Sec. 6-574 Enforcement

(a) The city shall have the power to administer and enforce the provisions of this chapter as may be required by governing law. Any person, firm, corporation or agent who shall violate a provision of this code, or fails to comply therewith, or with any of the requirements thereof, is subject to suit for injunctive relief as well as prosecution for criminal violations.

(b) Any person, firm or corporation found to be violating any term or provision of this Ordinance, shall be subject to a fine in accordance with Section 1-4(a) of the City Code of Ordinance for each offense. Every day a violation continues shall constitute a separate offense. An offense under this chapter is a Class C misdemeanor.

(c) Nothing in this chapter shall be construed as a waiver of the city's right to bring a civil action to enforce the provisions of this chapter and to seek remedies as allowed by law, including, but not limited to the following:

- (1) Injunctive relief to prevent specific conduct that violates the ordinance or to require specific conduct that is necessary for compliance with the ordinance; and
- (2) Other available relief.

Section II. All provisions of the Code of Ordinances of the City of Plano in conflict with the provision of this Ordinance are hereby repealed, and all other provision of the Code of Ordinances of the City of Plano, not in conflict with the provisions of this Ordinance, shall remain in full force and effect.

Section III. It is the intention of the City Council that this Ordinance, and every provision thereof, shall be considered severable, and the invalidity or unconstitutionality of any section, clause, provision or portion of this Ordinance shall not affect the validity or constitutionality of any other portion of this Ordinance.

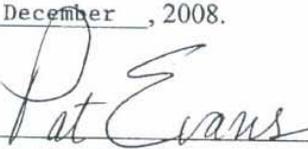
Section IV. The repeal of any Ordinance or part of Ordinances effectuated by the enactment of this Ordinance shall not be construed as abandoning any action now pending under or by virtue of such Ordinance or as discontinuing, abating, modifying or altering any penalty accruing or to accrue, or as affecting any rights of the municipality under any section or provisions of any Ordinances at the time of passage of this Ordinance.

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Section V. Any person, firm or corporation found to be violating any term or provision of this Ordinance, shall be subject to a fine in accordance with Section 1-4(a) of the City Code of Ordinance for each offense. Every day a violation continues shall constitute a separate offense.

Section VI. This Ordinance shall become effective from and after its passage and publication as required by law.

DULY PASSED AND APPROVED on this, the 8th day of December, 2008.



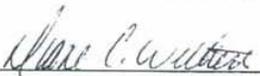
Pat Evans, MAYOR

ATTEST:



Diane Zucco, CITY SECRETARY

APPROVED AS TO FORM:



Diane C. Wetherbee, CITY ATTORNEY

APPENDIX M
FUGITIVE WATER ORDINANCE
Ordinance No. 86-6-15
WATER WASTE ORDINANCE

ORDINANCE NO. 86-6-15

**AN ORDINANCE OF THE CITY OF PLANO, TEXAS,
ESTABLISHING A POLICY FOR PROHIBITING WATER WASTE
AND EXCESS WATER FLOW; PROVIDING FOR EXEMPTIONS;
PROVIDING FOR PENALTIES AND SUSPENSION OF SERVICE;
PROVIDING A SEVERABILITY CLAUSE AND EFFECTIVE
DATE; AND ESTABLISHING PROCEDURES.**

WHEREAS, the City of Plano, Texas has developed a Water Conservation Plan, and

WHEREAS, water resources available to the City be put to the maximum beneficial use

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF PLANO:

Section I. Declaring a Nuisance Condition to Exist.

The flow of excess landscape water, fugitive water, and water wastage from any water supply, transport, or delivery system installation of facility onto adjacent property or public right-of-way of the City of Plano is hereby declared a nuisance.

Section II. Definitions For purposes of this ordinance, the following definitions apply:

- A. "Waste" shall mean the non-beneficial use of water supplied by the municipal water supply system.
- B. "Fugitive Water" shall mean the pumping, flow, release, escape, or leakage of any water from any pipe, valve, faucet, connection, diversion, well, from any water supply, transport, storage disposal or delivery system of a facility onto adjacent property or the public right-of-way.
- C. "Non-beneficial Uses" include but are not restricted to the following:
 - 1. Landscape water applied in such a manner, rate and/or quantity that it regularly overflows the landscaped area being watered and runs onto adjacent property or public right-of-way.

2. Landscape water which leaves a sprinkler system or other application device in such a manner or direction as to spray onto adjacent property or public right-of-way.
 3. Washing down of hard surfaces such as parking lots, aprons, pads, driveways or other surfaced areas when water is applied in sufficient quantity to flow from that surface onto adjacent property or the public right-of-way.
- D. "Public Right-Of-Way" shall mean paved or unpaved streets, alleys, drainage, or other public easements and lined or unlined drainage channels, which comprise the municipal storm drainage system.
- E. "Responsible Party" shall mean the owner, manager, supervisor, or person in charge of the property, facility or operation during the period of time the violation(s) are observed.

Section III. Waste Water Prohibited After the effective date of this ordinance, no person, firm, corporation, or municipal facility or operation shall waste, cause or permit to be wasted any water furnished by the municipal water supply system of the City of Plano.

Section IV. Fugitive Water Flow Prohibited After the effective date of this ordinance, no person, firm, corporation, municipal, or other government facility or operation shall cause or permit the flow of excess or fugitive water onto adjacent property or public right-of-way.

Section V. Exemptions

- A. "Fugitive Water" shall not include:
1. Storm run-off allowed under provisions of City Council ^{Ordinance 79-4-10} Resolution() ~~or ()~~.
 2. Flow resulting from temporary water supply system failures or malfunctions.
 3. Flow resulting from other emergencies.
- B. "Waste" shall not include:
1. Flow resulting from fire fighting or routine inspection of fire hydrants or from training activities.
 2. Water applied to abate spills of flammable or otherwise hazardous materials.
 3. Water applied to prevent or abate health, safety, or accident hazards when alternate methods are not available.
 4. Water which reaches or flows onto adjacent property or public right-of-way when caused by vandalism, wind, or other uncontrollable circumstances or condition.
 5. Flow resulting from a routine inspection or maintenance of the municipal water supply system.
 6. Occasional flow resulting from commercial or individual residential applications such as washing of vehicles, boats, or municipal flushing of streets.
 7. Water used by the Traffic Engineering Division, City of Plano, in the course of installation or maintenance of traffic flow control devices.
 8. Water by contractors or utilities in saw-cutting of pavement, compaction, or other uses required under terms of their contract.

Section VI. Administration of the Ordinance. The City Manager, or in his absence the Assistant City Manager, shall be responsible for the enforcement of this ordinance. He shall prescribe policies, rules, or regulations to carry out the intent and purpose of the ordinance.

A. SUSPENSION OF SERVICE. On determination by City Staff that a health or safety hazard exists, and failure by the responsible party to abate the nuisance, municipal water service may be suspended at the discretion of the City Manager.

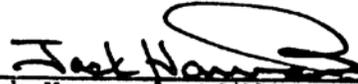
B. VARIANCES. A variance may be issued by the City Manager provided that all options for abatement through modified water management have been exhausted. The variance may be issued for a period not to exceed one year and shall stipulate both corrective measures and a schedule for completion.

Section VII. Penalty. Any responsible party who violates any of the provisions of this ordinance shall be deemed guilty of a misdemeanor and upon conviction thereof shall be punished by a fine not to exceed one thousand dollars (\$1,000.00) for each offense, and each and every day any such violation shall continue shall be deemed to constitute a separate offense.

Section VIII. It is hereby declared to be the intention of the City Council that the sections, paragraphs, sentences, clauses and phrases of this ordinance are severable, and if any phrase, clause, sentence or section of this ordinance shall be declared unconstitutional or invalid by any judgment or decree of a court of competent jurisdiction, such unconstitutionality or invalidity shall not affect any other remaining phrase, clause, sentence, paragraph or section of this ordinance; and the City Council hereby declares it would have passed the remaining portions even though it had known the affected parts would be held unconstitutional.

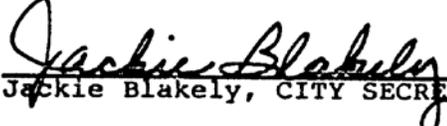
Section IX. This ordinance shall become effective immediately from and after its passage and publication as required by law.

DULY PASSED AND APPROVED BY THE CITY COUNCIL OF THE CITY OF PLANO, TEXAS, THIS THE 9th DAY OF June, 1986.



Jack Harvard, MAYOR

ATTEST:



Jackie Blakely, CITY SECRETARY

APPROVED AS TO FORM:



Gary F. Chatham, CITY ATTORNEY