

TAWWA Drought Planning Survey Results

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Summary of Findings

Individual questions with predetermined response options and open field responses provided equally interesting insight into the state of conservation across the state and the needs and concerns of utilities. Across all questions a few trends emerged, as well as some noteworthy responses. Those are summarized here with a more detailed write-up following this section.

Voluntary Measures

The uselessness and impracticality of voluntary reduction measures during drought was a consistent theme throughout survey responses. Although some communities did express that residents answer the call to save when asked, most indicated that voluntary reduction of use was a non-starter toward actual water savings and tended to view it as a window during which they ramp up communications as opposed to a period when any actual reduction in use is accomplished. The utilities that did have success with voluntary reductions had fewer than 10,000 connections.

Enforcement

When it came to enforcement, **11 utilities indicated that they had not done any enforcement** or that enforcement options available to them had never been used. **Four utilities noted they had no formal enforcement actions developed.**

Monetary consequences such as fines, citations, and fees on the bill, were decidedly one of the most meaningful enforcement mechanisms available to utilities both for achieving compliance and water savings. However, seven utilities stated that while this is true, they **are becoming less effective over time.** For this group, even increased tiered rates or newly implemented fines were not changing behavior.

Second to financial motivators, designated watering schedules were perceived to be the next most effective water saver. Related, **14 utilities indicated that they had no form of watering schedule or watering restrictions when in drought.** This group of respondents was from all over Texas and included municipal utilities, districts, and water supply corporations with connection counts ranging from less than 3,000 up to 500,000. There was only one utility in common between these two groups.

80 utilities responded to a question about jurisdiction, with more than half stating that their municipal utility's service area was not confined to city limits. The only method identified to achieve demand management for customers outside of city limits was to implement drought plan requirements for wholesale customers outside of city limits. **No means to reach retail customers was identified. No enforcement mechanism was identified to ensure the wholesale customers complied.**

Wholesalers

31 respondents identified as being a wholesaler. When it comes to drought demand management, most wholesalers indicated they require conservation plans from their wholesale customers or obligate their customers to follow their own plan. However, enforcement of plan provisions is limited or non-existent. Only a few track wholesale customers use to discern whether the customer

is meeting cutback goals, but **jurisdictional and resource issues prevent substantive enforcement efforts.**

Program Evaluation

52 utilities responded that they do perform assessments of the effectiveness of their drought plans and programs. Of those, 42 perform their assessments using in-house staff with the remainder using outside consultants. However, only ten utilities offered to share assessment examples or case studies about programs or protocols. It is unclear whether this is because most utilities do not have documented examples, or whether they are limited in what can be made public.

The top responses for **efforts that are thought to achieve savings** were financial consequence, conservation pricing, leak detection, enforcement notification, enforcement notification in combination with financial consequences, metering and meter replacement programs, outreach and education, reuse, and flow restrictors, and **watering schedules.**

Automated Metering Infrastructure

Automated Metering Infrastructure (AMI) appeared throughout survey responses. **There is a shift underway to implement AMI or, for those already with AMI in place, to make better use of the data specifically for drought demand management.** Use of AMI data for program assessments and to share with customers ranked on high on pending use cases among utilities going this route. Along with this, there is interest in doing more to work with other departments to align efforts on communication, leak detection, and operational changes. **Utilities are looking for resources and examples of how best to accomplish these goals.**

Cooperation between City departments

One question set revealed that municipal utilities are either tightly aligned on conservation with proactive effort across city departments or experience completely siloed departments that do not work together. Lack of alignment is a top issue. Related, while utilities that do not charge for use at parks have the weakest relationships with parks departments **when it comes to conservation, relationships between conservation and parks departments were improved only slightly when park use was billable.** Based on free form responses, **departmental structure at the city level and prioritization of water management by city leadership are probably more important.**

Homeowners Associations

Not all utilities encounter HOAs in their service areas, but for those that do HOAs are a sore spot. **Work with HOA's may need to be treated as a stand-alone programmatic element in conservation with dedicated staff resources** (like a key account representative or concierge service), **to work on building relationships, special projects, and communications throughout the year.** Networking with them, keeping track of current contacts, getting adherence with drought rules, and gaining their participation in special programs are all efforts viewed as ineffective when done ad-hoc or inconsistently. Additionally, the examples of successful partnerships with HOAs indicate that a utility may only have a few significant relationships with HOAs. None of the respondents indicated whether dedicating staff to HOA work is expected to yield significant savings or landscape change.

Irrigation

Irrigation systems are one area where there is significant divergence across the state.

Even though it was identified as a key issue, involvement in irrigation installation ranges. Many conservation departments are involved in backflow and CSI processes to some extent, as well as irrigation plan review and inspection, but none indicated that their inspection process goes beyond checking installation. One utility noted expressly that the inspection does not include turning the system on. **Inspection processes for irrigation systems seem not to reflect the actual operation of the system.**

Only **18 utilities indicated special irrigation inspection programs for properties with large irrigation systems such as athletic fields, commercial sites, golf courses, or estate size residential.** Among this group there were no clear commonalities other than the majority being municipal (there were 4 non-municipal entities). They represented all parts of the state, all sizes of systems, a range of regional planning groups, and subject to a variety of groundwater districts and wholesaler rules. Notably, **two of these utilities indicated they had no involvement with routine irrigation inspections and were only involved in their large use programs.** Two more indicated they were involved in all aspects of irrigation, and the remaining all displayed varied involvement by age of irrigation and type of construction.

18 utilities stated they **exempt drip** irrigation from their watering schedule requirements either **year-round or in select stages of drought.** Some choose to exempt in early stages of drought and others exempt drip as drought stages advance.

Regional Alignment

Regional alignment for drought plans and drought plan implementation is inconsistent across the state. It depends on a number of external variables. Some utilities described thoughtful and proactive efforts to use the same rules, enter and exit stages at the same time, conduct joint messaging and parallel enforcement practices. **Other utilities said that** politics, utility leadership, differing supply sources, different wholesalers, being subject to different rules from wholesalers, river authorities and/or groundwater districts, lack of sufficient media outlets, and other **localized issues make regional alignment** difficult to communicate and justify to customers and is therefore **prohibitive.**

On-Going Challenges

64 utilities responded to a question about on-going challenges. **More than half of utilities cited a lack of dedicated staff resources, followed by political challenges and a newly-moved, previously out-of-state customer based.** The “Other” categories generated responses that included high water loss, the impact of repetitive messaging causing “negative news fatigue” that customers stop responding to, and hesitation on the part of management to declare drought because of potential customer backlash.

Question 33 included responses to challenges regarding enforcement. There were 72 responses. A majority 75% indicated that allocating staff resources was the main challenge when enforcing water conservation. 35% of respondents indicated that politics were a challenge in enforcement, citing issues of extraterritorial jurisdiction as a focus in this matter. Another 10% indicated lack of

a meaningful cost consequence. The balance of responses reflected a lack of importance for water conservation among the public and among city elected officials as a growing challenge in their city.

Developers were also mentioned several times in response to the open form question about growth management. This question exposed gaps between water resource planning on the part of utilities, special authorities, and districts, with city planning, county planning, and even other departments in the utility. In some cases, utilities serve areas that are unincorporated and there is virtually no supply management by entities (typically counties) controlling the growth process. Essentially, **those managing the resource are not sufficiently part of the process for community growth management to influence pre-emptive demand management. Only two utilities** (one municipal and one investor-owned) **indicated efforts to head-off demand management problems through developer service agreements.**

Although many of the challenges identified throughout the survey were localized, **11 utilities proposed legislative action on the following:**

1. Require reuse for irrigation in all new developments.
2. Impose rules that require consistency across GCDs.
3. State-level limitation on irrigation (x2).
4. State-level rules on what HOAs can require in landscapes.
5. State-wide unified drought stages.
6. Support investor-owned utilities to include a fine for non-compliance in their tariff, funds to support conservation and sustainability initiatives.
7. Equal treatment for small utilities to rely on remote monitoring.
8. Make TWDB GPCD targets more than a goal.
9. State-wide mandated education for all ages on water awareness, rules, and regulations, how to conserve, water quality, water resources, and water history in the State; and
10. Legislative clarifications on the issues raised in the Rio Ancho case.

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About the Survey

TAWWA, TWDB, and SAWS worked to create a state-wide survey to deepen understanding of practices and challenges related to drought demand management. The Survey was made available from November 2 through December 1, 2023. It consisted of 62 questions focused on: Drought Plan Effectiveness, Demand Management in Drought, Non-Compliance Consequences, Growth Management, and Continuing Issue Areas. The question set is included as *Attachment A: TAWWA Drought Plan Survey Set*. The survey was shared with conservation coordinators and similar professionals using contact information collected by the TAWWA Water Conservation and Reuse Division and TWDB. Email invitations to take the survey were sent to a total of 531 email addresses. A total of 121 responses were received (23% response rate) representing 116 distinct entities. Responses were collected in SurveyMonkey.com. Three responses were returned as PDF or Word files. Those three results were entered into SurveyMonkey on the respondents' behalf. Of those participating in the survey 79% indicated their contact information could be shared.

About the Respondents

Questions 1-6, 64

Questions 1 and 2 were collections of contact information. All utilities responded to question 3 which asked about the number of connections for each utility. Among respondents there was a good mix in size (by number of connections): 28% had fewer than 3,300 connections. Another 32% had between 3,300 and 10,000, 31% had between 10,000 and 100,000, eight percent had connection counts between 100,000 and 500,000, and just one percent had more than 500,000.

Question 64 asked respondents if they would like to participate in continued conversation on drought management in Texas. Forty-five expressed interest.

Question 4 asked respondents to identify their utility type. All utilities responded: 83% were municipal, 15% were a special district or authority that also provides retail service, and two percent were investor-owned.

There were 91 responses to question 5. Of those responses, 59 of the respondents are subject to the rule-making authority of a groundwater conservation district or special authority, and whose drought response rules may impact the utility's drought response planning.

There were 117 responses to question 6 which asked utilities to select their primary Regional Water Planning Group: every planning group was represented. Not captured due to the structure of the question is which utilities participate in multiple planning groups. Region C was the most significant planning group in the survey claiming 21% of the responses.

Q6 What Regional Water Planning Group(s) is your utility part of?

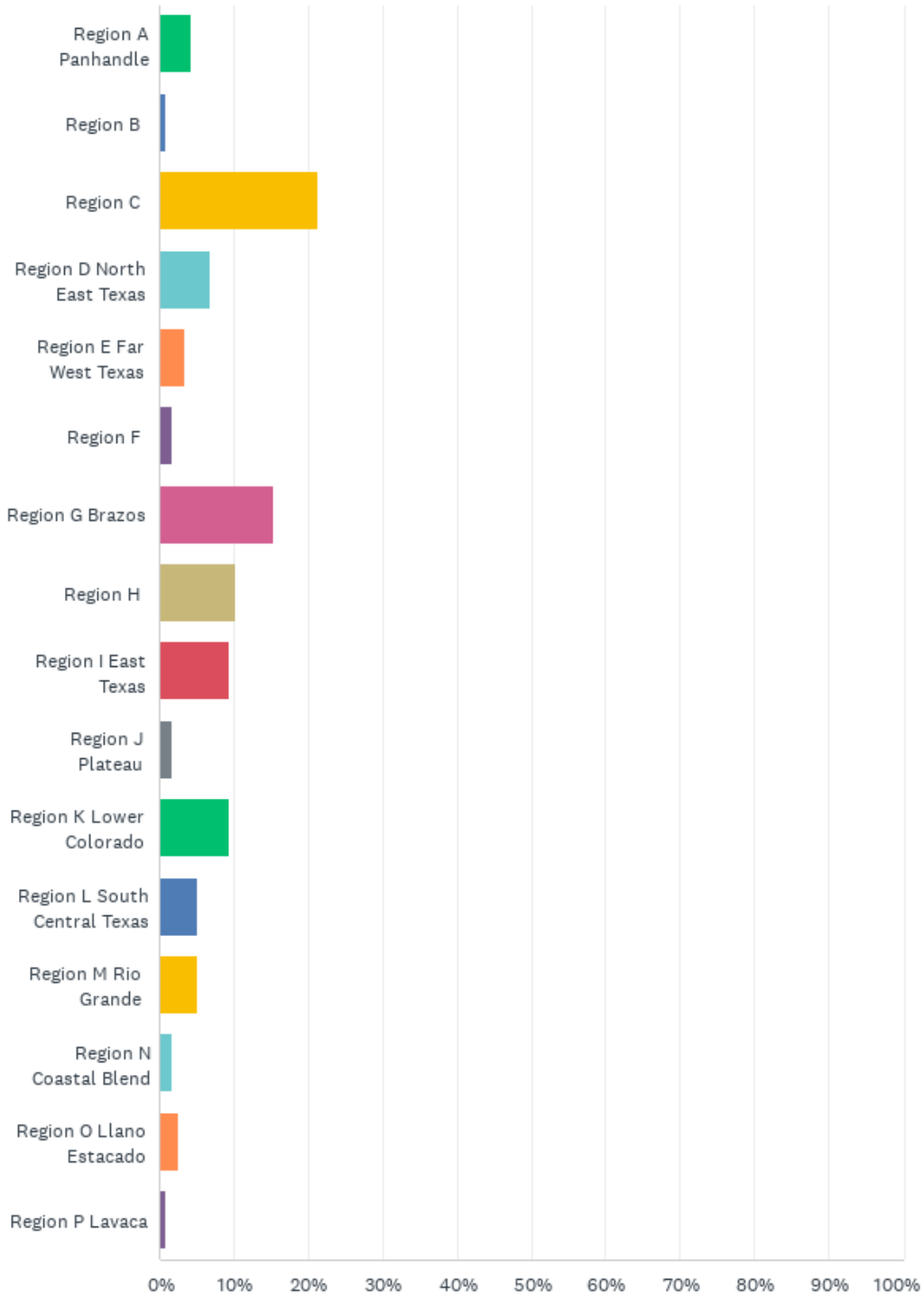


Chart 1: Respondents' Regional Water Planning Group(s)

Drought Plan Provisions
Questions 7, 9

Question 7 asked about the top three water saving drought plan provisions. 113 utilities responded deeming assigned watering schedules, metering all connections, and education and outreach the top water saving methods.

ANSWER CHOICES	RESPONSES
Assigned Watering Schedules	54.90%
Well-managed Irrigation System Standards	4.90%
Conservation Pricing in Rates	43.14%
Water Loss Control Programs	24.51%
Enforcement of Drought Rules	37.25%
Residential Irrigation Programs	8.82%
Residential Landscape Programs & Landscape Design	1.96%
Commercial Reuse Programs	6.86%
Education & Outreach Programs	39.22%
Awareness Campaigns	15.69%
Golf Course / Athletic Field Programs	1.96%
Metering all connections	45.10%
Indoor Retrofit Programs	0.98%
Other (please specify)	Responses 7.84%

Table 1: Top Water Saving Drought Plan Provisions

Among the “Other” category, AMI meter systems for leak detection or to make data available to customers was mentioned twice. Reuse offerings for irrigation was mentioned three times. And quick response leak repair program to resolve leaks within four hours was identified once.

Question 9 was an open field response option to the question: What efforts does your utility think achieve the most compliance with the drought plan? 100 utilities responded. The top responses included watering schedules (16), financial consequence, conservation pricing (8), leak detection (3), enforcement (16) of which four specifically noted the combination of enforcement with financial consequences, metering and meter replacement programs (7), outreach and education (30), reuse (3), and flow restrictors (1). Two said they had not had to implement their plan. Only one utility pointed to indoor programs.

Plan and Program Assessments

Questions 8, 10-14

There were 113 responses to question 10 asking whether the respondent's utility had any case studies or written assessments to share. Only ten utilities offered to share assessment examples or case studies about programs or protocols (9%). It is unclear whether this response trend is because most utilities do not have documented examples or whether they are limited in what can be made public. However, there were also 113 responses to question 10 asking whether utilities perform assessment of program efficacy. 63 utilities (56%) indicated they do perform assessments of the effectiveness of their drought plans and programs (question 11). Of those, 52 utilities (82%) perform their assessments using in-house staff with the remainder using outside consultants.

Question 12 asked about the tools used in performing assessments. 48 utilities answered. Responses included: precipitation data, production metering, program participation, operational distribution data, production meter calibration records, water loss records, SCADA data, customer meter data, temperature data, conservation pricing impacts, program records including irrigation evaluation records, review of patterns among high user group, review of capacity review of patterns in infrastructure and water supplies, and patterns among customer groups violating use restrictions.

Specific tools included SalesForce, PowerBi, Excel, WaterSmart, Access, OnBase, and custom-built tools with dashboard functionality.

Question 13 was an open form question that asked about any additional comments about assessing drought plan effectiveness. 38 utilities answered with responses consistent responses for other questions in this section. However, there were a few notable items that did not emerge from other questions in this section. These addressed:

- Utilities having no control over the management practices of shared surface water resources makes it difficult to plan and sometimes unfair when not all utilities drawing on a resource are demanding efficient use of their end users.
- Overlap between Drought Plan and normal Conservation practices makes it difficult to perform accurate assessments of some programs and rules.
- Such a tight correlation between temperature and demand that demand alone is difficult to manage.
- Transient population base makes effective communication difficult.
- Water rates being equitable does not just mean that water should be affordable for economically disadvantaged customers, but that rates should also account for the market share represented by high use customers.
- Difficulty understanding how to normalize weather data in order to perform better assessments.

Question 14 asked respondents to indicate the most impactful tools to actually reducing demand during drought. 100 utilities responded. Somewhat reflecting the responses in question 9, utilities cited watering rules, follow by education and outreach efforts, and then increased enforcement as the top tools used to help manage demand during drought.

Q14 Please indicate any of the tools below that your utility uses to help manage demand during drought. Please elaborate in the space provided and indicate the perceived or known effectiveness of each:

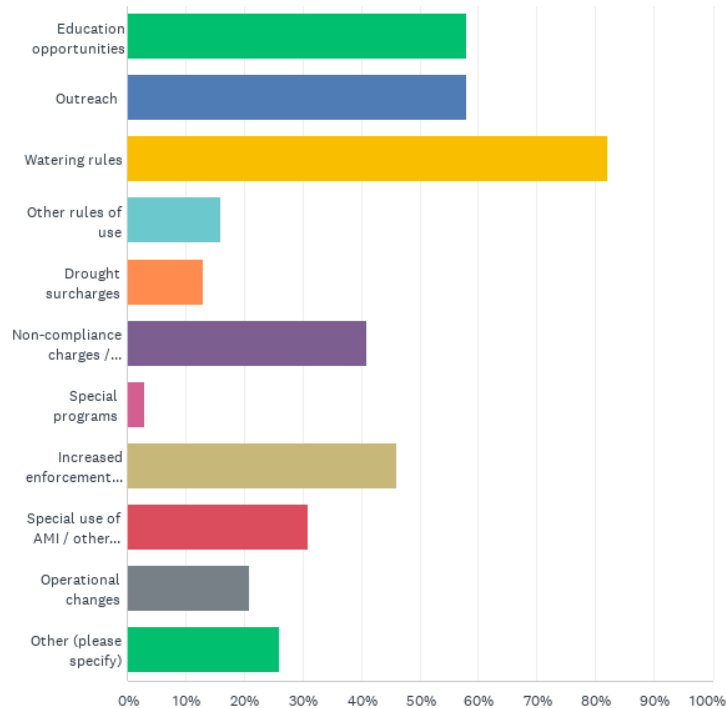


Chart 2: Tools that Reduce Demand During Drought

Additional items mentioned in the “Other” response section include:

- Pre-emptive warning that drought restrictions and possible violations are nearing.
- Tiered rate structures
- Custom coordination with large users
- Daily leak repair programs

One utility noted that its community does a good job of following voluntary watering schedules. This utility had fewer than 10,000 connections.

Irrigable Area
Questions 15 – 17

Question 15 asked whether the utility or city limited the size of irrigable area for residential construction. 102 utilities responded. Only 10 responded yes, that there is some limit in place. The utilities with this limitation in place differed in size (by connection count). This group was primarily municipal but did include one investor-owned utility that included rules in its developer utility service agreements. Rules limiting irrigation were implemented between 1990 and 2021

(question 16). The areas range from express limits of 4,000 – 13,000 square feet, but some also have percentage limitations such as no more than 50% of the lot (question 17).

Irrigation Inspections

Questions 18 – 20

Question 18 asked about the degree of involvement in the irrigation inspection process. When it comes to irrigation inspections, there is a range of participation and engagement on the part of utilities. Overall, utilities that are a city department tend to have more control over irrigation inspections and are more involved in the permitting process.

There were 88 respondents to question 18. 32% (28) indicated there was no involvement whatsoever. Nearly the same number (34%, 30 utilities) indicated they were involved in irrigation inspections for all new construction.

Please indicate the irrigation inspection processes your utility is involved in:

Answered: 88 Skipped: 33

ANSWER CHOICES	RESPONSES	
▼ New residential	25.00%	22
▼ New commercial	29.55%	26
▼ All new construction	34.09%	30
▼ Existing residential	10.23%	9
▼ Existing commercial	12.50%	11
▼ All existing construction	12.50%	11
▼ All irrigation systems regardless of construction type	19.32%	17
▼ All irrigation regardless of age	6.82%	6
▼ All irrigation	12.50%	11
▼ Not Involved	31.82%	28
▼ Other (please specify)	Responses 18.18%	16
Total Respondents: 88		

Table 2: Irrigation Inspection process Involvement

Details of the “Other” response category include notes that some utilities also handle reclaim water system installation, CSI and backflow inspections, and requirements for new commercial construction to have independent water conservation plans. Overall, the results indicate that most utilities involved in irrigation inspections also have authority over and/or responsibility for these related tasks.

Question 19 asked for a description of the utility’s role in irrigation inspections. Only 18 respondents provided answers indicating that backflow and CSI inspections were a primary focus in the inspection process. One utility shared that its city outsources the inspection of new irrigation to a private company.

Question 20 inquired about special inspection programs for properties with large irrigation systems such as athletic fields, commercial sites, golf courses, or estate size residential. 93 utilities responded, but only 18 said yes. Among this group there were no clear commonalities other than the majority being municipal (there were 4 non-municipal entities). They represented all parts of the state, all sizes of systems, a range of regional planning groups, and subject to a variety of groundwater districts and wholesaler rules. Notably, two of these utilities indicated they had no involvement with routine irrigation inspections and were only involved in their large use programs. Two more indicated they were involved in all aspects of irrigation, and the remaining all displayed varied involvement by age of irrigation and type of construction.

Question 21 was an open invitation to share any additional comments about managing demand during drought. 21 utilities answered sharing a range of anecdotes about their experience in managing drought. One shared that local ordinance requires commercial irrigation inspections every two years while another stated they don't actually have many large irrigation systems although the customer base is predominantly residential. Although there were only 21 responses, no two were alike – a reminder of how local water management can be.

Enforcement **Questions 22-31, 60**

Question 22 was an open field asking for what types of drought rule violations are there enforcement consequences. 77 utilities responded and all indicated that there were enforcement consequences for water waste (typically runoff, wrong time, wrong day). However, eight systems indicated their enforcement was much more expansive indicating that activity such as failure to control a leak, operating a broken or failing irrigation system, or operating an irrigation system during precipitation events or below freezing temperatures also carried consequences of fines or other monetary penalties. Some of the more expansive items are suggestive of environmental or operational considerations. For example, one specifically noted a prohibition of runoff to storm drains. One utility also indicated that failure to follow an emergency prohibition on use could constitute a violation.

Question 23 was also an open field and asked what consequences are used to address noncompliance. 73 utilities responded. Fines or fees on the bill were the top response (these were also identified as being the most impactful means of enforcement and a top means of actually achieving use reductions in question 29).

Question 24 asked whether all or some activities outlined in drought plans are enforced. In many communities there are aspects of drought plans that have become symbolic. 81 utilities responding. Of those, 67% of respondents said that all parts of their plan were enforced, with the remainder indicating they were selective in enforcement (question 25) choosing to focus on:

- Watering outside of designated days/times
- Water tampering

Question 25 was geared toward utilities that were selective in enforcement. 23 utilities responded and indicated that they focused on adherence to watering rules and other outdoor uses. None listed

indoor activities as a point of focus. Respondents also noted that they are strategic in enforcement choosing to look at:

- Repeat violators.
- Total use per meter

Question 28 asked about enforcement approaches that have been impactful. 61 responses were collected. Of these, the use of AMI data to identify potential violations, issuing warning letters or citations, and the public's ability to report violations were top responses. Four utilities noted no formal enforcement actions existed. Of all enforcement approaches, disconnections, flow restrictors, door tags, and direct personal contact with violators were considered meaningful.

Question 29 asked utilities to elaborate on those enforcement approaches that had been the least impactful. 50 utilities responded to this with most identifying public pleas to comply, awareness campaigns, and drought education. There were seven utilities that noted that while citations or fines were the most impactful and contributed to actual water savings, they were becoming less effective over time. For this group, even increased tiered rates or newly implemented fines were not changing behavior. Second to financial motivators, designated watering schedules were seen as the next most effective water saver.

While questions 28 and 29 concerned the efficacy of enforcement approaches it was notable that 14 utilities indicated that they had not done any enforcement or that enforcement options available to them had never been used. In fact, across all questions there was notable representation of utilities with drought plans that had never been implemented or enforced at all. The uselessness of voluntary reductions measures was another theme present throughout the survey. Although some communities did express that residents step up when asked, most indicated that voluntary reduction of use was a non-starter toward actual water savings.

Question 30 asks which rules seem to achieve the most water savings. Watering schedules were a top water saver. Conservation rates were second, with metering all accounts third. There was one mention of indoor requirements to install water saving shower heads, but the rest of the responses focused on outdoor use.

Question 31 inquired about which rules achieve little water savings but are highly symbolic. There were 50 responses which identified the following:

- Ornamental fountains
- Car washes
- Water served at restaurants
- Pool filling
- Toilet retrofits and water softener retrofits
- Hotel linen reuse
- Commercial pressure washing efficiency standards
- Voluntary reduction measures

Question 26 asked who performs enforcement activity. 79 utilities responded with 58 indicating that enforcement is primarily conducted by utility employees.

Q26 Who performs enforcement activity?

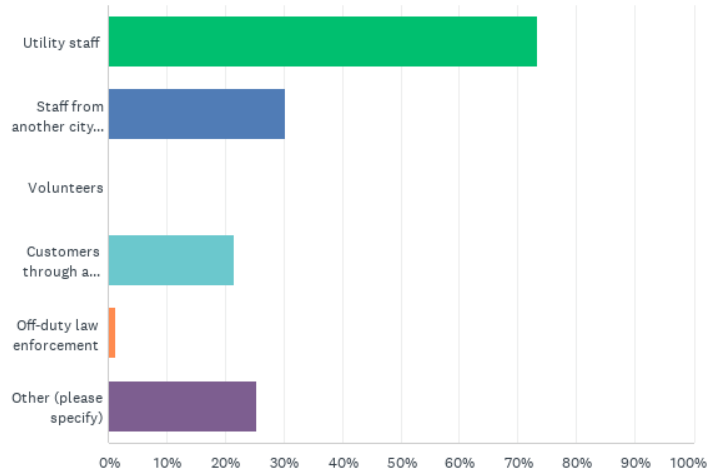


Chart 3: Who Performs Enforcement Activity?

The “Other” category on this question also revealed that Code Enforcement Officers play a big role. Of the 20 responses to this question, six said CEO’s. Board members, code enforcement, and local or county environmental inspectors were also named.

Q27 Where are non-compliance consequences stated?

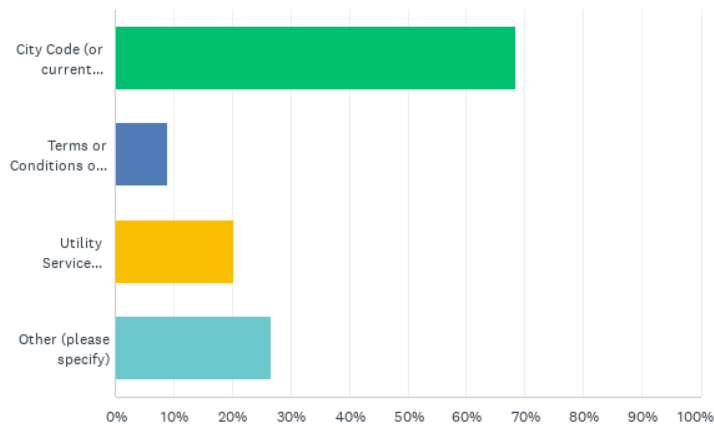


Chart 4: Where are Non-Compliance Consequences Stated?

Question 27 asks where non-compliance consequences are stated. 79 utilities responded with the majority of respondents (67%) identified City Code or ordinance. Another 21% pointed to utility service regulations, while 7% identified Terms and/or Conditions of Service. All the entities that identified utility service regulations are public entities, with all but three being water supply

corporations or special districts. Interestingly 27% pointed to other locations including with most identified water conservation and/or drought plans as the primary location for this information. However, a few also indicated rules are included in tariffs. Given the number of special districts and supply corporations represented in this group, it is most likely the case that the conservation and/or drought plans are attached to the tariff as is required by the PUC for these as opposed to rules actually being embedded in the tariff.

Question 32 questioned different ways water utilities can include enforcement opportunities that are not readily available in the drought plan. There were 48 responses. Utilities identified the use of AMI tracking as well as irrigation system regulation. Drought surcharges were also thought to help reduce demand during especially harsh weather conditions.

Q33 What are your biggest challenges in enforcement?

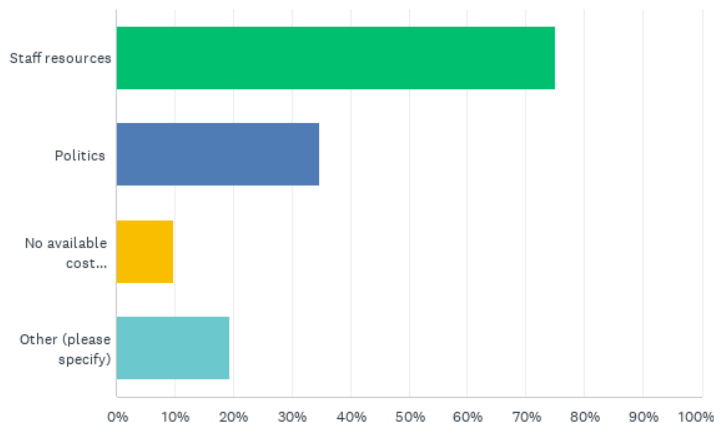


Chart 5: What are your biggest challenges in enforcement?

Question 33 included responses to challenges regarding enforcement. There were 72 responses. A majority 75% indicated that allocating staff resources was the main challenge when enforcing water conservation. 35% of respondents indicated that politics were a challenge in enforcement, citing issues of extraterritorial jurisdiction as a focus in this matter. Another 10% indicated a lack of a cost consequence. The balance of responses reflected a lack of importance for water conservation among the public and among city elected officials as a growing challenge in their city.

Question 60 asked how drought rule violations can be reported. There were 61 responses. Utilities identified online forms, anonymous hotlines and email addresses, phone calls, walk-ins, special apps, social media messaging, and contact with code compliance or City Hall as ways that violations could be reported.

Regional Alignment

Questions 34 – 39, 43 – 45

Question 34 asked whether a utility's service fell within city limits. 80 utilities responded. 47.5% of respondents answered yes, their utility covers within city limits. 52.5% of respondents answered no, their service area is not completely within the bounds of city limits.

Question 35 asked utilities to identify enforcement mechanisms for residential and commercial sites that remain outside of city limits. Responses from 21 utilities were collected. Most of the responses indicated there were no mechanisms. A few stated that there was some requirement for meeting reduction targets or otherwise matching the utility's activity, but there was still no means of enforcement.

Question 36 discusses the alignment of drought stages with neighboring communities. Only 23 utilities responded to this question with most answering there is no alignment. A majority of respondents answered that their water conservation plans and restrictions were identical to their neighboring utilities. Some even described comprehensive and proactive efforts to align on education and communication strategies. Others, however, indicated no or poor alignment and difficulty justifying alignment given different constraints such as using different water sources. In an open field response, one utility suggested statewide drought stages or drought stages declared at higher levels that reflect the state of water resources instead of geographic boundaries.

Question 37 questioned whether a utility was a wholesale provider. 83 utilities answered indicating that of respondents 37% are not wholesale providers, but 63% are.

Question 38 asked about the different approaches taken to enforce drought rules on wholesale customers. There were 49 responses. A majority of respondents mentioned:

- Follow permit cutbacks declared by special authorities.
- Follow the same water conservation plan and drought restrictions as their provider.
- Monitor year-round consumption to ensure wholesale consumers are reaching the same goals and cutbacks as providers.

A few respondents included that they have no approaches to enforcement, although they do review water conservation plans for their consumers.

Question 39 offered an open field for respondents to share general comments about non-compliance challenges and enforcements. 17 answered with many suggesting that implementing efficient irrigations systems and monitoring those systems more thoroughly as being a key next step in managing demand. One utility shared its interest in moving enforcement away from the municipal court system. Others emphasized continuing customer education during peak use periods.

Question 43 asked about collaborative efforts with cities, counties, or special districts or authorities. There were 24 responses. The breakout of these are shown below in Table 3. An interesting insight is that the responses in the "Other" category reflected more proactive

collaboration with wholesale suppliers or other entities that could make changes which impacted rates or cost of service.

Does your utility work collaboratively with any other city, county, GCD or River Authority on conservation rules or community water planning?

Answered: 24 Skipped: 97

ANSWER CHOICES	RESPONSES	
city - developmental services	45.83%	11
county - developmental services	12.50%	3
groundwater district	41.67%	10
separately incorporated cities	20.83%	5
city - office of sustainability / climate	12.50%	3
county - office of sustainability / climate	8.33%	2
Other (please specify)	Responses	50.00% 12
Total Respondents: 24		

Table 3: Collaborative Work on Community Water Planning?

Question 44 asked about efforts to support regional drought alignment. 55 utilities responded with many indicating work done with their wholesale supplier. One shared that it, “participate[s] in a regional irrigation recommendation program. When one or more utilities was under a defined irrigation schedule, we changed the weekly email to include a reminder to adhere to the specific schedule.”

More metro areas stated that they do work in conjunction with other area cities, but this can be difficult in areas that draw on different source supplies. Another utility mentioned state and county official involvement beyond just city officials and departments.

Question 45 asked why it’s not always possible to be consistent with neighbor utility stages. 69 utilities replied. The responses show that there are several challenges consistently preventing utilities from uniformly signaling the severity of drought conditions.

Why is it not always possible to be consistent in stage with neighbors?

Answered: 69 Skipped: 52

ANSWER CHOICES	RESPONSES
▼ Dissimilar water resources	56.52% 39
▼ Dissimilar enforcement resources	44.93% 31
▼ Neighboring drought conditions may be significantly different	33.33% 23
▼ Drought approaches are misaligned (resource management management vs customer convenience)	27.54% 19
▼ Politics	30.43% 21
▼ Other (please specify)	Responses 15.94% 11
Total Respondents: 69	

Table 4: Consistency of Drought Stage with Neighbors

Comments left in the “Other” category also noted staff resources, operational feasibility on the part of wholesalers were all their customers to focus demand on the same day, and alignment of the administrative process of declaring a drought stage.

Implementing Drought Stages

Questions 40 – 49

Question 40 addresses the best practices when getting customers to adhere and understand drought rules and restrictions. There were 65 responses to this question. Most respondents expressed multiple communication channels to reach customers throughout the city. These included:

- Phone Communication
- Website postings
- Social media
- Bill inserts
- Signs
- Letters to customers
- Weekly Newsletters

Other approaches identified included ramping up citations/fees and shut offs as drought conditions become more severe.

Question 41 addressed whether utilities implement different approaches to water conservation depending on the severity of the drought stage. 79 utilities responded with a near even split between those who replied yes versus those who replied no.

Q41 Does your utility use different approaches for early versus advanced drought stages?

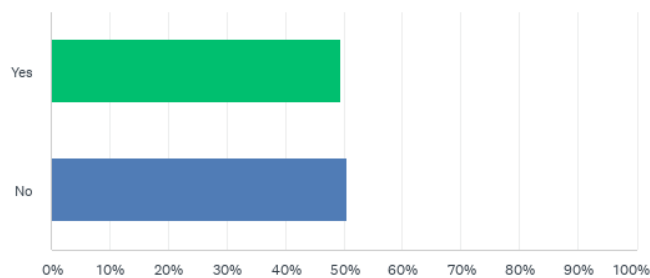


Chart 6: Does your utility use different approaches for early versus advanced drought stages?

Question 42 which asked for examples of how approaches change as drought worsens. 29 utilities responded. Most water utilities increase messaging when it comes to the severity of drought stages. One utility shared that it uses AMI data to determine whether customers are complying with drought rules. When it comes to irrigation many utilities also spread-out watering days and decrease the allotted time for watering as well as increase patrolling to cite customers who are not aware of the drought restrictions.

Question 46 questioned a utility's ability to implement triggers automatically where predetermined conditions are met or if they must get public and board approval prior to implementation. Responses were collected from 77 utilities, with 57% (44) saying they had hard triggers built into their plan. The remainder described an administrative process needing to be met such as going to a council or board before a stage could be declared.

Question 47 discusses the approach a utility takes when entering and exiting different drought stages. 73 utilities responded with 50 sharing that drought stage declarations are the result of resource management decisions. Another 4 said that customer convenience was prioritized. The remaining 19 utilities responded that there is a combination of both at play. For example, some utilities want to avoid changing trigger stages too often because it is difficult to get customers to follow the stage rules if the stage changes too often. These utilities will only change stages if necessary. Other utilities consider the drought forecast and time of year before changing stages, especially if it will impact tourism or holiday attractions.

Question 48 posed a question asking the ways in which a utility promotes awareness of drought stages with the community. There were 68 responses which consistently noted the use of:

- Website
- News Outlets
- Social Media
- Bill Inserts
- Billboards

Many of these utilities used targeted messaging among different end users and customer groups, especially in effort to target high water users.

Question 49 offered respondents space to share any additional comments about drought stages. 17 utilities responded with about half offering substantive responses. These focused on the need to revisit what baseline use is. This presented as acknowledgement of how difficult drought has become in some parts of Texas and that it is forcing utilities to redraw drought stages to ensure safe and continued operations of water systems.

HOA’s and Property Management Companies

Questions 50 – 53

Question 50 inquires about utility challenges with engaging HOAs and property management companies during drought. 54 utilities responded. Many utilities indicated new grass installation during drought as a common challenge. Nine respondents cited green grass requirements as a recurring issue. 21 utilities cited new landscape installation as a challenge for their utilities. Only four utilities cited all three issues as challenges with HOA’s and property management companies.

What topics have been broached with the HOAs and Property Management Companies?

Answered: 54 Skipped: 67

ANSWER CHOICES	RESPONSES	
new grass installations during drought	37.04%	20
green grass requirements during drought	22.22%	12
new landscape installation during drought	40.74%	22
Other (please specify)	Responses 48.15%	26
Total Respondents: 54		

Table 5: Discussion Topics with HOAs and Property Management Companies

Question 51 asked about the major hurdles in making meaningful connection with HOA’s and property management companies for purposes of communicating drought restrictions with them. Utilities could select more than one response for this question. There were 60 responses. 15 respondents cited a lack of current and local contact information for those specific properties. 26 respondents cited unresponsiveness while 25 of respondents cited difficulty tracking HOA’s and property management companies within the service area. There were also 21 selections of “Other”. The open field responses for this category reflected that some utilities have not started exploring HOAs as partners, some encounter inflexible rules when they do, and some do not have HOAs within their service area at all. One utility noted that in the early stages, developers run the HOA and have different priorities.

Question 52 asked about successful approaches to HOA engagement. 45 utilities responded. The most common responses reflect regular participation in HOA meetings and regular submissions to

HOA newsletters. One utility said it includes conservation provisions in the utility service agreement also known as the developer agreement to help establish constructive landscape rules for the development. With specific regard to enforcement, utilities said they typically maintain relationships with the irrigation companies instead and lock irrigation only meters when leaks or violations occur.

Conversely, Question 53 asked about unsuccessful approaches to HOA engagement. 34 utilities responded. The responses collectively suggest that HOA’s could be treated as their own programmatic element. Networking with them, keeping track of current contacts, getting adherence with drought rules, and gaining their participation in special programs are all efforts viewed as ineffective when done ad-hoc or inconsistently, as compared to other programs a utility might pursue.

Responses to questions 52 and 53 reflect a range of accomplishment when it comes to engaging HOAs and property management companies, but notable was that regardless of where on the success spectrum utilities fell, most only had few examples of engagement with HOAs.

City Amenities and City Works and Exemptions
Questions 54-56, 58

Question 54 asked utilities whether there were any drought rule exemptions for city or county Parks and Amenities, or other city works. This question allowed a utility to make multiple selections. There were responses from 63 unique utilities with most noting exemptions on use from private wells owned by the City.

ANSWER CHOICES	RESPONSES
Sports fields	30.16% 19
Commercial Nurseries	22.22% 14
City Improvement Projects	14.29% 9
Use from Private Wells	42.86% 27
Reuse	31.75% 20
Other (please specify)	Responses 33.33% 21
Total Respondents: 63	

Table 6: Drought Exemptions for City Works

Responses in the “Other” category option indicated that at many utilities subject city works to the same variance process available to any other customers. Use for dust abatement at construction sites per TCEQ requirements was also noted as an exemption. Another response revealed that a Special Utility District coordinated flushing to irrigate school athletic fields and gave some exemptions for drought rules for this effort.

Question 55 asked whether and how utilities work cooperatively with city amenities. There were 48 responses which revealed that municipal utilities are either tightly aligned on conservation and proactively align efforts across departments, or they have completely siloed departments that do

not work together. When compared to the results of question 56 (70 responses), “Do you Charge for use at city amenities, including parks?”, it appears that the utilities that do not charge for use at parks have the weakest relationships with parks when it comes to conservation. Though not an extreme swing in the opposite direction, there seems to be a better working relationship between parks and utilities when parks are charged for use.

Question 58 asks whether the utility exempts drip irrigation from the watering schedule requirements. Of the seventy-four respondents, eighteen replied yes. Some shared in the “Other” category that drip is exempted in lower stages of drought or conversely in advanced stages specifically for the purposed of tree irrigation. The most interesting piece of this question was the result that 14 of the respondents had no watering schedule at all. This group of respondents was from all over Texas and included municipal utilities, districts, and water supply corporations with connection counts ranging from less than 3,000 up to 500,000.

Does your utility exempt drip irrigation from its watering schedule?

Answered: 74 Skipped: 47

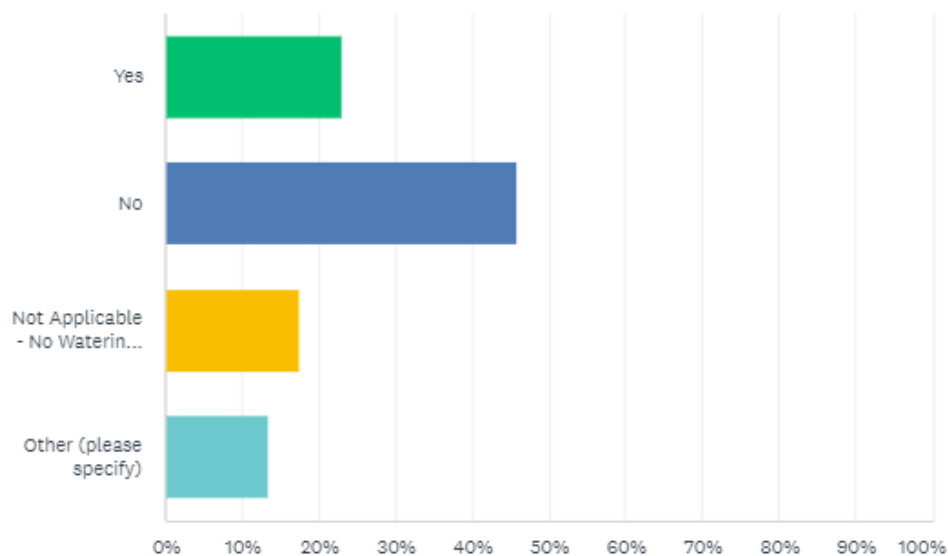


Chart 7: Does your utility exempt drip irrigation from its watering schedule?

On-Going Challenges in Water Management **Questions 57, 59, 61, 62**

Question 57 was an open field opportunity for utilities to share final thoughts about growth management. There were 18 responses which indicated that growth management is also one of the largest on-going challenges for Texas water utilities. Utilities with no association to local government processes consider growth management to be a challenge that is “out of our hands.” This was a recurring theme throughout the survey. Utilities of all types regard relationships with developers to be a particular frustration not only with adherence to drought rules and support of

drought management, but also with fairly contributing to infrastructure costs for additional supplies and storage. Utilities also shared the following issue areas:

- City is not discouraging development.
- Disconnect between those managing the resource and those making decisions about growth - these two groups are not aligned.
- Developers only respond to extreme measures.
- In rural communities the County is not active in water management planning and does not consult on water resources when approving plats.
- Growth during drought is a massive challenge.
- No ability to manage rate of growth as a Water Supply Corporation.
- Demand for expanding vacation community is difficult to manage.
- Unbilled water to city amenities and buildings as problematic as the city also grows.

Question 59 asked “What are on-going challenges your utility is facing when it comes to drought demand management?”. Multiple selections could be made. 64 utilities responded. More than half of utilities cited a lack of dedicated resources, followed by political challenges and a newly-moved, previously out-of-state customer based.

ANSWER CHOICES	RESPONSES
Exemptions for drip irrigation in water management	4.69% 3
Lack of dedicated media outlet(s) and/or shared media outlet(s) with neighbor utilities	18.75% 12
Exemptions for reuse/reclaimed water	3.13% 2
Exemptions for private wells	9.38% 6
Transient customer base	17.19% 11
Newly moved, previously out-of-state customer base	37.50% 24
Investor Owned Utility - few enforcement options due to regulations / lack of municipal powers	7.81% 5
Not enough dedicated resources	54.69% 35
Political challenges	35.94% 23
Service area is subject to independent drought rules from groundwater districts, authorities, or wholesale providers	12.50% 8
Water contracts are take-or-pay aka "use or lose"	12.50% 8
Other (please specify)	Responses 18.75% 12
Total Respondents: 64	

Table 7: On-Going Challenges in Drought Management

The “Other” category generated responses that included high water loss, staff resource constraints, the impact of repetitive messaging causing “negative news fatigue” and decreased customer response to messaging, and hesitation on the part of management to declare drought because of potential customer backlash.

Question 61 asked whether the respondent’s utility had identified possible legislative improvement opportunities. In total 68 utilities responded, but just 11 utilities responded yes. Question 62 offered space to share the proposed suggestion topic. All 11 utilities responding yes provided some detail. The suggestions include:

1. Require reuse for irrigation in all new developments
2. Impose rules that require consistency across GCDs
3. State-level limitation on irrigation (x2)
4. State-level rules on what HOAs can require in landscapes
5. State-wide unified drought stages
6. Support investor-owned utilities to include a fine for non-compliance in their tariff, funds to support conservation and sustainability initiatives. Investor-owned utilities have little means to enforce rules beyond flow restrictors.
7. Equal treatment for small utilities to rely on remote monitoring
8. Make TWDB GPCD targets more than a goal
9. State-wide mandated education for all ages on water awareness, rules, and regulations, how to conserve, water quality, water resources, and water history in the State
10. Legislative clarifications on the issues raised in the Rio Ancho case: (1) Determine when the TCEQ or PUC determine capacity requirements i.e., which agency determines adequacy of service; (2) define Reasonable Use; (3) Clarify appropriate use and length of use of Drought Management Plan; (4) Clarify and support authority of GCDs.

Attachment A: TAWWA Drought Plan Survey Set

TAWWA Drought Plan Survey

Contact and Utility Information

* 1. Please provide your contact information below:

Name	<input type="text"/>
Company	<input type="text"/>
Address	<input type="text"/>
City/Town	<input type="text"/>
State/Province	<input type="text"/>
ZIP/Postal Code	<input type="text"/>
Email Address	<input type="text"/>
Phone Number	<input type="text"/>

* 2. If asked, can TAWWA provide your contact information to other TAWWA members who have questions about your drought management plan?

- Yes
 No

* 3. How many connections does your utility have?

- < 3,300
 3,300 to 10,000
 10,000 to 100,000
 100,000 to 500,000
 > 500,000

* 4. What type of Water Service Provider is the utility?

- Municipal
 Investor-Owned
 Special District or Authority

5. What groundwater districts or special management authorities have jurisdiction over your service area?

6. What Regional Water Planning Group(s) is your utility part of?

- Region A Panhandle
- Region B
- Region C
- Region D North East Texas
- Region E Far West Texas
- Region F
- Region G Brazos
- Region H
- Region I East Texas
- Region J Plateau
- Region K Lower Colorado
- Region L South Central Texas
- Region M Rio Grande
- Region N Coastal Blend
- Region O Llano Estacado
- Region P Lavaca

TAWWA Drought Plan Survey

Drought Plan Effectiveness

7. What are the top three drought plan provisions that your utility thinks achieve the most water savings?

- Assigned Watering Schedules
- Well-managed Irrigation System Standards
- Conservation Pricing in Rates
- Water Loss Control Programs
- Enforcement of Drought Rules
- Residential Irrigation Programs
- Residential Landscape Programs & Landscape Design
- Commercial Reuse Programs
- Education & Outreach Programs
- Awareness Campaigns
- Golf Course / Athletic Field Programs
- Metering all connections
- Indoor Retrofit Programs
- Other (please specify)

8. Does your utility have assessment examples or case studies it's willing to share? Examples could cover achieved water savings, improved compliance, administratively realistic to implement, etc.

- Yes
- No

9. What efforts does your utility think achieve the most compliance with the drought plan?

10. Does your utility take steps to assess the effectiveness of the different provisions of its drought plan?

- Yes
- No

TAWWA Drought Plan Survey

Drought Plan Effectiveness

11. Is the assessment performed

- in-house by utility staff
- by consultants or other external professionals

12. What tools are used in performing plan assessments?

13. Please share any additional comments you have about assessing drought plan effectiveness:

TAWWA Drought Plan Survey

Demand Management in Drought

14. Please indicate any of the tools below that your utility uses to help manage demand during drought. Please elaborate in the space provided and indicate the perceived or known effectiveness of each:

- Education opportunities
- Outreach
- Watering rules
- Other rules of use
- Drought surcharges
- Non-compliance charges / citations
- Special programs
- Increased enforcement efforts
- Special use of AMI / other data
- Operational changes
- Other (please specify)

15. Does your utility or city limit the size of irrigable area permitted for new residential construction?

- Yes
- No

TAWWA Drought Plan Survey

Demand Management in Drought

16. What year was this limit put in place?

17. What is the allowable area for irrigation at newly constructed residences?

18. Please indicate the irrigation inspection processes your utility is involved in:

- New residential
- New commercial
- All new construction
- Existing residential
- Existing commercial
- All existing construction
- All irrigation systems regardless of construction type
- All irrigation regardless of age
- All irrigation
- Not Involved
- Other (please specify)

TAWWA Drought Plan Survey

Demand Management in Drought

19. Briefly describe what role your utility plays in irrigation inspections for new residential construction:

20. Does your utility or city have irrigation inspection programs for existing large irrigation systems such as athletic fields, golf courses, commercial sites, or estate sized residential?

Yes

No

21. Please share any additional comments you have about managing demand during periods of drought:

TAWWA Drought Plan Survey

Non-Compliance Consequences

22. For what types of rule violations are there enforcement consequence (water waste, wrong day watering, etc.)?

23. What consequences are used to address non-compliance?

24. Does your utility enforce on all non-compliance activity or is it selective?

- all non-compliance activity
- selective

Non-Compliance Consequences

25. If your utility is selective in enforcement, what violations are typically enforced?

TAWWA Drought Plan Survey

Non-Compliance Consequences

26. Who performs enforcement activity?

- Utility staff
- Staff from another city department
- Volunteers
- Customers through a reporting system
- Off-duty law enforcement
- Other (please specify)

27. Where are non-compliance consequences stated?

- City Code (or current Ordinance)
- Terms or Conditions of Service
- Utility Service Regulations
- Other (please specify)

28. Which approaches to enforcement have been the most impactful?

29. Which approaches to enforcement have been the least impactful?

30. Which rules seem to achieve the most water savings?

31. Which rules seem to achieve little water savings, but are symbolic in your utility's service area?

32. Are there any enforcement opportunities available to your utility but not included in the Drought Plan?

33. What are your biggest challenges in enforcement?

- Staff resources
- Politics
- No available cost consequence
- Other (please specify)

34. Does your utility's service area fall entirely within one city's limits?

- Yes
- No

TAWWA Drought Plan Survey

Non-Compliance Consequences

35. What enforcement mechanisms have been developed to reach those outside of city limits?

36. How does your utility align with drought stages for customers in separately incorporated cities?

TAWWA Drought Plan Survey

Non-Compliance Consequences

37. Is your utility a whole-sale provider?

- Yes
- No

TAWWA Drought Plan Survey

Non-Compliance Consequences

38. What approaches does your utility take to enforce against wholesale customers?

39. Please share any additional comments you have about non-compliance consequences:

TAWWA Drought Plan Survey

Stages of Drought

40. What are effective practices used by your utility to get customers to adhere to changes when implementing rules and stages of drought?

41. Does your utility use different approaches for early versus advanced drought stages?

Yes

No

TAWWA Drought Plan Survey

Stages of Drought

42. What are examples of how the approaches change?

43. Does your utility work collaboratively with any other city, county, GCD or River Authority on conservation rules or community water planning?

- city - developmental services
- county - developmental services
- groundwater district
- separately incorporated cities
- city - office of sustainability / climate
- county - office of sustainability / climate
- Other (please specify)

44. How does your utility support regional drought response (efforts to align to plans, messaging, drought stage among neighbors or those using shared resources)?

45. Why is it not always possible to be consistent in stage with neighbors?

- Dissimilar water resources
- Dissimilar enforcement resources
- Neighboring drought conditions may be significantly different
- Drought approaches are misaligned (resource management management vs customer convenience)
- Politics
- Other (please specify)

46. Does your utility implement hard triggers (inflexible, hit the trigger and you enter automatically and respond accordingly without going to council, board, etc.)?

- Yes
- No

47. When deciding to enter or exit a drought stage, does your utility prioritize the stability of the resource or the convenience to customers?

- Resource management approach
- Customer convenience approach
- Both / Depends (please specify)

48. In what ways does your utility promote drought stage awareness among customers and the community?

49. Please share any additional comments you have about stages of drought:

TAWWA Drought Plan Survey

Growth Management

50. What topics have been broached with the HOAs and Property Management Companies?

- new grass installations during drought
- green grass requirements during drought
- new landscape installation during drought
- Other (please specify)

51. What are the particular challenges you have in engaging HOAs and Property Management Companies?

- Current local contact information
- Unresponsive
- Difficult to track
- Other (please specify)

52. What are some successful ways your utility engaged HOAs and Property Management Companies?

53. What are some unsuccessful ways your utility engaged HOAs and Property Management Companies?

54. Does your utility have any drought rule exemptions for city or county Parks and Amenities, or any city works?

- Sports fields
- Commercial Nurseries
- City Improvement Projects
- Use from Private Wells
- Reuse
- Other (please specify)

55. How does your utility engage with city or county Parks and Amenities on conservation?

56. Does your utility charge the City and/or all City Amenities, including parks, for the water it uses?

- Yes
- No

57. Please share any comments you have about growth management:

TAWWA Drought Plan Survey

Continuing Issue Areas

58. Does your utility exempt drip irrigation from its watering schedule?

- Yes
- No
- Not Applicable - No Watering Schedule
- Other (please specify)

59. What are on-going challenges your utility is facing when it comes to drought demand management?

- Exemptions for drip irrigation in water management
- Lack of dedicated media outlet(s) and/or shared media outlet(s) with neighbor utilities
- Exemptions for reuse/reclaimed water
- Exemptions for private wells
- Transient customer base
- Newly moved, previously out-of-state customer base
- Investor Owned Utility - few enforcement options due to regulations / lack of municipal powers
- Not enough dedicated resources
- Political challenges
- Service area is subject to independent drought rules from groundwater districts, authorities, or wholesale providers
- Water contracts are take-or-pay aka "use or lose"
- Other (please specify)

60. How does your utility enable the community to report issues or drought rule violations?

61. Has your utility identified any items that could be recommended to the legislature to support drought management?

- Yes
- No

TAWWA Drought Plan Survey

Continuing Issue Areas

62. Please provide an overview of the recommendation(s):

63. Please share any additional comments you have about issues of particular concern:

64. Are you interested in participating in industry dialogue on drought management in Texas?

Yes

No