Water Conservation Plan

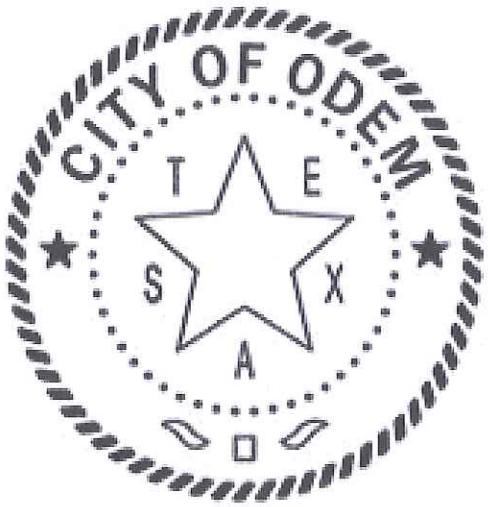
&

Drought Contingency Plan

Prepared For

The City of Odem

Odem, Texas



By:
Naismith Engineering INC.
Firm Registration Number 000355
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WATER CONSERVATION PLAN

Introduction

In accordance with the guidelines of the Texas Commission on Environmental Quality and Texas Water Development Board (TWDB), the City of Odem, (hereafter referred to as "the City"), has prepared this Water Conservation and Drought Contingency Plan.

Water Conservation Plan Goals

The purpose of this water conservation plan is intended to comply with TWDB loan requirements and achieve:

- Long-term reductions in overall water demands 5 % per capita over the next ten years;
- Reductions in the magnitude of seasonal water demands by 2% over the next five years;
- Reductions in wastewater flow volumes by 1% over the next five years; and
- Reductions in percent unaccounted for water by 7% over the next ten years.

Given current and projected water and wastewater service requirements and issues, specific water conservation objectives are:

- To reduce waste and influence conservation habits of the residents of the City;
- To reduce seasonal water demands such that future expansions of water treatment facilities can be deferred; and
- To continue to investigate the feasibility of reusing wastewater for suitable non-potable uses (i.e., irrigation of public green space and private landscaping).

Background Information

The City of Odem provides water, wastewater, fire, police, and garbage collection services for its residents. Peak water demand occurs in the summer months, reflecting both seasonal population influx and increased water demand utilized for landscape irrigation.

Population in the City of Odem is expected to grow from an estimated year 2010 Census population of 2,389 to a projected 2,535 by 2020, to an estimated population of 2,730 in 2040.

Water Utility System Profile

A completed Water Conservation Utility Profile, TWDB Form 1965 for the City is provided in Appendix A. The City of Odem had 1,171 active water connections in 2012. The five largest water Commercial customers account for approximately 31.7% of the total water sold.

In 2008, the per capita per day water use ranged from 158 gallons per day and 154 gallons per day in 2012.

The City's potable water is treated by San Patricio Municipal Water District (SPMWD) who is under contract with the City of Odem to provide potable water for future sustainability. Distribution facilities capacity is rated at 1,000 gallons per minute (gpm) or 1.44 million gallons

per day (mgd). Total water storage capacity is 0.762 million gallons, of which 0.3 million gallons are elevated storage. The 2012 average daily water demand for the City was 0.38 mgd. The peak daily water demand for 2012 was 0.735 mgd. In areas of the distribution system high pressure, pressure reducing/sustaining valves have been installed.

The City has initiated a water meter testing and replacement program where older meters are tested and replaced as necessary. As part of the City's proposed water system improvements, old and undersized water mains will be replaced which should result in lower water loss rates and improved system water pressures.

Wastewater System Profile

Ninety percent of the City's water customers are also served by the City's wastewater system. The remaining ten percent utilize private on-site wastewater disposal systems (i.e., septic tank systems).

The City operates its extended aeration wastewater treatment facility with a final permitted capacity of 0.475 mgd. The average daily flow for 2012-2013 was 0.175 mgd. The peak daily wastewater flow for the 2012-2013 period was 1.5 mgd.

Public Education

The City will promote water conservation issues by informing the public in a variety of ways including:

- New customers will receive conservation information;
- Information will be available upon request;
- Community educational program / school demonstrations and presentations;
- Articles will be published in the newsletter.

Plumbing Codes

The City has adopted the Uniform Plumbing Code, which requires the use of water saving fixtures to be installed in new construction and in the replacement of plumbing in existing structures.

Retrofit Programs

The City shall educate the residents, plumbers, and contractors on the benefits of retrofitting existing facilities with water saving devices. This program will be encompassed in the educational and informational programs utilized by the City. The City will contact all plumbing companies and hardware stores in the area to encourage them to stock water conserving fixtures including retrofit devices.

Accurate Metering of Raw Water Supplies and Treated Water Deliveries

The City of Odem has no raw water supplies.

The City of Odem meters all (high service) treated water deliveries to the distribution system from the water treatment plant. Each meter has an accuracy of plus or minus 5%. The meters are calibrated on a semiannual basis by City of Odem to maintain the required accuracy and are repaired and/or replaced as needed.

Universal Metering

Most treatment facilities, pumping stations, and municipal structures operated by the City of Odem are now being metered. The City has installed meters at public parks to improve water accountability.

The City will continue to provide a water meter preventive maintenance program, wherein testing, repairs, and replacement are performed in accordance with AWWA standards.

Water Conserving Landscape

The City of Odem will provide information, through the public education program, to homeowners, business owners, landscape architects, and irrigation contractors about the methods and benefits of water conserving landscaping practices and devices. The City is also installing a drip irrigation system to serve new trees in public areas. The following methods will be encouraged.

- The use of low water consuming plants and grasses for landscaping new homes and commercial areas.
- The use of drip irrigation systems when possible or other water conserving irrigation systems that utilize efficient sprinklers and considerations given to prevailing winds.
- The use of ornamental fountains that recycle water and use a minimum amount of water.
- Business and nurseries to offer for sale low water consuming plants and grasses along with efficient irrigation systems and to promote their use through demonstrations and advertisements.

Rate Structures of Water and Wastewater

The City's water and wastewater connection fees are based of the requirements of the "cost of services" the utility provides.

First-time water connection fees are based on the size of the meter required: ¾" connections at $500.00; larger connection are $500.00 plus the cost of oversizing of water meter and fittings. Wastewater connection fee is a set permit fee of $75.00 per connection inside the City Limits.

The City employs a water and wastewater usage rate structure based on customer type and a uniform service charge. Current water and wastewater rates for residential and commercial accounts are presented in Tables 1-1 and 1-2 below:

Table 1-1
City of Odem
Water Rate Structure

New Rates

Effective January 1, 2013

Water Rates	Residence Inside City Limits	Residence Outside City Limits	Water Rates	Commercial Inside City Limits	Commercial Outside City Limits
Minimum 3,000 gallons	$22.15	$26.65	Minimum 3,000 gallons	$26.15	$32.40
Next 7,500 gallons	4.10/M	5.10/M	Next 7,500 gallons	4.85/M	6.23/M
Next 7,500 gallons	3.85/M	4.73/M	Next 7,500 gallons	4.75/M	6.07/M
Next 7,500 gallons	3.80/M	4.65/M	Next 7,500 gallons	4.67/M	5.96/M
Over 25,500 gallons	3.70/M	4.50/M	Next 7,500 gallons	4.49/M	5.73/M
			Over 33,000 gallons	4.36/M	5.54/M

Table 1-2
City of Odem
Wastewater Rate Structure

Category	Flat Rate
Residence Inside City Limits	$24.50
Residence Outside City Limits	$34.75
Category*	Flat Rate
Commercial Inside City Limits	$33.00
Commercial Outside City Limits	$47.50

* Plus one-fourth (1/4) of the water charges less the minimum water bill charge.

Leak Detection and Water Audits

The City of Odem has aggressively pursued a leak detection and repair program and has in inventory all necessary repair materials needed to ensure prompt repairs of all leaks detected or reported.

A monthly water loss report provides an effective tracking system of metered production, metered consumption, accounted water losses, and unaccountable water loss.

The City maintains an annual unaccountable rate of .12%.

Recycling and Reuse

The City has studied the additional possibility of using its wastewater effluent for other recycling and reuses, but has determined that at this time it is not economically feasible. The City will continue to study alternative uses for its wastewater effluent.

Implementation and Enforcement

The resolution adopting the Water Conservation Plan shall authorize the City to implement, enforce, and administer the program.

Contracts with Other Political Subdivisions

The City will, as part of contract for sale of water to any other entity re-selling water, require that entity to adopt applicable provisions of the City's water conservation and drought contingency plan or have a plan in effect previously adopted by TCEQ or TWDB. These provisions will be through contractual agreement prior to the sale of any water to the entity.

Coordination with the Regional Water Planning Group

The service area of the City of Odem is located within the Regional Water Planning Area (N) – Coastal Bend and has provided a copy of this Water Conservation and Drought Contingency Plan to the Regional Water Planning Group (N) – Coastal Bend.

Annual Reporting to Texas Water Development Board

The City Secretary shall be responsible for providing the required annual report to the Texas Water Development Board for the life of the loan. The content and format for the annual reporting is included in the form: Water Conservation Program Annual Report, 1966 (Appendix B).

DROUGHT CONTINGENCY PLAN (EMERGENCY WATER DEMAND MANAGEMENT PLAN)

Introduction

It is necessary for the City of Odem to have in place a plan that will deal with emergency water demand situations. There are a number of scenarios where the public water supply could be adversely affected and the public's health jeopardized. Normal service can be interrupted by such uncontrollable circumstances as drought, hurricanes, tornadoes, vandalism, floods, or equipment failure. Water demand is usually significantly higher than normal when drought conditions are in effect causing maximum stress on the public water system.

This plan will provide the necessary indicators and control measures to temporarily abate water demand in emergency situations. These provisions are designed to be in place only as long as an emergency situation exists. To be effective the plan must have the following elements:

- Trigger conditions that will signal the existence of an emergency situation;
- Emergency control measures;
- Methods to relay information and notify the public;
- Enforcement procedures;
- Method of implementation of plan; and
- Procedure for plan termination notification.

Provisions to Inform the Public and Opportunity for Public Input

The City of Odem made the Water Conservation and Drought Contingency Plan available to its customers at City Hall and the Public Library. The Plan was adopted by Ordinance of the Odem City Council. The City of Odem made drought contingency planning information available to the public as follows:

- The proposed plan was provided to anyone requesting a copy.
- The plan was presented for adoption to the Odem City Council at a public meeting at Odem City Hall at 7:00 P.M. on January 7, 2014.

Provisions for Continuing Public Education and Information

The City of Odem will periodically provide the public with information about the Plan, including information about the conditions under which each stage of the Plan is to be initiated or terminated and the drought response measures to be implemented in each stage. This information will be provided by the Water Utilities Department through ongoing programs which will reach a wide variety of customers. These programs include public outreach to schools. The City distributes conservation and drought response in water bill mailings and provides them to the general public at City Hall. The City also publishes this information in the local newspaper *Odem-Edroy Times* with information specific to water conservation and to this Plan. The City of Odem will inform and educate the public about its Plan by the following means:

- Posting the Notice of Drought conditions at the City Hall, Library, and local businesses.
- Preparing a bulletin describing the plan and making it available at city hall and other appropriate locations.
- Notifying local organizations, and schools that City of Odem staff are available to make presentations on the Plan (usually in conjunction with presentations on water conservation programs).
- At any time that the Plan is activated or the drought stage changes, the City of Odem will notify local media of the issues, the drought response stage, and the specific actions required of the public
- Customer Billing inserts will also be used as appropriate.

System Description

The City's potable water is treated by San Patricio Municipal Water District (SPMWD) and is under with the City of Odem contract to provide potable water for future sustainability. Distribution facilities capacity is rated at 1,000 gallons per minute (gpm) or 1.44 million gallons per day (mgd). Total water storage capacity is 0.762 million gallons, of which 0.3 million gallons are elevated storage. The 2012 average daily water demand for the City was 0.38 mgd. The peak daily water demand for 2012 was 0.735 mgd. In areas of the distribution system high pressure, pressure reducing/sustaining valves have been installed.

Trigger Conditions

Daily water demand will be monitored for impending emergency conditions by City staff. Trigger conditions will be based on an emergency situation caused by a drop in reservoir storage levels, natural disaster, equipment, or system failure, or extended high daily water demands.

A. Stage 1 - Mild Water Shortage Conditions

1. Combined storage level of Choke Canyon Reservoir and Lake Corpus Christi declines below 50% or Lake Texana storage level declines below 40%, or
2. Water demand reaches eighty-five percent (85%) of firm production capacity, or,
3. A disruption due to equipment or distribution system failure that would limit the capacity of the water system below eighty-five percent (85%) of capacity during high demand periods.

B. Stage 2 - Moderate Shortage Conditions

1. Combined Lake and Reservoir levels declines to below 40%, or
2. Water demand exceeds ninety percent (90%) of the firm production capacity, or,
3. A disruption due to equipment or distribution system failure that would limit the capacity of the water system below seventy five percent (75%) of capacity during high demand periods.

C. Stage 3 - Severe Water Shortage Conditions

1. Combined Lake and Reservoir levels declines to below 30%, or
2. Water demand reaches ninety-five percent (95%) of firm production capacity, or,
3. A disruption due to equipment or distribution system failure that would limit the capacity of the water system below seventy percent (70%) of capacity during high demand periods.

D. Stage 4 - Critical Water Shortage Conditions

1. Combined Lake and Reservoir levels declines to below 20%, or
2. Water demand reaches one hundred percent (100%) of firm production capacity

E. Stage 5 - Emergency Water Shortage Conditions

1. Extended period of the severe or critical condition, or
2. Any natural catastrophic situations that interrupt or have the potential to interrupt the City's potable water supply, including but not limited to the following:
   a) A major water line break, or pump or system failure occurs, which causes unprecedented loss of capability to provide water service; or
   b) Water distribution system limitations; or
   c) Natural or man-made contamination of the water supply source occurs,

Emergency Drought Contingency Measures

The City will instate the following measures when trigger conditions have occurred:

A. Stage 1 - Mild Water Shortage Conditions

1. The public shall be informed, by local news media, that a trigger condition has been reached and they should look for ways to voluntarily reduce water demand. The specific recommendations shall be provided by the City.
2. Water Customers are requested to voluntarily limit the irrigation of landscaped areas to once per week. The City will publish a voluntary lawn-watering schedule through local media.
3. There shall be reduced watering of public parks, public facilities and esplanades to minimum levels to avoid loss of vegetation.
4. Request voluntary water reductions of major commercial water users.

B. Stage 2 - Moderate Shortage Conditions (Under threat of penalty for violation, the following restrictions shall apply to all persons during Stage 2)

1. Notify customers that all preceding measures that are in place due to mild trigger conditions will be continued.
2. Mandatory lawn watering schedule will be instated as follows:
   a) Customers with even numbered street addresses will be allowed to water on even number days of the months.
   b) Customers with odd numbered street addresses will be allowed to water on odd number days of the months.
   c) In the event the premises have no number, application shall be made to the City for the assignment of a number to such premises.
   d) Watering shall only occur between 6PM - 10AM.

3. Irrigation of landscaped areas, at the minimum rate necessary, for the establishment and maintenance of flower gardens, vegetable gardens, fruit gardens, tree, and shrubs or plants in containers will be allowed on any day and applied using the following:
   a) A hand held hose equipped with a positive shutoff nozzle.
   b) A drip irrigation system equipped with an automatic shutoff device.
   c) A soaker hose, which does not spray water into the air, equipped with an automatic shutoff device.
   d) A hand held bucket or watering can of 5 gallons or less
   e) Irrigation of landscaped areas with hose end sprinklers or automatic irrigation system shall be limited to **once per week.**
4. Water used for the establishment of newly planted material may be applied as needed for up to sixty (60) days at which time will become subject to the requirements outlined in item No.3.
5. Customers using graywater, well water, or other water not obtained from the City may be used at any time as long as it is not mixed with the City's water. Customers using well water must obtain a permit from the City and post a sign stating that the water used for irrigation is from a permitted private well.
6. Water used at any hour for short periods of time for testing related to the installation, maintenance, and repair of sprinkler systems may be allowed.
7. Water may be used for the irrigation of vegetation on a large parcel of land or unique botanical institutions, in conformance with a special water plan, specifically approved for the parcel by the City Council. The City Council approving any special watering plan shall ensure that the plan achieves similar water conservation goals to the mandatory conservation measures applicable to other customers under this section.
8. The use of water to wash any motor vehicle, motorbike, boat trailer, or other vehicle is prohibited except on designated water days. Such washing, when allowed, shall be done with a hand held bucket or a hand held hose equipped with a positive shutoff nozzle for quick rinses. Vehicle washing may be done at any time on the immediate premises of a commercial car wash. Further, such washing may be exempted from these regulations upon review by the City Council if the health, safety, and welfare of the public are contingent upon frequent vehicle cleansing, such as garbage trucks and vehicles used to transport food and perishables.
9. Use of water to fill, refill, or add to any indoor or outdoor swimming pools, wading pools, or Jacuzzi-type pools is prohibited except on designated water days.
10. Operation of any ornamental fountain or pond for aesthetic or scenic purposes is prohibited except where necessary to support aquatic life.
11. Use of water from hydrants shall be limited to firefighting, related activities or other activities necessary to maintain public health, safety, and welfare, except that use of water from designated fire hydrants for construction proposes may be allowed under special permit from the City.

12. The use of water to maintain integrity of building foundations is limited to designated watering days and is only permitted by the use of hand-held hose or drip irrigation.
13. Water for public use shall be limited to essential practices to protect the health or safety of the community. .
14. The following uses of water are defined as non-essential and are prohibited:

    a) Wash-down of any sidewalks, walkways, driveways, parking lots, tennis courts, or other hard-surfaced areas;

    b) Use of water to wash down building or structures for purposed other than immediate fire protection without permit granted by the City.

    c) Use of water for dust control without permit granted by the City.

C. Stage 3 - Severe Water Shortage Conditions

1. Notify customers that all preceding measures that are in place due to moderate trigger conditions will be continued except as modified below:
    a) The watering of lawns may be permitted **once every seven (7) days** through the means of a hand held hose equipped with a positive shutoff nozzle, a drip irrigation system, and hand-held bucket or water can. When authorized, such lawn watering shall be permitted only:
        a. At even-numbered street addresses on Monday; and
        b. At odd-numbered street addresses on Thursday.
    b) Irrigation of landscaped areas with hose end sprinklers or automatic irrigation system shall be limited to **once every other week**:
        a. Even numbered street addresses will be allowed to water on even number days of the months
        b. Odd numbered street addresses will be allowed to water on odd number days of the months
2. Mandatory limits of normal water use will be set by the City Council. The use of water beyond the limits set will result in monetary fines or water service termination.
3. The use of water to serve a customer in a restaurant unless requested by the customer is prohibited.
4. The use of water for the expansion of commercial nursery facilities is prohibited.

D. Stage 4 - Critical Water Shortage Conditions

1. Notify customers that all preceding measures that are in place due to moderate and severe trigger conditions will be continued except as modified below:
    a) No applications for new, additional, further expanded, or increased-in-size water service connections, meters, service lines, pipeline extensions, mains, or other water service facilities of any kind shall be allowed, approved, or installed except as approved by the City Council.

b) Irrigation of landscaped areas shall be **prohibited at all times**.

c) Use of water to wash any motor vehicle, motorbike, boat, trailer, or other vehicle not occurring on the premises of a commercial car wash station and not in the immediate interest of public health, safety, and welfare is prohibited.

d) The filling, refilling, or adding of water to swimming pools, wading pools, and Jacuzzi-type pools, and water parks (unless using non-City water sources) is prohibited.

e) The use of water to maintain the integrity of a building foundation is still permitted on the designated Stage 3 watering days.

f) The use of water (unless using non-City water sources) to put new agricultural land into production is prohibited.

g) The use of water for new planning or landscaping is prohibited.

2. For residential and multi-unit customers, a drought surcharge of up to and including 100% of the current water rate (base rate plus volumetric) may be added to the customers' bill to deter discretionary water use.

E. Stage 5 - Emergency Water Shortage Conditions

1. Notify customers that all preceding measures that are in place due to moderate, severe, and critical trigger conditions will be continued except as modified below:

   a) Irrigation of landscaped areas is absolutely prohibited.

   b) Use of water to wash any motor vehicle, motorbike, boat, trailer, or other vehicle is absolutely prohibited.

2. The City shall take those actions deemed necessary to meet the conditions resulting from the emergency.

Information and Education

The City Secretary, or designee, shall monitor water supply and/or demand conditions on a weekly basis and, in accordance with the triggering criteria set forth as part of this plan shall determine that a mild, moderate, severe, critical, or emergency water shortage condition exists and shall implement the following notification procedures:

Notification of the Public:

The City Secretary, or designee, shall notify the public for every change in drought status by any or all of the following:

- City Website (www.cityofodemtx.co007Am)
- Publication in the *Odem-Edroy Times*
- Notice on the monthly billing statements
- Signs posted in public areas

Additional Notifications:

The City Secretary, or designee, shall at a minimum, notify directly, or cause to be notified directly, the following individuals and entities for every change in drought stage status:

- Mayor and City Council members
- Fire Chief
- City and/or County Emergency Management Coordinator
- County Judge and Commissioners
- Major Water Users
- Critical Water Users
- Public facilities managers
- Texas Commission on Environmental Quality (TCEQ) – Note TCEQ executive director must be informed within five (5) business days of mandatory water use restrictions being imposed.

Enforcement

No person shall knowingly or intentionally allow the use of water from the City for residential, commercial, industrial, agricultural, governmental, or any other purpose in a manner contrary to any provisions of this plan.

Any person violating any provisions of this plan shall be deemed guilty of a Class C misdemeanor and upon conviction thereof shall be punished by a fine not to exceed two thousand dollars per violation. Any employee of the City designated by the City Secretary may issue a citation to a person they reasonably believe to be in violation of this order.

The City will enforce this Plan consistent with other rules adopted by the City in accordance to the Texas Water Code.

Variances

The City Council may consider granting customer specific variances from the provisions of this Plan in cases of hardship or special conditions. All requests for variances must be submitted in writing to the City Secretary. After recommendation by the City Secretary, the City Council shall consider hardship or special cases to determine whether a particular circumstance warrants a variance. A variance shall be granted only for reasons of severe economic hardship, medical hardship or for a legitimate public health concern. Such findings of the City Council together with the specific facts upon which such findings are based shall be incorporated into the official minutes of the City Council meeting at which such variance is recommended.

Initiation Procedures

Monitoring of the water demand, as well as the utility system condition, will be performed by City staff. As trigger conditions are exceeded, the City Secretary or his/her designee will notify the Council members, Fire and Police Department of the situation. The City Secretary will then initiate the Drought Contingency Plan. TCEQ will be contacted within five working days of the initiation of drought contingency measures.

Termination Notification

Upon the elimination of the emergency situation or when the trigger condition no longer exists, the City will notify the public of the downgrading or termination of the prescribed measures. An article published in the local newspaper will be utilized for the notification of the revised status of the prescribed measures.

Annual Evaluation and Revisions

The trigger conditions shall be evaluated at least once a year for overall effectiveness and trigger conditions will be revised if necessary. This plan will be updated at least every five years to provide revisions and updates as appropriately required.

Appendix A
Water Conservation Utility Profile
TWDB Form 1965

Texas Water Development Board

UTILITY PROFILE

Fill out this form as completely as possible.
If fields do not apply to your entity, leave them blank.

CONTACT INFORMATION

Name of Utility: City of Odem

Public Water Supply Identification Number (PWS ID): 205004

CCN Number: Water CCN - 10555 Wastewater CCN - 20206

Water Rights ID Number: _____

Wastewater ID Number: _____

Check all that apply:

- [x] Retail Water Supplier
- [ ] Wholesale Water Supplier
- [x] Wastewater Treatment Utility

Address: 514 Voss Avenue City: Odem Zip Code: 78370-075

Email: juanh@bizstx.rr.com Telephone Number: 361-368-2831

Regional Water Planning Group: N Map

Groundwater Conservation District: 80 Map

Completed By: Juan Hernandez Title: Public Works Superintenden

Date: 12-12-13

Check all that apply:

- [x] Received financial assistance of $500,000 or more from TWDB
- [ ] Have 3,300 or more retail connections
- [ ] Have a water right with TCEQ

Texas Water Development Board

Section I: Utility Data

A. Population and Service Area Data

1. Current service area size in square miles: 5
(Attach or email a copy of the service area map.)

2. Provide historical service area population for the previous five years, starting with the most current year.

Year	Historical Population Served By Retail Water Service	Historical Population Served By Wholesale Water Service	Historical Population Served By Wastewater Service
2008	2,499	0	2,167
2009	2,499	0	2,167
2010	2,499	0	2,167
2011	2,499	0	2,167
2012	2,499	0	2,167

3. Provide the projected service area population for the following decades.

Year	Projected Population Served By Retail Water Service	Projected Population Served By Wholesale Water Service	Projected Population Served By Wastewater Service
2020	2,535	0	2,282
2030	2,659	0	2,393
2040	2,730	0	2,457
2050	2,782	0	2,504
2060	2,817	0	2,535

4. Describe the source(s)/method(s) for estimating current and projected populations.

Current population data was provided by the City of Odem based on city records. The project populations were provided by the Texas Water Development Board population projections.

B. System Input

Provide system input data for the previous five years.

Total System Input = Self-supplied + Imported – Exported

Year	Self-supplied Water in Gallons	Purchased/Imported Water in Gallons	Exported Water in Gallons	Total System Input
2008	0	129,598,000	0	129,598,000
2009	0	147,909,000	0	147,909,000
2010	0	120,325,200	0	120,325,200
2011	0	153,262,000	0	153,262,000
2012	0	137,512,000	0	137,512,000

C. Water Supply System (Attach description of water system)

1. Designed daily capacity of system 1,440,000 **gallons** per day
2. Storage Capacity:
   Elevated 300,000 **gallons**
   Ground 462,000 **gallons**

3. List all current water supply sources in gallons:

Water Supply Source	Source Type*	Total Gallons
San Patricio MWD	Contract	
	Select	
	Select	
	Select	
	Select	
	Select	

*Select one of the following source types: *Surface water, Groundwater, or Contract*

4. If surface water is a source type, do you recycle backwash to the head of the plant?
   ○ Yes _____ estimated **gallons** per day
   ◉ No


COLEMAN
A-147
WILLIAMSON
GABAS WINTERS
R.L. Pyle, Sr. 160 Ac.
Mrs. C.D. Eads 148.22 Ac.
Childress & Dodd
A. N. Smith 75.07 Ac.
HIGHWAY

ETJ Map.

Texas Water Development Board

D. Projected Demands

1. Estimate the water supply requirements for the next ten years using population trends, historical water use, economic growth, etc.

Year	Population	Water Demands (gallons)
2013	2,480	129,301,044
2014	2,487	129,729,040
2015	2,495	130,152,672
2016	2,502	130,571,944
2017	2,509	130,986,859
2018	2,517	131,397,419
2019	2,524	131,803,629
2020	2,535	132,392,355
2021	2,539	132,603,009
2022	2,546	132,996,186

2. Describe sources of data and how projected water demands were determined. Attach additional sheets if necessary.

In order to determine the projected water demands a spreadsheet was created to incorporate the historical data from the previous 5 years along with the Texas Water Development Boards (TWDB) population projections and the water conservation 5 and 10 year goals. Based on TWDB's 10 year population projections a trendline was established and the population projections shown were calculated. To determine the projected water demand, first the gallons per capita per day were established based on a long term goal of a reduction in overall water demand by 5% over the next 10 years. This combined with the population projections established the projected total gallons supplied to the system. We then established the projection for the unnaccounted-for water. This projection was calculated based on the goal for a 7% reduction in unnaccounted-for water over the next 10 years. Finally the projected water demand was calculated by subtracting the unnaccounted-for water projection from the projected total gallons supplied to the system.

E. High Volume Customers

1. If applicable, list the annual water use for the five highest volume **RETAIL customers**. Select one of the following water use categories to describe the customer; choose Residential, Industrial, Commercial, Institutional, or Agricultural.

Retail Customer	Water Use Category*	Annual Water Use	Treated or Raw
Odem/Edroy ISD	Commercial	8,159,200	Treated
General Checmical	Commercial	7,979,900	Treated
Edcot Gin	Commercial	2,472,100	Treated
Broughton Electric	Commercial	1,059,900	Treated
Ring Car Wash	Commercial	1,039,200	Treated

*For definitions on recommended customer categories for classifying customer water use, refer to the Guidance and Methodology for Reporting on Water Conservation and Water Use.

2. If applicable, list the annual water use for the five highest volume **WHOLESALE customers**. Select one of the following water use categories to describe the customer; choose Municipal, Industrial, Commercial, Institutional, or Agricultural.

Wholesale Customer	Water Use Category*	Annual Water Use	Treated or Raw
	Select		Select
	Select		Select
	Select		Select
	Select		Select
	Select		Select

*For definitions on recommended customer categories for classifying customer water use, refer to the Guidance and Methodology for Reporting on Water Conservation and Water Use.

Section II: Retail System Data

If you do not provide retail water, go to Section III.

A. Retail Connections

1. List the active retail connections by major water use category.

Water Use Category*	Active Retail Connections		
	Metered	Unmetered	Total Connections
Residential - Single Family	1,070	25	1,095
Residential – Multi-family (units)	30	0	30
Industrial	0	0	0
Commercial	71	0	71
Institutional	0	0	0
Agricultural	0	0	0
TOTAL	1,171	25	1,196

*For definitions on recommended customer categories for classifying customer water use, refer to the Guidance and Methodology for Reporting on Water Conservation and Water Use.

2. List the net number of new retail connections by water use category for the previous five years.

Water Use Category*	Net Number of New Retail Connections				
	2008	2009	2010	2011	2012
Residential - Single Family	43	42	60	23	46
Residential – Multi-family (units)	0	0	0	0	0
Industrial	0	0	0	0	0
Commercial	0	1	4	1	1
Institutional	0	0	0	0	0
Agricultural	0	0	0	0	0
TOTAL	43	43	64	24	47

*For definitions on recommended customer categories for classifying customer water use, refer to the Guidance and Methodology for Reporting on Water Conservation and Water Use.

B. Retail Water Accounting Data - Water Use Categories

For the previous five years, enter the number of gallons of RETAIL water provided in each major water use category.

Water Use Category*	Total Gallons of Retail Water				
	2008	2009	2010	2011	2012
Residential - Single Family	80,703,166	91,616,864	80,988,700	102,309,430	98,640,509
Residential – Multi-family	361,290	363,570	339,800	257,370	313,091
Industrial	0	0	0	0	0
Commercial	36,348,321	24,204,966	23,692,300	30,518,200	31,411,100
Institutional	0	0	0	0	0
Agricultural	0	0	0	0	0
TOTAL	117,412,777	116,185,400	105,020,800	133,085,000	130,364,700

*For definitions on recommended customer categories for classifying customer water use, refer to the Guidance and Methodology for Reporting on Water Conservation and Water Use.

Texas Water Development Board

C. Retail Water Accounting Data - Annual and Seasonal Use

For the previous five years, enter the number of gallons provided to RETAIL customers.

TREATED

	2008	2009	2010	2011	2012
January	9,430,800	8,000,066	7,947,000	8,759,200	10,295,100
February	7,782,800	8,198,508	8,772,300	9,032,100	8,161,500
March	8,189,500	8,123,834	7,636,100	8,642,400	9,297,700
April	8,675,033	8,675,033	7,851,000	9,142,000	9,032,100
May	10,281,433	10,281,433	8,959,300	11,722,000	10,163,000
June	11,773,700	11,773,700	9,886,900	12,601,400	12,832,800
July	11,583,066	11,576,066	9,888,900	14,313,400	10,556,900
August	10,398,920	14,433,100	8,358,900	17,572,900	14,191,500
September	11,059,900	11,847,600	10,616,300	11,074,900	11,488,500
October	9,269,625	8,012,900	7,851,000	10,462,800	10,751,800
November	9,165,900	7,909,700	7,647,400	9,488,400	11,618,100
December	9,802,100	7,353,500	9,605,700	10,273,500	11,975,700
TOTAL	117,412,777	116,185,440	105,020,800	133,085,000	130,364,700

RAW

	2008	2009	2010	2011	2012
January					
February					
March					
April					
May					
June					
July					
August					
September					
October					
November					
December					
TOTAL	0	0	0	0	0

RETAIL	2008	2009	2010	2011	2012	**Average in Gallons**
Summer Retail (Treated + Raw)	33,755,686	37,782,8(	28,134,700	44,487,700	37,581,200	36,348,430 — 5yr Average
TOTAL Retail (Treated + Raw)	117,412,77	116,185,4	105,020,80(	133,085,00(	130,364,70(	120,413,743 — 5yr Average

D. Water Loss

Provide Water Loss Data for the previous five years.

Water Loss GPCD = [Total Water Loss in Gallons ÷ Permanent Population Served] ÷ 365

Water Loss Percentage = [Total Water Loss ÷ Total System Input] x 100

Year	Total Water Loss in Gallons	Water Loss in GPCD	Water Loss as a Percentage
2008	15,923,015	18	12%
2009	25,837,668	29	17%
2010	7,460,500	9	6%
2011	24,490,100	27	16%
2012	11,144,800	12	8%
5-year average	16,971,217	19	12%

E. Peak Day Use

Provide the Average Daily Use and Peak Day Use for the previous five years.

Year	Average Daily Use (gal)	Peak Day Use (gal)	Peak Factor
2008	355,063		0.00
2009	405,230		0.00
2010	329,658		0.00
2011	419,896		0.00
2012	376,745		0.00

Section III: Wholesale System Data

If you do not provide wholesale water, go to Section IV.

Texas Water Development Board

A. Wholesale Connections

1. List the active wholesale connections by major water use category.

Water Use Category*	Active Wholesale Connections		
	Metered	Unmetered	Total Connections
Municipal			0
Industrial			0
Commercial			0
Institutional			0
Agricultural			0
TOTAL	0	0	0

*For definitions on recommended customer categories for classifying customer water use, refer to the Guidance and Methodology for Reporting on Water Conservation and Water Use.

2. List the net number of new wholesale connections by water use category for the previous five years.

Water Use Category*	Net Number of New Wholesale Connections				
	2008	2009	2010	2011	2012
Municipal					
Industrial					
Commercial					
Institutional					
Agricultural					
TOTAL	0	0	0	0	0

*For definitions on recommended customer categories for classifying customer water use, refer to the Guidance and Methodology for Reporting on Water Conservation and Water Use.

B. Wholesale Water Accounting Data - Water Use Categories

For the previous five years, enter the number of gallons of WHOLESALE water exported (*sold or transferred*) to each major water use category.

Customer Category*	Total Gallons of Wholesale Water				
	2008	2009	2010	2011	2012
Municipal					
Industrial					
Commercial					
Institutional					
Agricultural					
TOTAL	0	0	0	0	0

*For definitions on recommended customer categories for classifying customer water use, refer to the Guidance and Methodology for Reporting on Water Conservation and Water Use.

Texas Water Development Board

C. Wholesale Water Accounting Data - Annual and Seasonal Use

For the previous five years, enter the number of gallons exported (*sold or transferred*) to WHOLESALE customers.

TREATED

	2008	2009	2010	2011	2012
January					
February					
March					
April					
May					
June					
July					
August					
September					
October					
November					
December					
TOTAL	0	0	0	0	0

RAW

	2008	2009	2010	2011	2012
January					
February					
March					
April					
May					
June					
July					
August					
September					
October					
November					
December					
TOTAL	0	0	0	0	0

WHOLESALE	2008	2009	2010	2011	2012	**Average in Gallons**
Summer Wholesale (Treated + Raw)	0	0	0	0	0	0 5yr Average
TOTAL Wholesale (Treated + Raw)	0	0	0	0	0	0 5yr Average

D. Water Loss

Provide Water Loss Data for the previous five years.

Water Loss GPCD = [Total Water Loss in Gallons ÷ Permanent Population Served] ÷ 365

Water Loss Percentage = [Total Water Loss ÷ Total System Input] x 100

Year	Total Water Loss in Gallons	Water Loss in GPCD	Water Loss as a Percentage
2008			0%
2009			0%
2010			0%
2011			0%
2012			0%
5-year average	0	0	0%

E. Peak Day Use

Provide the Average Daily Use and Peak Day Use for the previous five years.

Year	Average Daily Use (gal)	Peak Day Use (gal)	Peak Factor
2008	355,063	582,000	1.64
2009	405,230	711,000	1.75
2010	329,658	576,000	1.75
2011	419,896	1,058,000	2.52
2012	376,745	735,000	1.95

Section IV: Wastewater System Data

If you do not provide wastewater system services then you have completed the Utility Profile. Save and Print this form to submit with your Plan. Continue with the Water Conservation Plan Checklist to complete your Water Conservation Plan.

Texas Water Development Board

A. Wastewater System Data (Attach a description of your wastewater system)

1. Design capacity of wastewater treatment plant(s): 475,000 **gallons** per day.
2. Provide data on the types of recycling and reuse activities implemented during the current reporting period.

	Total Annual Volume (in gallons)
On-site irrigation	0
Plant wash down	0
Chlorination/de-chlorination	0
Industrial	0
Landscape irrigation (parks, golf courses)	0
Agricultural	0
Discharge to surface water	0
Evaporation pond	0

3. Could treated wastewater be substituted for potable water?
   ○ Yes ◉ No

B. Wastewater Data for Service Area

1. Percent of water service area served by wastewater system: 90 %
2. Monthly treated wastewater volume in gallons, for the previous five years.

	2008	2009	2010	2011	2012
January	785,525	783,200	722,700	791,100	845,100
February	852,450	827,500	761,000	1,028,900	792,400
March	871,325	887,400	939,400	845,700	812,800
April	910,125	935,400	874,100	1,079,900	751,100
May	1,210,200	1,106,800	1,047,400	1,349,000	1,337,600
June	1,012,625	911,300	1,047,500	1,111,800	979,900
July	957,200	957,200	1,079,200	976,300	816,100
August	865,325	1,079,300	785,000	798,500	798,500
September	831,475	843,800	885,400	893,600	703,100
October	885,375	730,300	838,000	1,074,900	898,300
November	877,575	694,700	879,300	875,500	1,060,800
December	898,725	648,700	1,077,500	949,100	919,600
TOTAL	10,957,925	10,405,600	10,936,500	11,774,300	10,715,300

You have completed the Utility Profile. Save and Print this form to submit with your Plan.
Continue with the Water Conservation Plan Checklist to complete your Water Conservation Plan.

Appendix B
Water Conservation Program Annual Report
TWDB Form 1966

Water Conservation Plan Annual Report
Retail Water Supplier

CONTACT INFORMATION

Name of Entity: City of Odem

Public Water Supply Identification Number (PWS ID): 205004

CCN Number: 10555

Water Rights ID Number: _____

Wastewater ID Number: _____

Check all that apply:

- [x] Retail Water Supplier
- [ ] Wholesale Water Supplier
- [x] Wastewater Treatment Utility

Address: 514 Voss Avenue City: Odem Zip Code: 78370-0754

Email: juanh@bizstx.rr.com Telephone Number: 361-368-2831

Regional Water Planning Group: N Map

Groundwater Conservation District: 80 Map

Form Completed By: Juan Hernandez Title: Public Works Superintenden

Date: 12-12-13

Reporting Period (**check only one**):

- (●) Fiscal — Period Begin(mm/yyyy) 04/2012 — Period End(mm/yyyy) 03/2013
- ( ) Calendar — Period Begin(mm/yyyy) _____ — Period End (mm/yyyy) _____

Check all of the following that apply to your entity:

- [x] Receive financial assistance of $500,000 or more from TWDB
- [ ] Have 3,300 or more retail connections
- [ ] Have a water right with TCEQ

SYSTEM DATA

1. For this reporting period, provide the **total volume of retail water metered** in your system: 125,598,270 gal.

Retail Customer Categories*
- Residential Single Family
- Residential Multi-family
- Industrial
- Commercial
- Institutional
- Agricultural

*Recommended Customer Categories for classifying your customer water use. For definitions, refer to Guidance and Methodology on Water Conservation and Water Use.

2. For this reporting period, does your billing/accounting system have the capability to classify customers into Retail Customer Categories?
   - (●) Yes
   - ( ) No

3. For this reporting period, select the category(s) used to classify customer water use:
   - [✓] Residential Single Family
   - [✓] Residential Multi-family
   - [ ] Industrial
   - [✓] Commercial
   - [ ] Institutional
   - [ ] Agricultural

4. For this reporting period, enter the gallons of **metered retail water** used by each customer category. Enter zero if the Customer Category does not apply.

Retail Customer Category	Number of Connections	Gallons Metered
Residential Single Family	1,070	98,640,509
Residential Multi-family	30	313,091
Industrial	0	0
Commercial	71	31,411,100
Institutional	0	0
Agricultural	0	0
Total Retail Water Metered[1]	1,171	130,364,700

1. Residential + Industrial + Commercial + Institutional + Agricultural = Total Retail Water Metered

Water Use Accounting

View tutorial here on how to use data from your water loss audit

	Total Gallons During the Reporting Period
Water Produced: Water from permitted sources such as rivers, lakes, streams, and wells.	0
Wholesale Water Imported: Purchased wholesale water transferred into the system.	137,512,000
Wholesale Water Exported: Wholesale water sold or transferred out of the system.	0
System Input: Total water supplied to system and available for retail use.	137,512,000 Produced + Imported – Exported = System Input
Total Retail Water Metered	130,364,700
Other Authorized Consumption: Water that is authorized for other uses such as the following: (This water may be metered or unmetered.) - back flushing - line flushing - storage tank cleaning - municipal golf courses/parks - fire department use - municipal government offices	1,718,900
Total Authorized Use: All water that has been authorized for use.	132,083,600 Total Retail Water + Other Authorized Consumption = Total Authorized Use
Apparent Losses: Water that has been consumed but not properly measured or billed. (*Includes losses due to customer meter accuracy, systematic data discrepancy, unauthorized consumption such as theft*)	15,000
Real Losses: Physical losses from the distribution system prior to reaching the customer destination. (*Includes physical losses from system or mains, reported breaks and leaks, or storage overflow*)	100,000
Unidentified Water Losses: Unreported losses not known or quantified.	5,313,400 System Input - Total Authorized Use - Apparent Loss - Real Loss = Unidentified Water Loss
Total Water Loss	5,428,400 Apparent Loss + Real Loss + Unidentified Loss = Total Water Loss

Targets and Goals

Provide the **specific and quantified five and ten-year targets** as listed in your current Water Conservation Plan. Target dates and numbers should match your Water Conservation Plan.

Helpful Hints: View Tutorial on Targets and Goals Here

Achieve Date	Target for Total GPCD	Target for Water Loss (expressed in GPCD)	Target for Water Loss Percentage (expressed in percentage)
Five-year target date: 2018	149	7	5 %
Ten-year target date: 2023	146	7	5 %

Gallons Per Capita per Day (GPCD) and Water Loss

Provide current GPCD and water loss totals. To see if you are making progress towards your stated goals, compare these totals to the above targets and goals.

Helpful Hints: View Tutorial on GPCD and Water Loss Here

Provide the population and residential water use of your service area.

Total System Input in Gallons	Permanent Population[1]	Total GPCD
137,512,000 Water Produced + Wholesale Imported - Wholesale Exported	2,499	151 (System Input ÷ Permanent Population) ÷ 365

1. Permanent Population is the total permanent population of the service area, including single family, multi-family, and group quarter populations.

Residential Use in Gallons (Single Family + Multi-family)	Residential Population[1]	Residential GPCD
98,953,600	2,499	108 (Residential Use ÷ Residential Population) ÷ 365

1. Residential Population is the total residential population of the service area, including only single family and multi-family populations.

Total Water Loss	Permanent Population	Water Loss	
		GPCD[1]	Percent[2]
5,428,400 Apparent + Real + Unidentified = Total Water Loss	2,499	6	4%

1. (Total Water Loss ÷ Permanent Population) ÷ 365 = Water Loss GPCD
2. (Total Water Loss ÷ Total System Input) x 100 = Water Loss Percentage

Water Conservation Programs and Activities

As you complete this section, review your utility's water conservation plan to see if you are making progress towards meeting your stated goals.

1. What year did your entity adopt or revise the most recent Water Conservation Plan? 2009

2. Does The Plan incorporate Best Management Practices? (●) Yes ( ) No

3. Using the table below select the types of Best Management Practices or water conservation strategies actively administered during this reporting period and estimate the savings incurred in implementing water conservation activities and programs. Leave fields blank if unknown.

Helpful Hints: Methods and techniques for determining gallons saved are unique to each utility as they conduct internal effective cost analyses and long-term financial planning. The 2004 Texas Best Management Practices Guide and the Alliance for Water Efficiency Water Conservation Tracking Tool may offer guidance on determining and calculating savings for individual BMPs.

Program/Activity	Estimated Gallons Saved
Conservation Analysis and Planning	
Conservation Coordinator	0
Water Survey for Single Family and Multi-family Customers	0
Financial	
Wholesale Agency Assistance Programs	0
Water Conservation Pricing/ Rate Structures	0
System Operations	
Water Loss Audits	1,000,000
Leak Detection	0
Universal Metering and Metering Repair	150,000
Landscaping	
Landscape Irrigation Conservation and Incentives	0
Athletic Fields Conservation	0
Golf Course Conservation	0
Park Conservation	0
Education and Public Awareness	
School Education	0
Public Information	100,000
Rebate, Retrofit, and Incentive Programs	
Conservation Programs for ICI Accounts	0
Residential Clothes Washer Incentive Program	0
Water Wise Landscape Design and Conversion Programs	0
Showerhead, Aerator, and Toilet Flapper Retrofit	0
Residential Toilet Replacement Programs	0
Rainwater Harvesting Incentive Program	0
ICI Incentive Programs	0

Conservation Technology	
Rainwater Harvesting and Condensate Reuse Programs	0
Regulatory and Enforcement	
Prohibition on Wasting Water	0
Other, please describe:	
TOTAL	1,250,000

4. For this reporting period, provide the estimated gallons of direct or indirect reuse activities.

Reuse Activity	Estimated Volume (in gallons)
On-site irrigation	0
Plant wash down	0
Chlorination/de-chlorination	0
Industrial	0
Landscape irrigation (parks, golf courses)	0
Agricultural	0
Other, please describe:	
Estimated Volume of Reuse	0

5. For this reporting period, estimate the savings from water conservation activities and programs.

Estimated Gallons Saved/Conserved	Estimated Gallons Recycled/Reused	Total Volume of Water Saved[1]	Dollar Value of Water Saved[2]
1,250,000	0	1,250,000	$ 3,300

1. Estimated Gallons Saved/Conserved + Estimated Gallons Recycled/Reused = Total Volume Saved
2. Estimate this value by taking into account water savings, the cost of treatment or purchase of water, and deferred capital costs due to conservation.

6. During this reporting period, did your rates or rate structure change? (●) Yes ( ) No

Select the type of rate pricing structures used. Check all that apply.

✓	Uniform Rates		Water Budget Based Rates		Surcharge - seasonal
✓	Flat Rates		Excess Use Rates		Surcharge - drought
	Inclining/Inverted Block Rates		Drought Demand Rates		Other, please describe:
	Declining Block Rates		Tailored Rates		
✓	Seasonal Rates		Surcharge - usage demand		

7. For this reporting period, select the public awareness or educational activities used.

	Implemented	Number/Unit
Example: Brochures Distributed	√	*10,000/year*
Example: Educational School Programs	√	*50 students/month*
Brochures Distributed	☐	
Messages Provided on Utility Bills	☑	13,200/year
Press Releases	☑	26/ year
TV Public Service Announcements	☐	
Radio Public Service Announcements	☐	
Educational School Programs	☐	
Displays, Exhibits, and Presentations	☑	1,500/year
Community Events	☐	
Social Media Campaigns	☐	
Facility Tours	☐	
Other :	☐	

Leak Detection and Water Loss

1. During this reporting period, how many leaks were repaired in the system or at service connections? 40

   Select the main cause(s) of water loss in your system.

   - [x] Leaks and breaks
   - [ ] Un-metered utility or city uses
   - [ ] Master meter problems
   - [x] Customer meter problems
   - [ ] Record and data problems
   - [ ] Other: _____
   - [ ] Other: _____

2. For this reporting period, provide the following information regarding meter repair:

	Total Number	Total Tested	Total Repaired	Total Replaced
Production Meters	1,162	0	0	1,162
Meters larger than 1 ½"	0	0	0	0
Meters 1 ½ or smaller	0	0	0	0

3. Does your system have automated meter reading? ○ Yes ◉ No

Program Effectiveness and Drought

1. In your opinion, how would you rank the effectiveness of your conservation activities?

	Less Than Effective	Somewhat Effective	Highly Effective	Does Not Apply
Residential Customers	○	○	◉	○
Industrial Customers	○	○	○	○
Institutional Customers	○	○	○	○
Commercial Customers	○	○	◉	○
Agricultural Customers	○	○	○	○

2. During the reporting period, did you implement your Drought Contingency Plan?
   ◉ Yes ○ No

   If yes, how many days were water use restrictions in effect? 183

   If yes, check the reason(s) for implementing your Drought Contingency Plan.
   - [x] Water Supply Shortage
   - [ ] High Seasonal Demand
   - [ ] Capacity Issues
   - [ ] Equipment Failure
   - [ ] Impaired Infrastructure
   - [ ] Other:

3. Select the areas for which you would like to receive more technical assistance:
   - [x] Best Management Practices
   - [ ] Drought Contingency Plans
   - [ ] Landscape Irrigation
   - [ ] Leak Detection and Equipment
   - [ ] Rainwater Harvesting
   - [ ] Rate Structures
   - [ ] Educational Resources
   - [ ] Water Conservation Annual Reports
   - [ ] Water Conservation Plans
   - [ ] Water IQ: Know Your Water
   - [x] Water Loss Audits
   - [x] Recycling and Reuse

SUBMIT

Appendix C
Water Conservation Plan 5-and 10-YR Goals for Water Savings
TWDB Form 1964

Water Conservation Plan Goals Table
TWDB Form No.1964
Revised 12/14/2012 1:53 PM

WATER CONSERVATION PLAN
5- AND 10-YR GOALS FOR WATER SAVINGS

Facility Name: City of Odem

Water Conservation Plan Year: 2013

	Historic 5yr Average	Baseline	5-yr Goal for year 2018	10-yr Goal for year 2023
Total GPCD[1]	159	151	149	146
Residential GPCD[2]	108	110	112	109
Water Loss (GPCD)[3]	18	11	7	7
Water Loss (Percentage)[4]	11 %	7 %	5 %	5 %

1. Total GPCD = (Total Gallons in System ÷ Permanent Population) ÷ 365
2. Residential GPCD = (Gallons Used for Residential Use ÷ Residential Population) ÷ 365
3. Water Loss GPCD = (Total Water Loss ÷ Permanent Population) ÷ 365
4. Water Loss Percentage = (Total Water Loss ÷ Total Gallons in System) x 100; or (Water Loss GPCD ÷ Total GPCD) x 100

Appendix D
Water Conservation Plan and Drought Contingency Plan Adoption Ordinance