Barton Springs Edwards Aquifer CONSERVATION DISTRICT

Historic Trinity
User Drought Contingency Plan
For

Irrigation Permittee
(Golf Courses, Athletic Fields, Turf & Landscape)

Table of Contents

INTRODUCTION

This UDCP will enable _____ *(the "Permittee")* to manage its water system and water resources in a conscientious, fair, and appropriate manner during certain situations when water use reductions are necessary. It is not designed to punish, stigmatize, or criticize anyone about their usage of water. Its sole intent is to maintain an adequate supply of water during the various stages of drought conditions or other water supply emergencies, which may occur from time to time.

The Permittee believes that significant reductions in water usage can be achieved through drought triggered water use restrictions and voluntary efforts. Implementation of voluntary water conservation measures and conscientious water use practices are encouraged at all times; however, additional water use restrictions are required in cases of extreme drought, periods of abnormally high usage, system contamination, or extended reduction in ability to supply water due to equipment failure. During drought, these efforts, if sufficiently effective, may delay the depletion of spring flows at Barton Springs and aquifer water levels until sufficient recharge is available to replenish the Aquifer. Should drought conditions reach more severe levels, the permittee has planned and is prepared to restrict or curtail certain types of usage.

SECTION 1. Declaration of Policy, Purpose, and Intent

_____ *(permittee),* in its continuing effort to maintain an adequate supply of high quality water, has prepared this UDCP with the guidance of the Barton Springs/Edwards Aquifer Conservation District (District). In order to maintain supply, storage, or pressure; or to comply with regulatory requirements, temporary restrictions may be instituted to limit nonessential water usage. This UDCP satisfies and complies with District Rules 3-7.5 and 3-7.7 related to Drought Management.

I, _____ *(print name)*, being the responsible official for _____ *(permittee)*, agrees to comply with all the applicable District Rules and the measures of the enclosed User Drought Contingency Plan, and to officially adopt the enclosed plan through the appropriate vehicle (i.e. ordinance, TCEQ tariff amendment, resolution, policy amendment, etc.)

_____(Signature of Responsible Official) _____(Date)

SECTION 2. Drought Notice

The District will notify permittees of the implementation or termination of each stage of the water restriction program. Permittees must then inform all facility personnel and/or tenants prior to implementation or termination of each stage of the water restriction program. Notice of the District declaration must be provided at least 72 hours prior to the start of water use restrictions. Notice posted onsite at the facility should contain the following information:

1. the date restrictions will begin
2. the circumstances that triggered the restrictions
3. the stages of response and explanation of the restrictions to be implemented

Upon notification of a Drought stage declaration by the District, the permittee will activate the respective response measures of its UDCP. The Permittee will perform the recommended and mandatory actions specified in this UDCP. The Permittee will curtail pumpage according to the following curtailment schedule:

Drought Curtailment Chart

	Edwards Aquifer					Trinity Aquifer
	Historical	Conditional				Historical
		Class A	Class B	Class C	Class D	
No Drought	0%	0%	0%	0%	0%	0%
Water Conservation (Voluntary)	10%	10%	10%	10%	10%	10%
Alarm	20%	20%	50%	100%	100%	20%
Critical	30%	30%	75%	100%	100%	30%
Exceptional	40%	50%[1]	100%	100%	100%	30%
Emergency Response Period	50%[3]	>50%[2]	100%	100%	100%	30%

1. Only applicable to Edwards LPPs and existing unpermitted nonexempts after A to B reclassification triggered by Exceptional Stage declaration
2. Curtailment > 50% subject to Board discretion
3. ERP (50%) curtailments become effective October 11, 2015. ERP curtailments to be measured as rolling 90-day average after first three months of declared ERP.

SECTION 3. Alternate Water Sources

The permittee will identify an alternate water source or other contingency to be utilized or implemented directly by the permittee to manage limited water supplies in the event of water supply contamination, system outage, or conditional permit curtailments. The alternate supply or other contingency shall be evidenced by documentation (contracts, affidavits, etc.) that demonstrates the availability when needed. **If no alternate water sources are identified, please provide a descriptive explanation as to why.**

The current available water sources and alternate contingency sources for the Permittee include:

Source: _____

Source: _____

SECTION 4. Facility Information

The permittee will periodically provide facility staff, employees, personnel and/or grounds maintenance crews with information about this 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 means such as employee training/meetings, via email, websites, or print notice. Permittee must notify facility personnel and/or grounds maintenance crews of the initiation or termination of drought responses stages. Documentation of these efforts shall be kept by the Permittee for record and provided to the District upon request.

SECTION 5. Enforcement Procedure

The UDCP must include a means of implementation and enforcement in accordance with District Rule3-7.5 (E). Specifically, each permittee must: 1) develop and implement procedures for enforcing this UDCP and 2) inform Permittee customers or facility personnel of the authority and intent to enforce the measures of the UDCP.

SECTION 6. Drought Stage Triggers and Responses

Permit Type: Historic Middle/Lower Trinity	
No Drought	No curtailment
Stage I Water Conservation (Voluntary)	10% curtailment
Stage II Alarm	20% curtailment
Stage III Critical	30% curtailment
Stage IV Exceptional	30% curtailment
Stage IV Emergency Response Period	30% curtailment

STAGE I: WATER CONSERVATION PERIOD

INITIATION:
The Permittee will recognize that Stage I Water Conservation Period exists when the District issues a Stage I Water Conservation Period declaration. This water conservation period will be in effect between May 1 and September 30 every year when not already in a declared drought period. The permittee will be expected to follow voluntary water use measures during this water conservation period. This status will be prominently noted on the next regular billing cycle but not more than 20 days following May 1.

TERMINATION:
The Permittee will recognize that Stage I Water Conservation Period may be rescinded when the District issues a No-Drought declaration or has declared a different drought stage. This water conservation period will not be effective during October 1 and April 30 every year.

RECOMMENDED ACTIONS:
Voluntary overall 10% monthly reduction.

RESPONSE MEASURES:
Continue measures of User Conservation Plan.

- Permittee will encourage procedures to adopt and implement the drought stage measures listed in Appendix A.
- Permittee shall implement a watering schedule or follow the District recommended watering schedule referred to in Appendix B.
- All meters throughout the facility shall be read as often as necessary to ensure compliance with monthly curtailments.
- Conduct a monthly Leak Detection Survey and immediately repair all identified leaks in the system.
- Monitor any construction activity and require contractors to report line breaks immediately or shutoff flow if possible.
- Follow recommended irrigation BMPs for turf and landscaping.

- Maximize process recycled water where possible.
- Employee personnel and system operators should regularly monitor the service area for occurrences of waste or excessive usage.
- Implement employee and personnel awareness efforts by providing training and placing signage in visible places throughout the onsite facility in order to inform employees of the prospective drought stage.
- Utilize the District's drought stages then utilize the correct terminology on all outreach signage, "Stage I Water Conservation Period".

STAGE II: ALARM DROUGHT

INITIATION:
The Permittee will recognize that Stage II Alarm Drought exists upon receiving notification from the Barton Springs/ Edwards Aquifer Conservation District that the District has declared the aquifer to be in a Stage II Alarm Drought; the permittee will activate the Stage II Alarm Drought measures of its UDCP.

TERMINATION:
The Permittee will recognize that Stage II Alarm Drought may be rescinded upon receiving notification from the Barton Springs/ Edwards Aquifer Conservation District that the District has declared No-Drought or has declared a different drought stage.

MANDATORY ACTIONS:
Mandatory overall minimum 20% monthly reduction.

RESPONSE MEASURES:
Continue measures of User Conservation Plan.

- Permittee shall establish procedures to adopt and implement the drought stage measures listed in Appendix A.
- Permittee shall implement a watering schedule or follow the District recommended watering schedule referred to in Appendix B.
- All meters throughout the facility shall be read as often as necessary to ensure compliance with monthly curtailments.
- Conduct a monthly Leak Detection Survey and immediately repair all identified leaks in the system.
- Monitor any construction activity and require contractors to report line breaks immediately or shutoff flow if possible.
- Follow recommended irrigation BMPs for turf and landscaping.
- Maximize process recycled water where possible.

- Employee personnel and system operators should regularly monitor the service area for occurrences of waste or excessive usage.
- Implement employee and personnel awareness efforts by providing training and placing signage in visible places throughout the onsite facility in order to inform employees of the prospective drought stage.
- Utilize the District's drought stages then utilize the correct terminology on all outreach signage, "Stage II Alarm Drought".

STAGE III: CRITICAL DROUGHT

INITIATION:
The Permittee will recognize that Stage III Critical Drought exists upon receiving notification from the Barton Springs/ Edwards Aquifer Conservation District that the District has declared the aquifer to be in a Stage III Critical Drought; the permittee will activate the Stage III Critical Drought measures of its UDCP.

TERMINATION:
The Permittee will recognize that Stage III Critical Drought may be rescinded upon receiving notification from the Barton Springs/ Edwards Aquifer Conservation District that the District has declared No-Drought or has declared a different drought stage.

MANDATORY ACTIONS:
Mandatory overall minimum 30% monthly reduction.

RESPONSE MEASURES:
Continue measures of User Conservation Plan.

- Permittee shall establish procedures to adopt and implement the drought stage measures listed in Appendix A.
- Permittee shall implement a watering schedule or follow the District recommended watering schedule referred to in Appendix B.
- All meters throughout the facility shall be read as often as necessary to ensure compliance with monthly curtailments.
- Conduct a monthly Leak Detection Survey and immediately repair all identified leaks in the system.
- Monitor any construction activity and require contractors to report line breaks immediately or shutoff flow if possible.
- Follow recommended irrigation BMPs for turf and landscaping.
- Maximize process recycled water where possible.
- Employee personnel and system operators should regularly monitor the service area for occurrences of waste or excessive usage.

- Implement employee and personnel awareness efforts by providing training and placing signage in visible places throughout the onsite facility in order to inform employees of the prospective drought stage.
- Utilize the District's drought stages then utilize the correct terminology on all outreach signage, "Stage III Critical Drought".

STAGE IV: EXCEPTIONAL DROUGHT

INITIATION:
The Permittee will recognize that Stage III Critical Drought exists upon receiving notification from the Barton Springs/ Edwards Aquifer Conservation District that the District has declared the aquifer to be in a Stage IV Exceptional Drought; the permittee will activate the **Stage IV Exceptional Drought** measures of its UDCP.

TERMINATION:
The Permittee will recognize that Stage IV Exceptional Drought may be rescinded upon receiving notification from the Barton Springs/ Edwards Aquifer Conservation District that the District has declared No-Drought or has declared a different drought stage.

MANDATORY ACTIONS:
Mandatory overall minimum 30% monthly reduction.

RESPONSE MEASURES:
Continue measures of User Conservation Plan.

- Permittee shall establish procedures to adopt and implement the drought stage measures listed in Appendix A.
- Permittee shall implement a watering schedule or follow the District recommended watering schedule referred to in Appendix B.
- All meters throughout the facility shall be read as often as necessary to ensure compliance with monthly curtailments.
- Conduct a monthly Leak Detection Survey and immediately repair all identified leaks in the system.
- Monitor any construction activity and require contractors to report line breaks immediately or shutoff flow if possible.
- Follow recommended irrigation BMPs for turf and landscaping.
- Maximize process recycled water where possible.
- Employee personnel and system operators should regularly monitor the service area for occurrences of waste or excessive usage.
- Implement employee and personnel awareness efforts by providing training and placing signage in visible places throughout the onsite facility in order to inform employees of the prospective drought stage.

- Utilize the District's drought stages then utilize the correct terminology on all outreach signage, "Stage IV Exceptional Drought".

STAGE V: EMERGENCY RESPONSE PERIOD

INITIATION:
The Permittee will recognize that Stage V Emergency Response Period exists upon receiving notification from the Barton Springs/ Edwards Aquifer Conservation District that the District has declared the aquifer to be in a Stage V Emergency Response Period; the permittee will activate the Stage V Emergency Response Period measures of its UDCP.

TERMINATION:
The Permittee will recognize that Stage V Emergency Response Period may be rescinded upon receiving notification from the Barton Springs/ Edwards Aquifer Conservation District that the District has declared No-Drought or has declared a different drought stage.

MANDATORY ACTIONS:
Mandatory overall minimum 30% monthly reduction.

RESPONSE MEASURES:
Continue measures of User Conservation Plan.

- Permittee shall establish procedures to adopt and implement the drought stage measures listed in Appendix A.
- Permittee shall implement a watering schedule or follow the District recommended watering schedule referred to in Appendix B.
- All meters throughout the facility shall be read as often as necessary to ensure compliance with monthly curtailments.
- Conduct a monthly Leak Detection Survey and immediately repair all identified leaks in the system.
- Monitor any construction activity and require contractors to report line breaks immediately or shutoff flow if possible.
- Follow recommended irrigation BMPs for turf and landscaping.
- Maximize process recycled water where possible.
- Employee personnel and system operators should regularly monitor the service area for occurrences of waste or excessive usage.
- Implement employee and personnel awareness efforts by providing training and placing signage in visible places throughout the onsite facility in order to inform employees of the prospective drought stage.
- Utilize the District's drought stages then utilize the correct terminology on all outreach signage, "Stage V Emergency Response (ERP) Drought".

Appendix A

Recommended Drought Stage Measures

Outdoor Irrigation

- Irrigation of a golf course or athletic fields - tees, greens, fairways, turf, landscape beds, playing fields, practice areas, driving ranges, and roughs - should be managed by an automatic irrigation control system.
- An irrigation control system shall operate to achieve optimal irrigation efficiency of a golf course or athletic fields using on-site weather station inputs to determine minimum irrigation volumes. The irrigation system shall also be maintained in accordance with the manufacturer's specifications.
- An irrigation control system operated for residential turf and landscape irrigation shall have their controllers manually set to achieve optimal irrigation efficiency and to program runtimes to be consistent with recommended watering practices.
- The irrigation system shall also be maintained in accordance with the manufacturer's specifications.
- Irrigate only between the hours of 8:00 p.m. and 5:00 a.m.

Turfgrass Management and Irrigation

- Avoid watering on windy days.
- Cut turf on highest setting and leave lawn clippings instead of collecting.
- Provide adequate and balanced levels of nutrients to the turf. Avoid excessive amounts of nitrogen, and apply nutrients based upon turf species and cultivar nutrient requirements, level of use and soil type.
- Use soil cultivation techniques such as spiking, slicing and core aerification to improve water infiltration and minimize runoff during irrigation or rainfall events.
- Use environmentally safe wetting agents to improve water infiltration.
- Explore the potential use of polymers as a means of increasing water retention and reducing water loss to evaporation.
- Limit cart traffic to paths to minimize turf wear and soil compaction.
- Prune roots of trees near critical turf areas to prevent tree root competition with the turf for moisture and nutrients.
- Utilize supplemental water sources where possible (e.g. purchased water, collected rainwater, etc.).
- Utilize water reuse where possible.

Landscape Management and Irrigation

- Avoid watering on windy days.
- Use drip irrigation in landscape areas to apply water only to the plants that need it.
- Use mulches in shrub and flowerbeds to reduce water evaporation losses.
- Consider use of polymers as a means of increasing water retention and reducing water loss to evaporation.
- Use xeriscape landscaping or native drought tolerant plants where feasible around buildings, parking areas or other appropriate places.

- Plant native vegetation when replacing vegetation.
- Utilize supplemental water sources where possible (e.g. purchased water, collected rainwater, etc.).
- Utilize water reuse where possible.

Power Washing or Vehicle Washing

- Vehicle and field equipment washing shall prohibited, unless the water used is recycled and re-circulated
- No washing of driveways, sidewalks, or streets.

Bathrooms/Other Indoor Facilities (if applicable)

- Check for toilet and faucet leaks and repair any found leaks immediately.
- Use water displacement device in toilet tank or replace older model toilets with HET models when possible.
- Install aerators on faucets.
- Turn off master water shutoff when facilities are not in use.
- Do not over water potted plants.

Permittee Actions:

- Post signs using District terminology at all faucets, sinks, outdoor spigots, and other water sources to remind visitors, customers, facility personnel, grounds maintenance crews and employees of the current drought stage curtailments (not an applicable requirement for residential irrigation).
- Inform employees or grounds maintenance crews of need to reduce water use.
- Monitor for occurrences of waste.
- Visually inspect lines and repair leaks on a regular basis.
- Monitor any construction activity and require contractors to report line breaks immediately or shutoff flow if possible.
- Evaluate system pressure needs and reduce pressure where excessively high.

The following uses of water are defined as nonessential and should be limited:

- wash down of any sidewalks, walkways, driveways, parking lots, tennis courts, or other hard-surfaced areas
- use of water to wash down buildings or structures for purposes other than immediate fire protection
- use of water for dust control unless required for mandatory regulatory compliance
- flushing gutters or permitting water to run or accumulate in any gutter or street
- failure to repair a controllable leak(s) within a reasonable period after having been given notice directing the repair of such leak(s) and
- any waste of water.

Appendix B

Recommended Watering Schedules

Use Type: Golf Course Irrigation

Drought Stage	Water Conservation Stage I	Alarm Drought Stage II	Critical Drought Stage III	Exceptional Drought Stage IV	Emergency Drought Stage V
Reduction Goals	**Voluntary 10%**	**Mandatory 20%**	**Mandatory 30%**	**Mandatory 30%**	**Mandatory 30%**
Irrigation/ Watering hours	**8pm - 5am**	**8pm - 5am**	**8pm - 5am**	**8pm - 5am**	**8pm - 5am**
Tees (including driving range) & Greens	Automated system (ET input)	Automated system (ET input)	Automated system (ET input)	Automated system (ET input)	Automated system (ET input)
Fairways	Automated system (ET input)	2x/week	2x/week	2x/week	2x/week
Landscape turf	Automated system (ET input)	2x/week	1x/week	1x/week	1x/week
Landscape beds	Automated system (ET input)	2x/week	1x/week	1x/week	1x/week
Practice areas	Automated system (ET input)	1x/week	Every other week	Every other week	Every other week
Roughs	Automated system (ET input)	Prohibited	Prohibited	Prohibited	Prohibited

Use Type: Athletic Field Irrigation

Drought Stage	Water Conservation Stage I	Alarm Drought Stage II	Critical Drought Stage III	Exceptional Drought Stage IV	Emergency Drought Stage V
Reduction Goals	**Voluntary 10%**	**Mandatory 20%**	**Mandatory 30%**	**Mandatory 30%**	**Mandatory 30%**
Irrigation/ Watering hours	**8pm - 5am**	**8pm - 5am**	**8pm - 5am**	**8pm - 5am**	**8pm - 5am**
Playing fields and practice fields	Automated system (ET input)	Automated system (ET input)	Automated system (ET input)	Automated system (ET input)	Automated system (ET input)
Landscape turf	Automated system (ET input)	2x/week	1x/week	1x/week	1x/week
Landscape beds	Automated system (ET input)	2x/week	1x/week	1x/week	1x/week

Use Type: Residential Turf/Landscape Irrigation

Drought Stage	Water Conservation Stage I	Alarm Drought Stage II	Critical Drought Stage III	Exceptional Drought Stage IV	Emergency Drought Stage V
Reduction Goals	**Voluntary 10%**	**Mandatory 20%**	**Mandatory 30%**	**Mandatory 30%**	**Mandatory 30%**
Irrigation/ Watering hours	**8pm - 5am**	**8pm - 5am**	**8pm - 5am**	**8pm - 5am**	**8pm - 5am**
Landscape turf	Automated system (ET input)	2x/week	1x/week	1x/week	1x/week
Landscape beds	Automated system (ET input)	2x/week	1x/week	1x/week	1x/week
Trees	1x/week	1x/week	1x/week	1x/week	1x/week