Water Loss, Use, and Conservation Workshop

Agenda:

1. **Introductions**
   - *Conservation Manager John Sutton*
2. **New Login Application (okta)**
   - *Conservation Team Lead Daniel Rice*
3. **Water Use Survey and Viewer**
   - *Jane Bullan*
   - *Genera Navarra*
4. **Water Loss Audit Parts 1 & 2**
   - *Mark Mathis*
5. **Water Conservation**
   - *Conservation Staff*
6. **Financial Assistance**
   - *Scott Galaway*

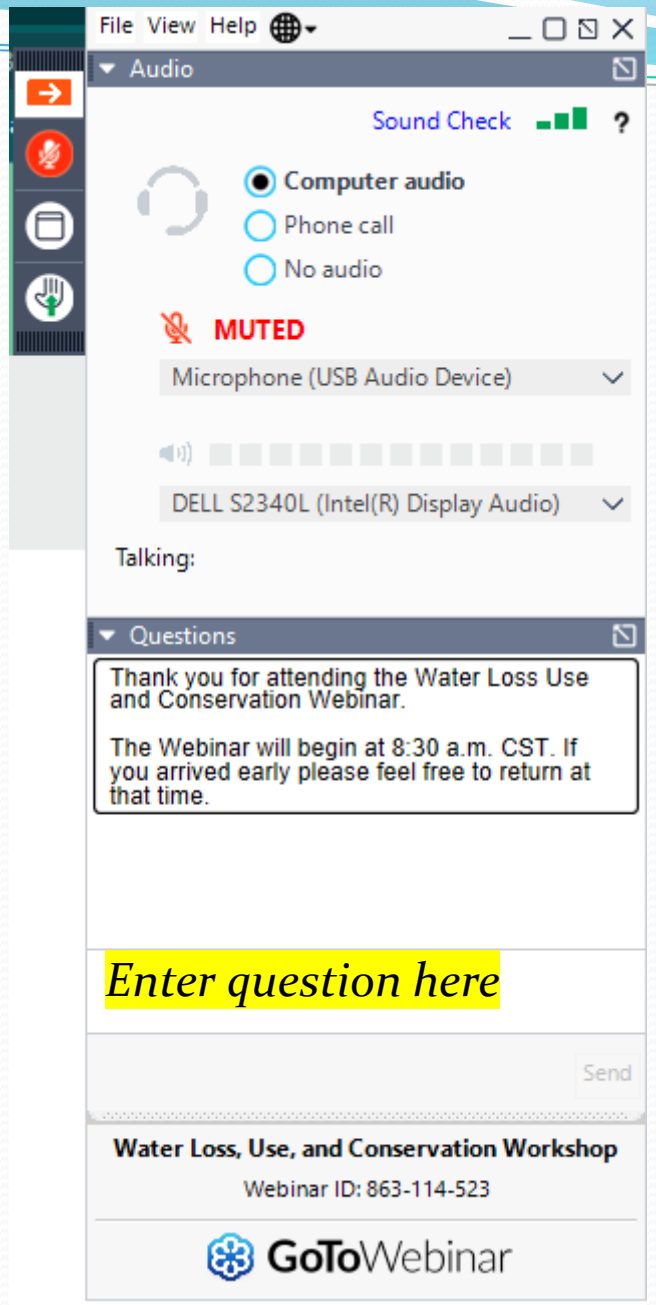
Specific questions?

Be sure to ask questions with the **'question feature'** on the side panel!

For those seeking TCEQ 4 CEU Hours, they will be given upon full attendance of the entire workshop presentation.

Texas Water Development Board

POLL


File View Help
Audio
Sound Check
Computer audio
Phone call
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MUTED
Microphone (USB Audio Device)
DELL S2340L (Intel(R) Display Audio)
Talking:
Questions
Thank you for attending the Water Loss Use and Conservation Webinar.
The Webinar will begin at 8:30 a.m. CST. If you arrived early please feel free to return at that time.
Enter question here
Send
Water Loss, Use, and Conservation Workshop
Webinar ID: 863-114-523
GoToWebinar

Water Loss, Use, and Conservation Workshop

PLEASE REMEMBER!

1. **Training certificates will be emailed and *may* take up to <u>two weeks to be sent out to the individual registrants</u>. (make sure we have your operator number)**

2. **Copies of the presentation will be available in PDF format.**

3. **Those seeking TCEQ credit hours must be <u>individually registered</u> and viewing today's presentation in full to receive credit or contact us immediately at <u>WLA-Group@twdb.Texas.gov</u> with proof.**

4. **You can always email the presenters directly with specific questions.**

Texas Water Development Board

POLL

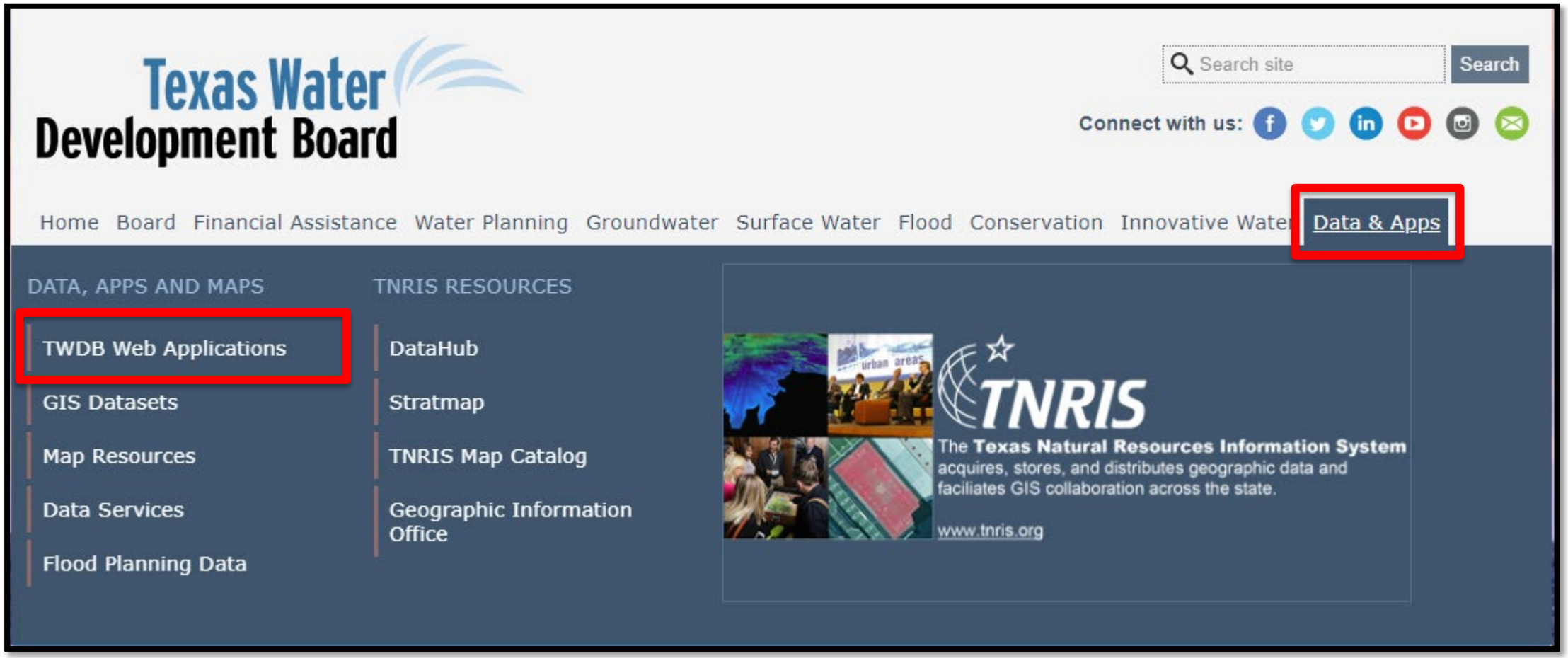
New Login Application
and requesting access to your reports

Daniel Rice
Municipal Conservation Team Lead

Wait, what's happening?

- Transition the login application for reporting your water use survey, water loss audit, and water conservation reports (LUC apps) from APM to okta
- If you have an existing account with a good/accessible email, then you still have access to your water systems in LUC
  - Your email is your username
  - You must "Sign-up" in okta (you can do it today!)
  - Any bookmarked links to APM will take you to okta
    - Replace with okta links

Okta Walk-through



Texas Water Development Board

https://www.twdb.texas.gov/apps/overview.asp

Search site Search

Connect with us:

Home Board Financial Assistance Water Planning Groundwater Surface Water Flood Conservation Innovative Water Data & Apps

TWDB Web Applications

Water Use Survey

Launch Application:

okta

Sign-in Help:
Okta User Guide

Summary:
The Water Use Survey application can be used by reporting entities to complete and submit their survey to TWDB. Texas State Law requires entities using self-supplied or purchased groundwater, surface water or reuse for municipal, industrial, power generation or mining to submit a completed annual water use survey. For more information, please see:

- Water Use Survey webpage
- How to use Online Water Use Survey

Contact:
waterusesurvey@twdb.texas.gov

Water Loss Audit

Water Conservation

TWDB Web Applications (Overview)
Okta User Guide
APM User Guide

Texas Water Development Board

Sign In

Username

Next

Need help signing in?

Don't have an account? Sign up

Texas Water Development Board

Create Account

Email * Use same as APM

Password *

First name *

Last name *

Primary phone *

Multi-Factor Authentication (MFA) for Enhanced Account Security: Turn on MF... ▲ | Turn on MFA | Turn off MFA

* indicates required field

Register

Back to sign in

Texas Water Development Board

Verification email sent

To finish signing in, check your email.

Back to sign in

Texas Water Development Board Application Portal - Activate Account Inbox ×

Okta <noreply@okta.com> 9:57 AM (6 minutes ago)

to me

Texas Water Development Board

Welcome to the Texas Water Development Board Application Portal!

Hi Daniel Test,

The Texas Water Development Board (TWDB) is managing its web applications through Okta. This means you may conveniently access all TWDB applications you normally use through a single, secure portal page.

Click the following link to activate your Okta account:

Activate Okta Account

This link expires in 7 days.

Your username is [redacted]

Our new TWDB sign-in page is https://apps.twdb.texas.gov.

Texas Water Development Board

Sign In

Username

Daniel.Rice@twdb.texas.gov

Password

Sign In

Need help signing in?

Welcome to Texas Water Development Board, Daniel Test!

Create your Texas Water Development Board account

Choose a forgot password question

What is the food you least liked as a child?

Answer

Add a phone number for resetting your password or unlocking your account using SMS (optional)

Okta can send you a text message with a recovery code. This feature is useful when you don't have access to your email.

Add Phone Number

Click a picture to choose a security image

Your security image gives you additional assurance that you are logging into Okta, and not a fraudulent website.

Create My Account

Forgot Password Text Message X

Enter the phone number you'll use to receive codes via text message, then click Send Code to verify that it works.

Country

United States

Select the country where your phone is registered.

Phone number

Enter your number the way you normally dial it. Do not add your country code prefix.

Send Code

Add a phone number for resetting your password or unlocking your account using SMS (optional)

Okta can send you a text message with a recovery code. This feature is useful when you don't have access to your email.

Add Phone Number

Forgot Password Text Message X

Check your phone for the passcode and enter it below. Your message should arrive in less than a minute.

Enter code

Verify

Back

Done

Choose a forgot password question

What is the food you least liked as a child?

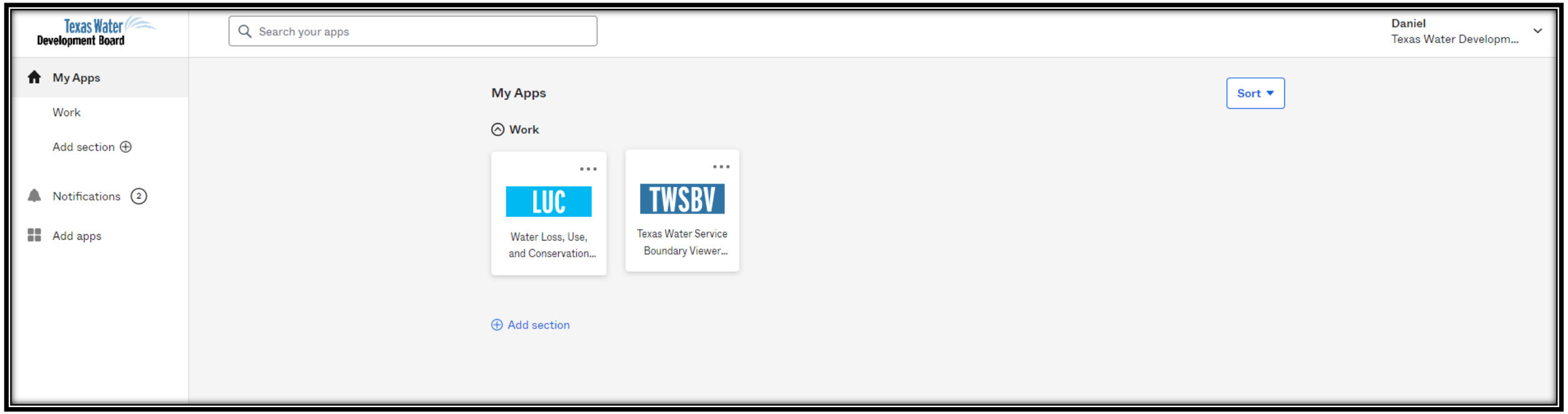
Answer

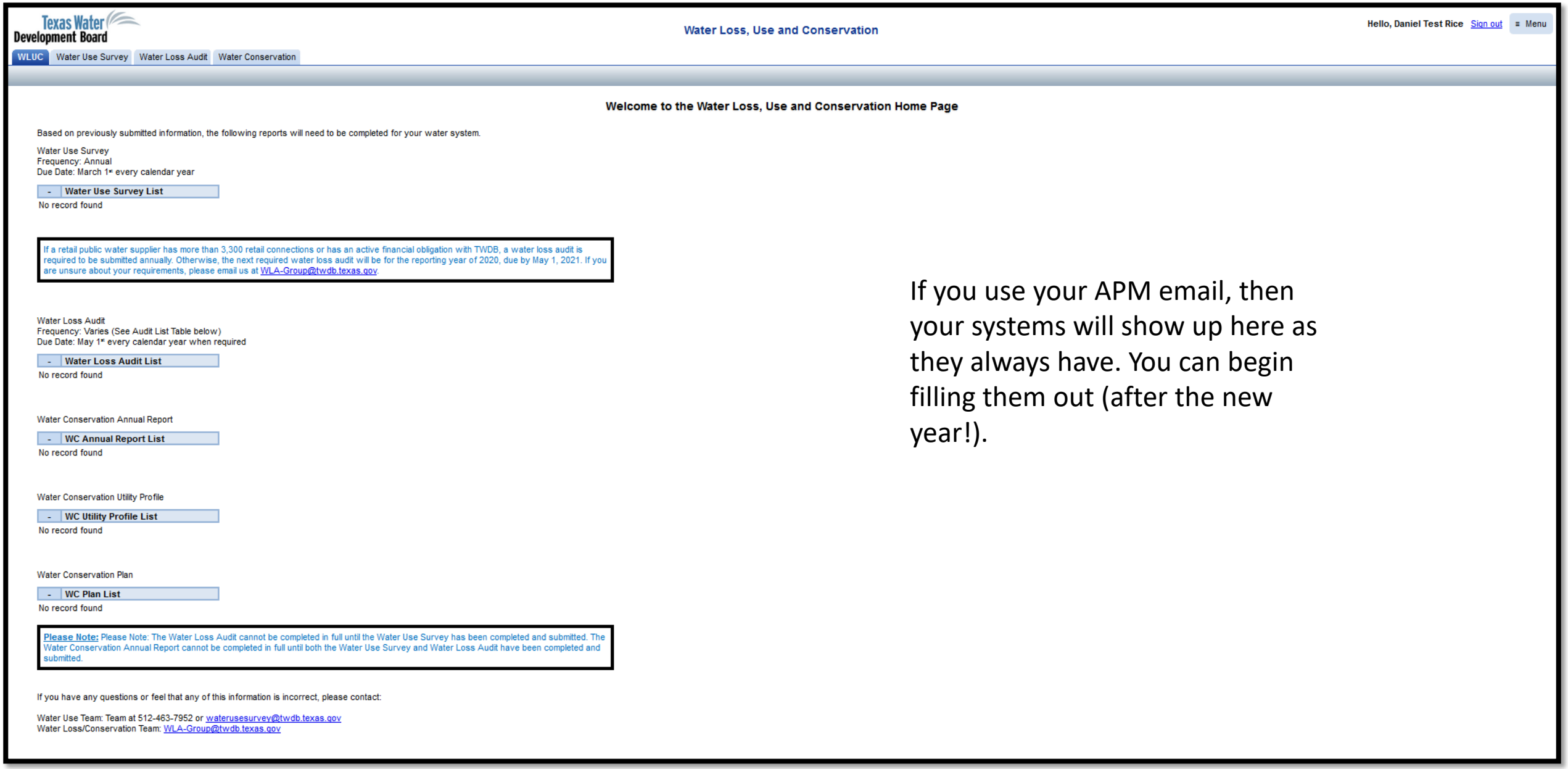
Add a phone number for resetting your password or unlocking your account using SMS (optional)

Okta can send you a text message with a recovery code. This feature is useful when you don't have access to your email.

Add Phone Number

LUC Apps from okta

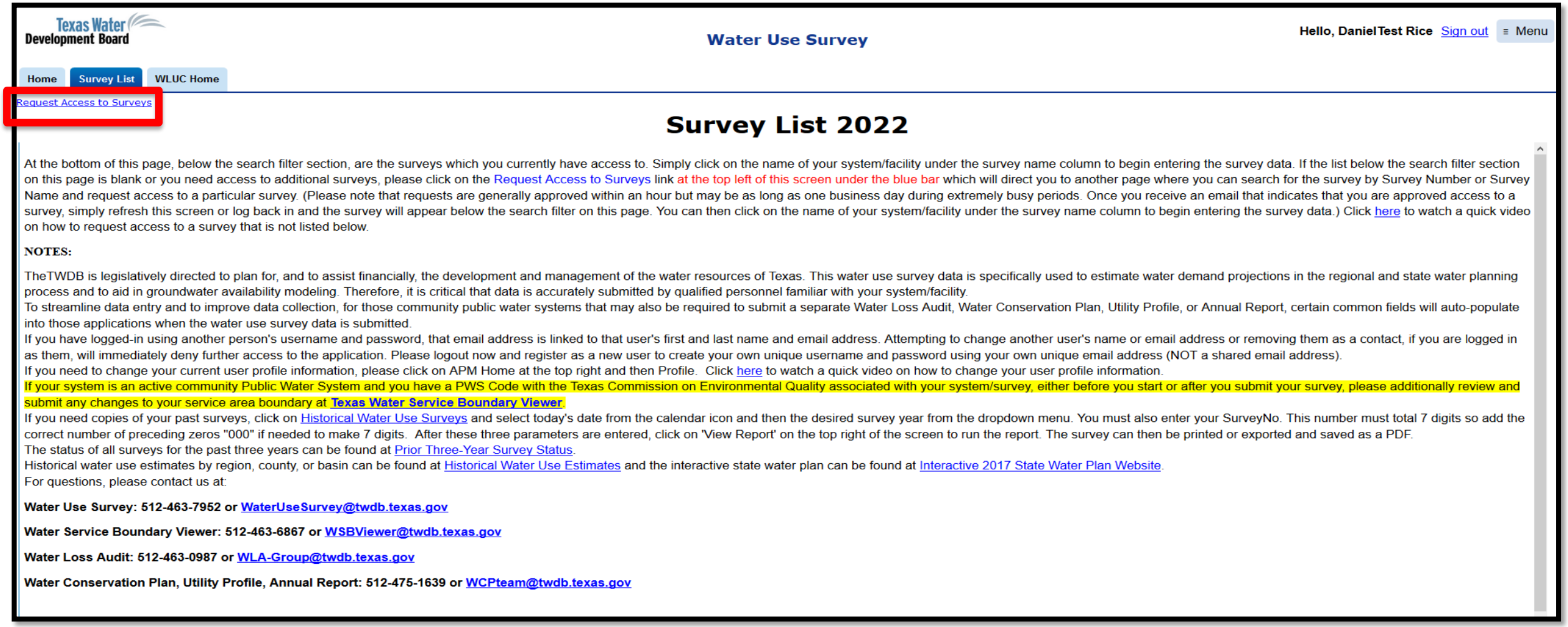




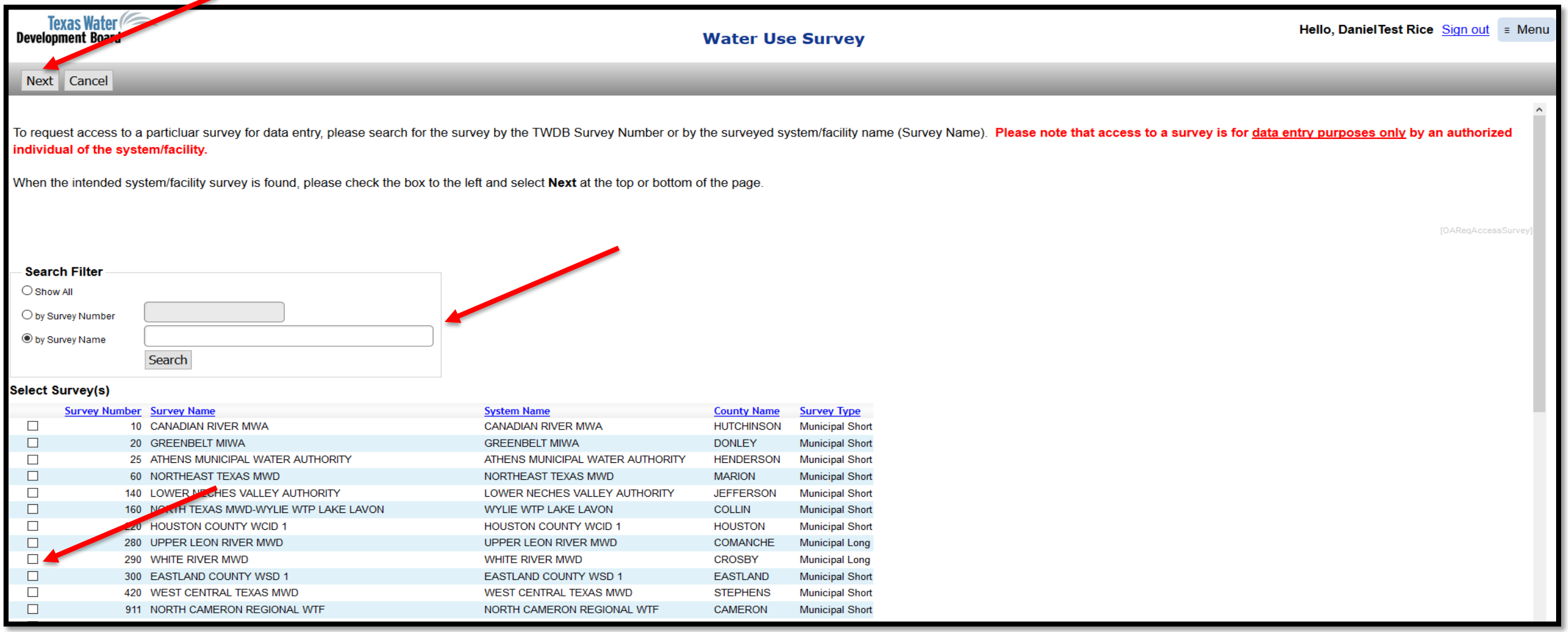
If you use your APM email, then your systems will show up here as they always have. You can begin filling them out (after the new year!).

Requesting Access to Reports – Water Use Survey

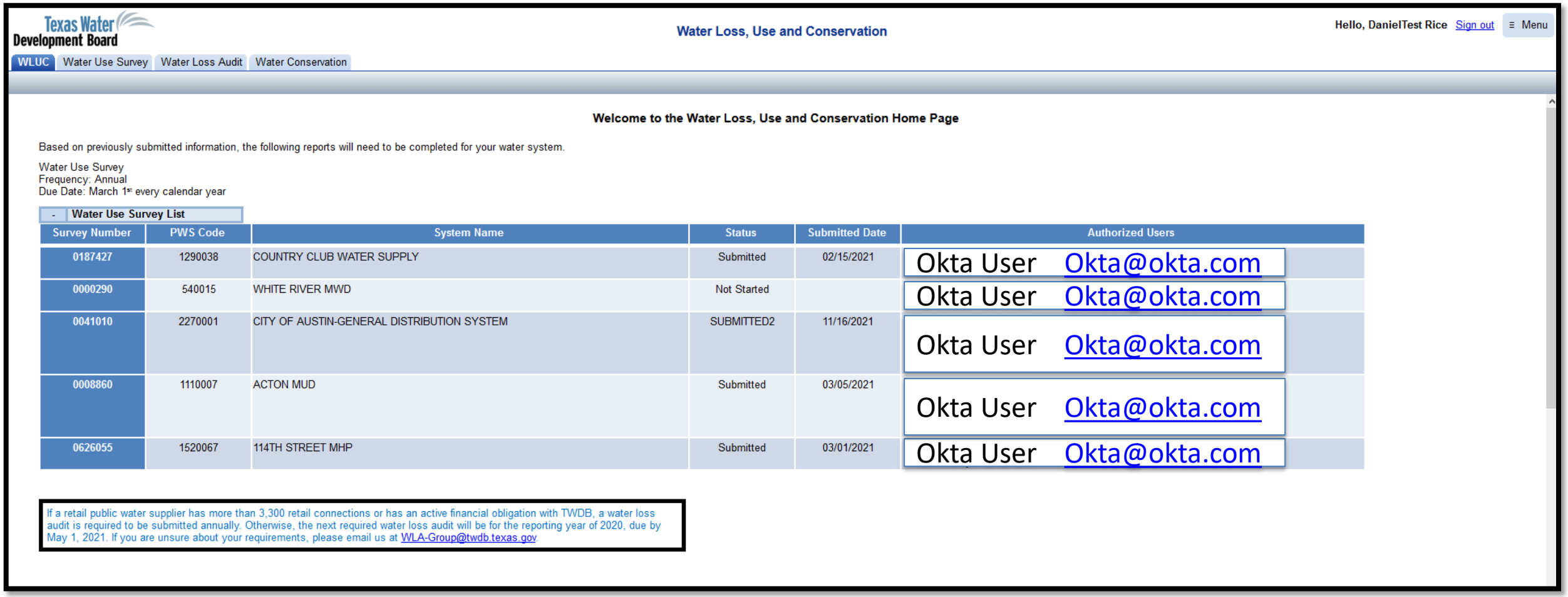
Request Access to Water Use Survey



Request Access to Water Use Survey

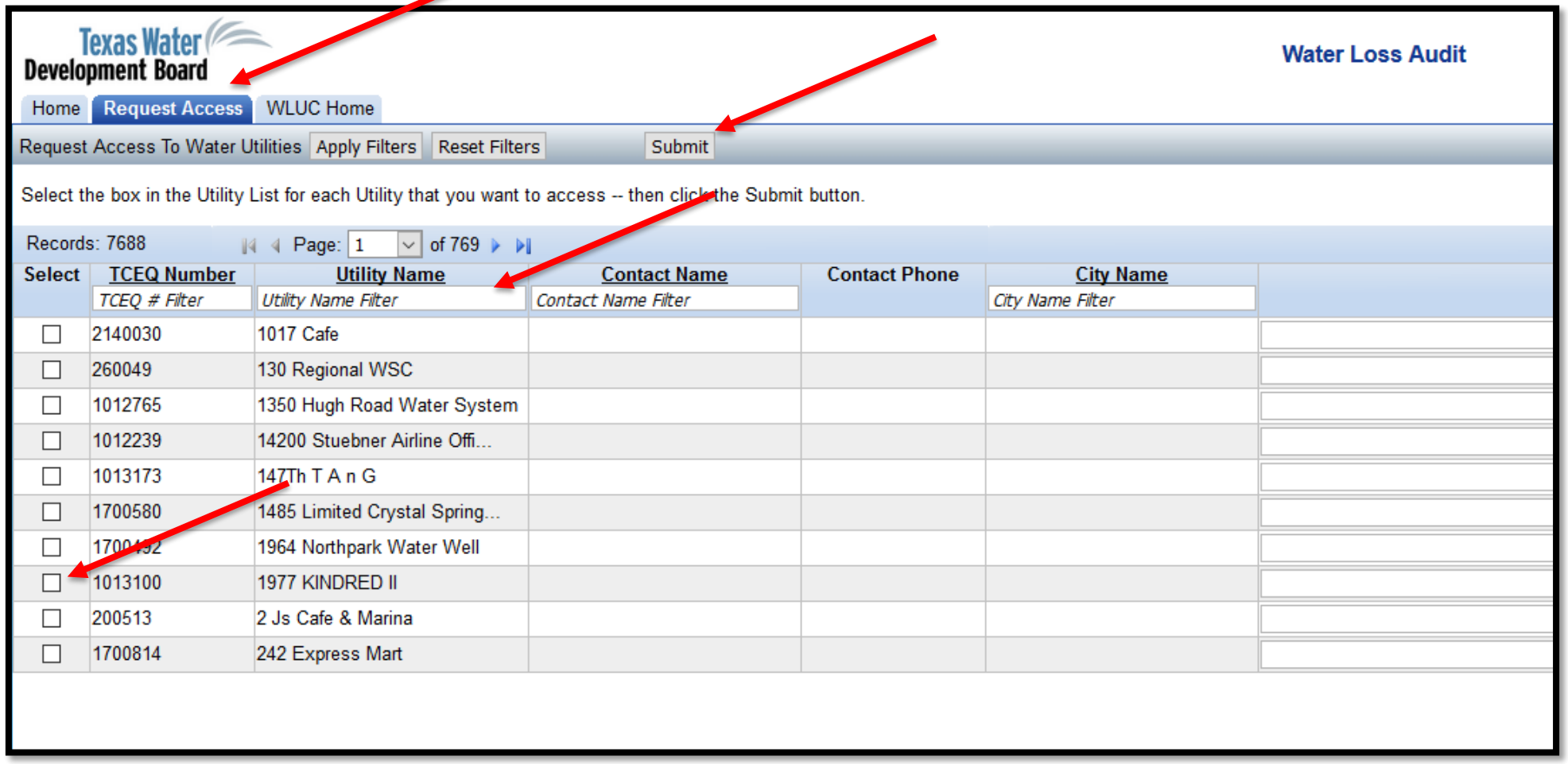


Request Access to Water Use Survey

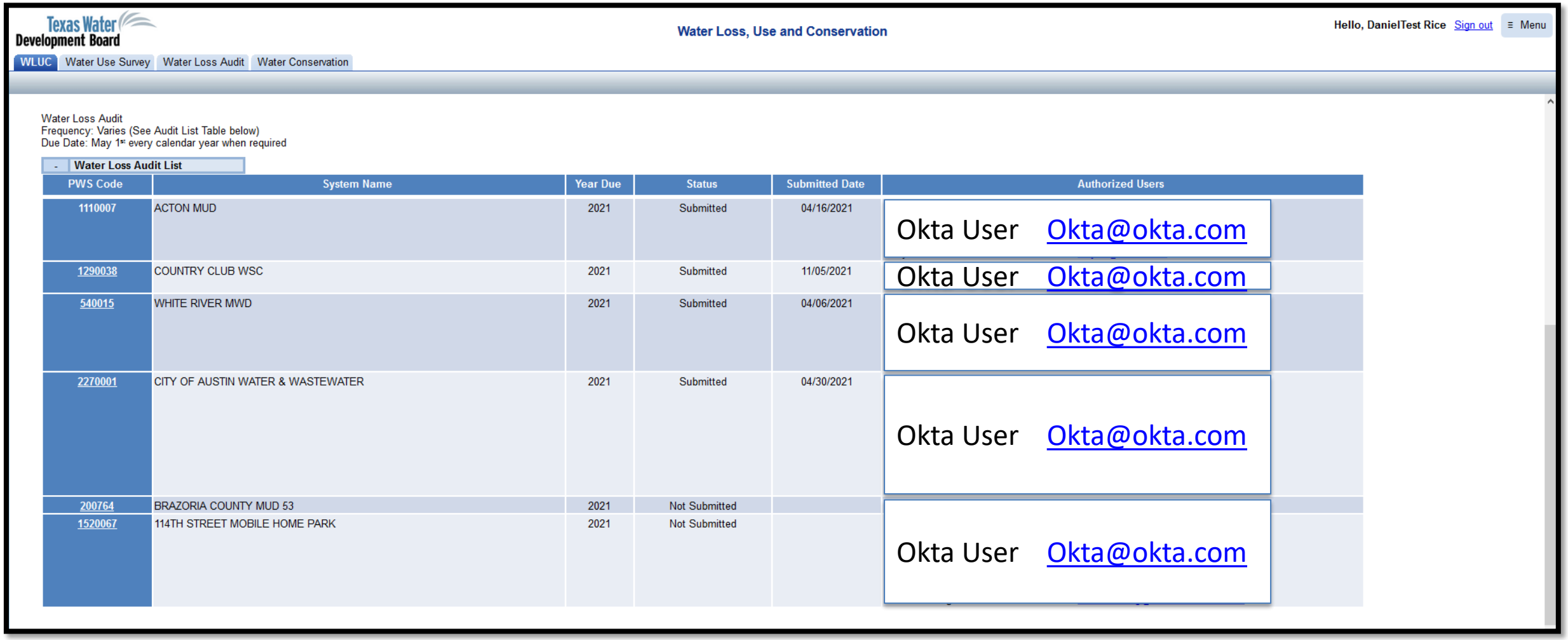


Requesting Access to Reports – Water Loss Audit

Requesting Access to Water Loss Audit

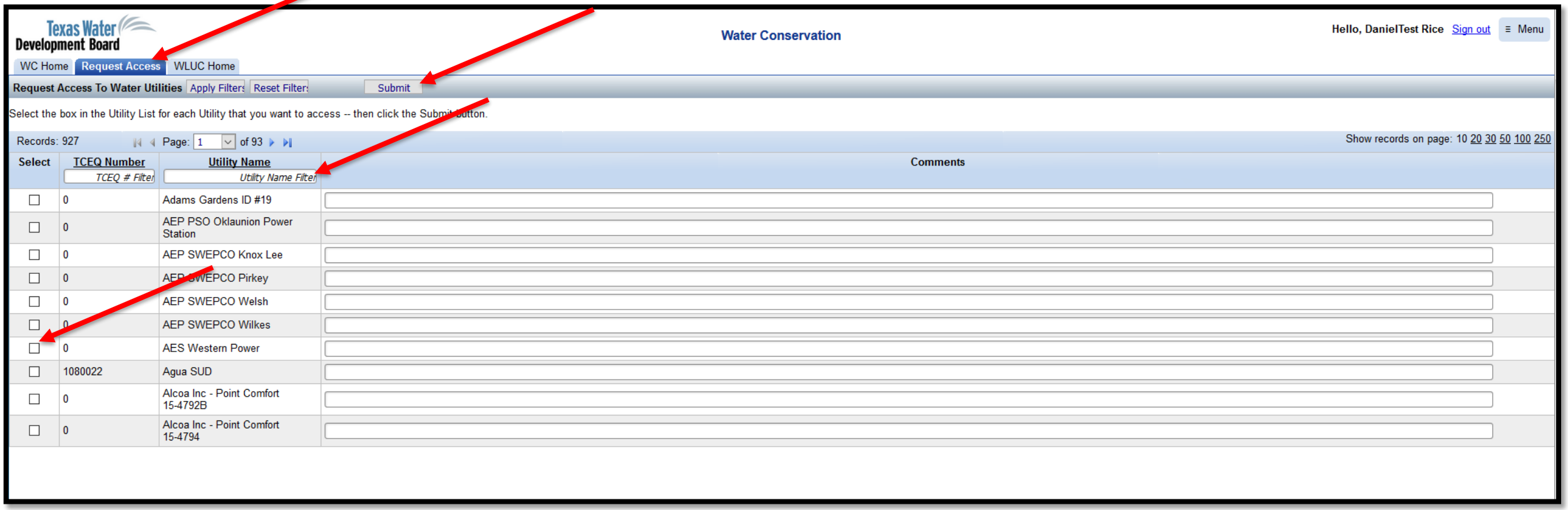


Requesting Access to Water Loss Audit

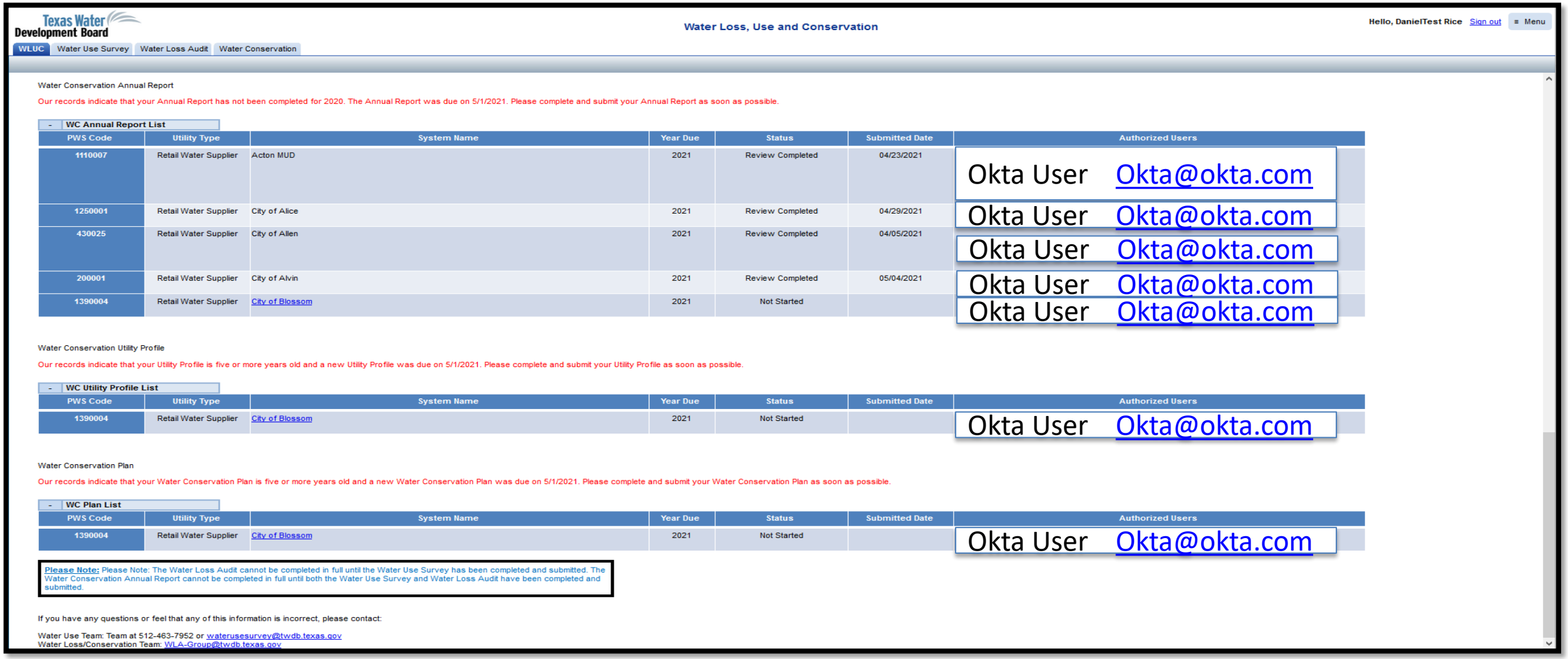


Requesting Access to Reports – Water Conservation

Request Access to Water Conservation Reports



Request Access to Water Conservation Reports



Texas Water Development Board

Water Loss, Use and Conservation

Hello, DanielTest Rice Sign out ≡ Menu

WLUC | Water Use Survey | Water Loss Audit | Water Conservation

Water Conservation Annual Report

Our records indicate that your Annual Report has not been completed for 2020. The Annual Report was due on 5/1/2021. Please complete and submit your Annual Report as soon as possible.

WC Annual Report List

PWS Code	Utility Type	System Name	Year Due	Status	Submitted Date	Authorized Users
1110007	Retail Water Supplier	Acton MUD	2021	Review Completed	04/23/2021	Okta User Okta@okta.com
1250001	Retail Water Supplier	City of Alice	2021	Review Completed	04/29/2021	Okta User Okta@okta.com
430025	Retail Water Supplier	City of Allen	2021	Review Completed	04/05/2021	Okta User Okta@okta.com
200001	Retail Water Supplier	City of Alvin	2021	Review Completed	05/04/2021	Okta User Okta@okta.com
1390004	Retail Water Supplier	City of Blossom	2021	Not Started		Okta User Okta@okta.com

Water Conservation Utility Profile

Our records indicate that your Utility Profile is five or more years old and a new Utility Profile was due on 5/1/2021. Please complete and submit your Utility Profile as soon as possible.

WC Utility Profile List

PWS Code	Utility Type	System Name	Year Due	Status	Submitted Date	Authorized Users
1390004	Retail Water Supplier	City of Blossom	2021	Not Started		Okta User Okta@okta.com

Water Conservation Plan

Our records indicate that your Water Conservation Plan is five or more years old and a new Water Conservation Plan was due on 5/1/2021. Please complete and submit your Water Conservation Plan as soon as possible.

WC Plan List

PWS Code	Utility Type	System Name	Year Due	Status	Submitted Date	Authorized Users
1390004	Retail Water Supplier	City of Blossom	2021	Not Started		Okta User Okta@okta.com

Please Note: Please Note: The Water Loss Audit cannot be completed in full until the Water Use Survey has been completed and submitted. The Water Conservation Annual Report cannot be completed in full until both the Water Use Survey and Water Loss Audit have been completed and submitted.

If you have any questions or feel that any of this information is incorrect, please contact:

Water Use Team: Team at 512-463-7952 or waterusesurvey@twdb.texas.gov
Water Loss/Conservation Team: WLA-Group@twdb.texas.gov

https://www.twdb.texas.gov/apps/overview.asp

Texas Water Development Board

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TWDB Web Applications

Water Use Survey

Launch Application:

okta

Sign-in Help:
Okta User Guide

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Contact:
waterusesurvey@twdb.texas.gov

Water Loss Audit

Water Conservation

TWDB Web Applications (Overview)

Okta User Guide

APM User Guide

Okta User Guide

The Texas Water Development Board has partnered with Okta, an industry leading, cloud-based identity and access management solution, to provide Single Sign-On (SSO) access to our business applications in one, easy-to-manage user portal.

Benefits and Objectives

- SSO means easy access to applications without the need to remember dozens of usernames and passwords
- A single dashboard to organize and access commonly used applications
- Streamlined user access and simplified, self-serve password reset processes
- Improved IT support
- Ability to implement Multi-Factor Authentication (MFA) functionality for accessing sensitive applications and data

For Additional Support

Please request help for assistance in using Okta.

Sign-In Help

← Back to Sign-In Page

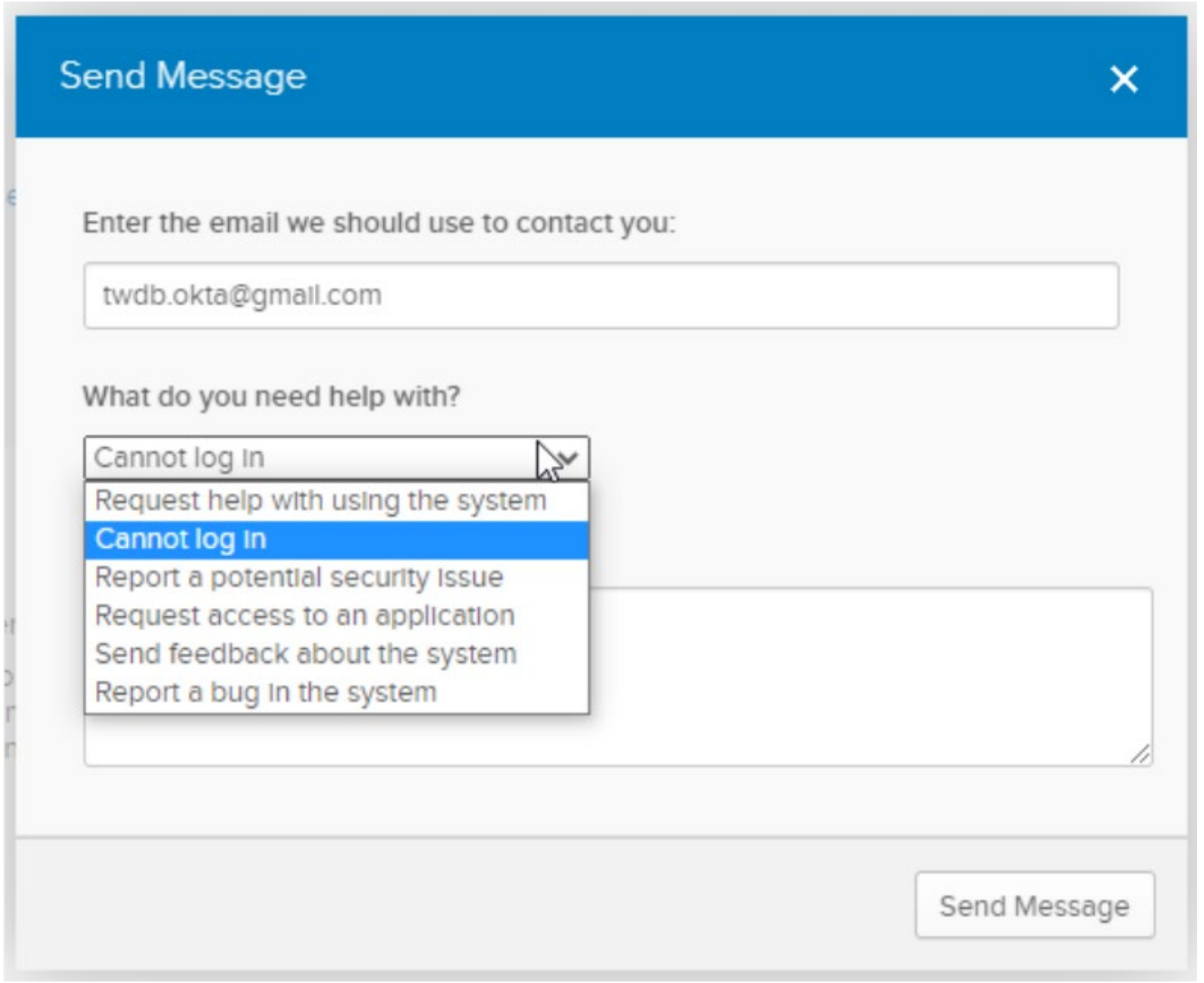
Okta is an on-demand service that allows you to easily sign-in to all the applications your organization uses through a single login.

Once you sign in, your Okta home page displays all your applications in one location. Simply, click the application's corresponding icon and each application opens in a new browser window or tab and you are automatically logged-in.

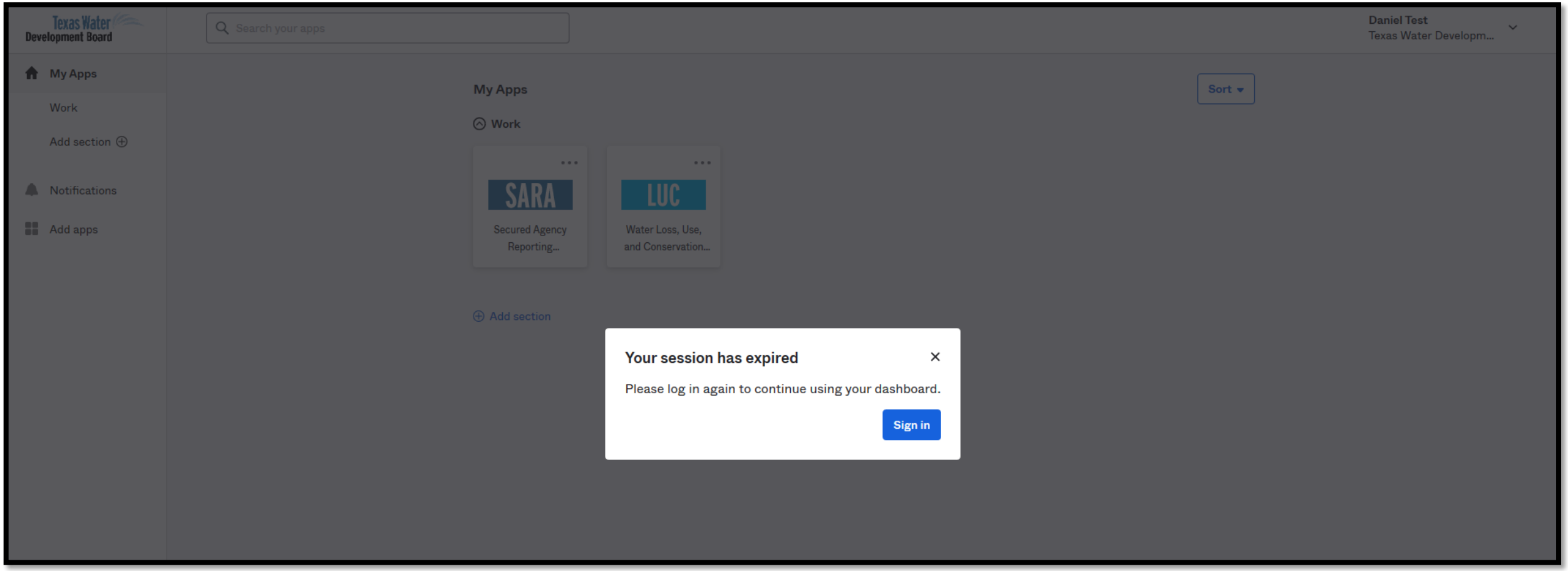
More Help

- Request help
- Send feedback
- Report a bug

Table of Contents


Send Message
Enter the email we should use to contact you:
twdb.okta@gmail.com
What do you need help with?
Cannot log in
Request help with using the system
Cannot log in
Report a potential security issue
Request access to an application
Send feedback about the system
Report a bug in the system
Send Message

SAVE YOUR WORK



Questions and Links

- Type your questions in the question box

- Links to sites:
  - TWDB Web Applications Overview and User Guide (okta)
    - https://www.twdb.texas.gov/apps/overview.asp
  - Okta Application (to login to complete your reports)
    - https://apps.twdb.texas.gov/

Water Use Survey
2023

Jane Bullan and Genera Navarra
Water Use, Projections & Planning

Texas Water Development Board

What is the Water Use Survey?

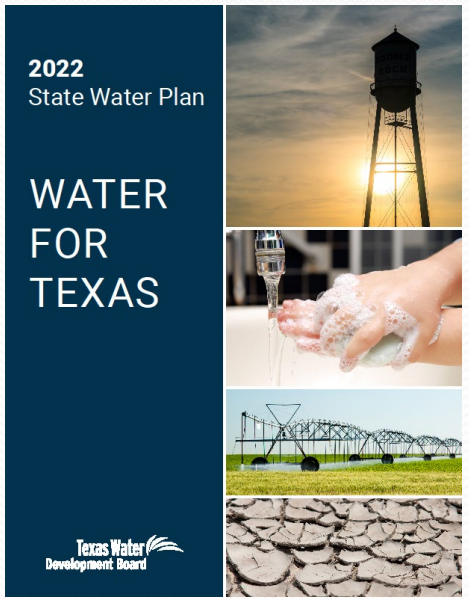
- 7,000 annual surveys
  - 4,500 public water systems
  - 2,500 industrial facilities

- Began in 1955
- Became mandatory in 1999
- Online application launched in 2011

Why Should You Care About Water Use Survey?

- Future municipal water demands in the State Water Plan are based on projections developed using historical water use survey data
- Used to calculate Gallons per Capita Daily (GPCD)
- Supports State Water Implementation Funds for Texas (SWIFT) Prioritization
- Provides Support in other Areas:
  - Groundwater Availability Models (GAMSs)
  - Groundwater Conservation Districts (GCDs)
  - United States Geological Survey (USGS)

    Texas Water Science Center



Water Loss, Use & Conservation (WLUC) Water Data Consolidation

- Online Applications
  - Water Use Survey
  - Water Loss Audit
  - Water Conservation Plan Annual Report
- Certain data pushed from one application to the others

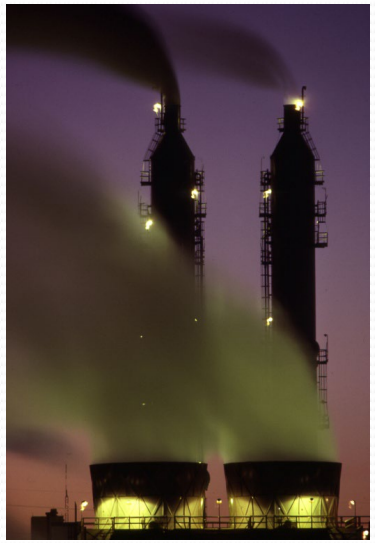
Okta

- **Important reminders**
  - New users must create an account!
  - Returning users use same account credentials as last year
  - Your username must be your email (email must be accessible)
  - You should provide a phone number, security question, and security image for account recovery

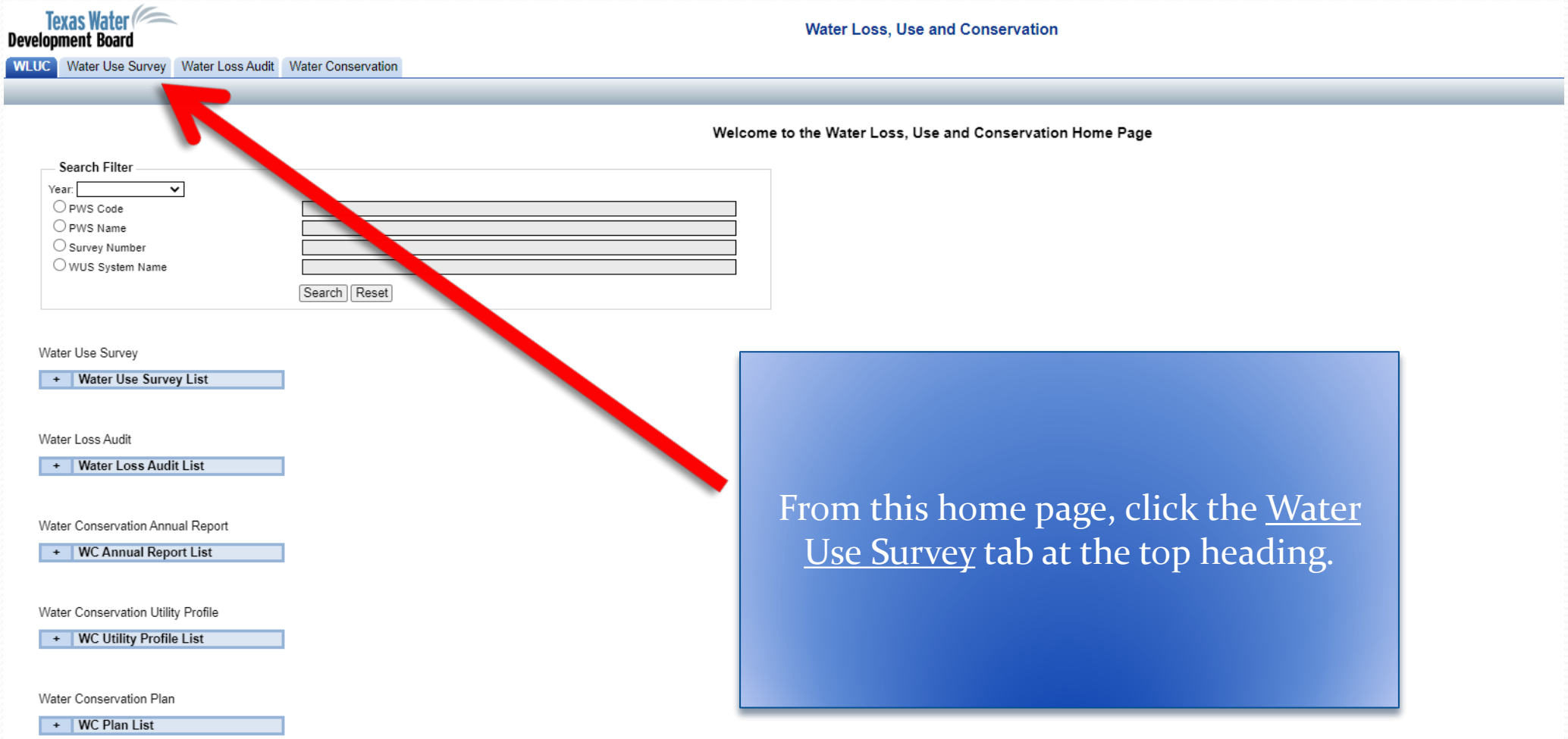
- **Help with Okta:** https://www.twdb.texas.gov/apps/okta-how-to/index.asp

Required Survey Information

- **Intake volumes from sources**
  - Self-supplied groundwater, surface water, or reuse water
  - Purchased water
- **Water sales**
  - Wholesale to other PWS
  - Industrial facilities buying 10 million+ gallons
- **Number of retail connections**
- **Volume of retail water sold broken down by customer type**
  - Metered Residential - Single-family, Residential - Multi-family, Institutional, Commercial, Industrial, Agricultural, Reuse; Unmetered

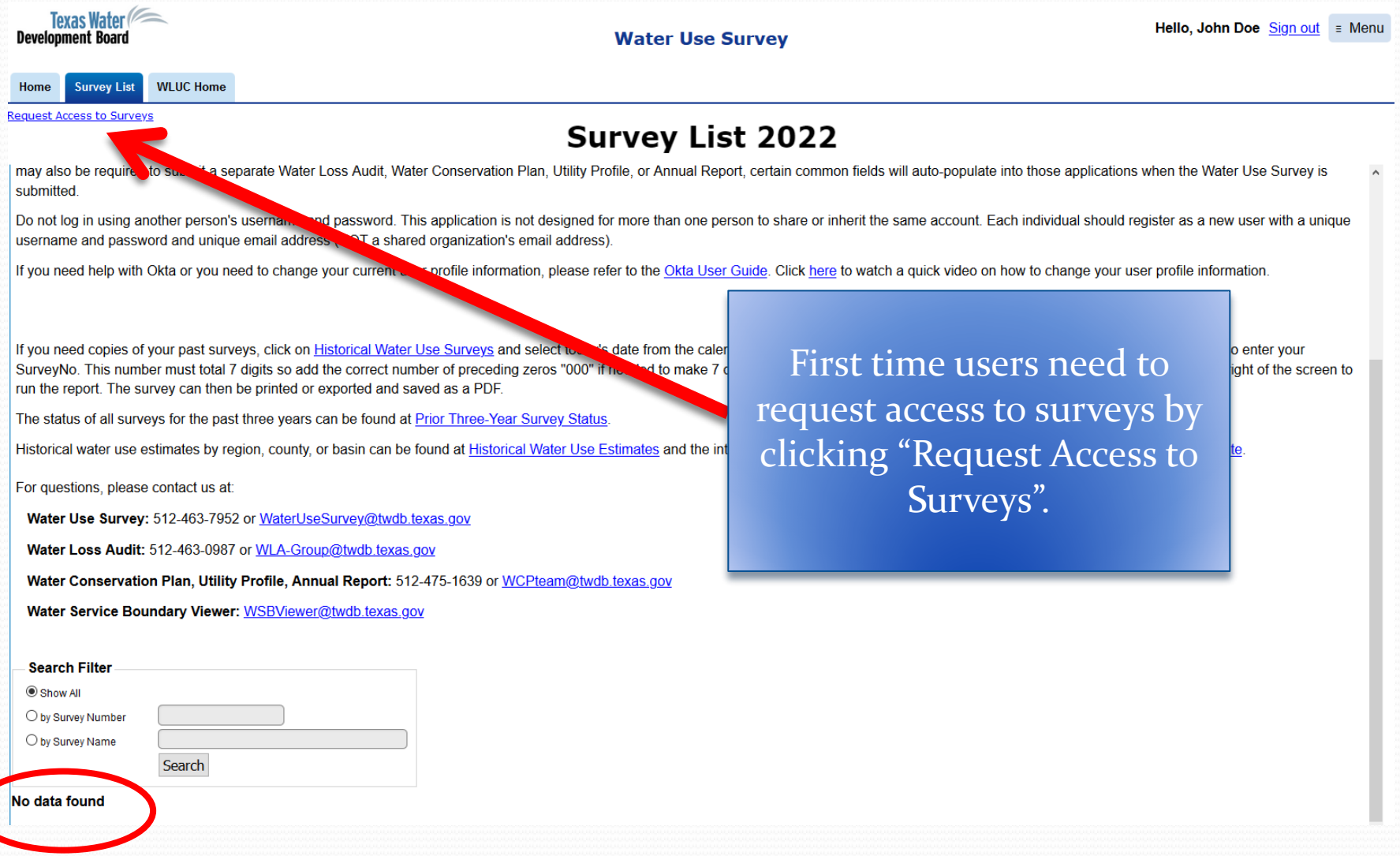


Water Loss, Use and Conservation Home Page



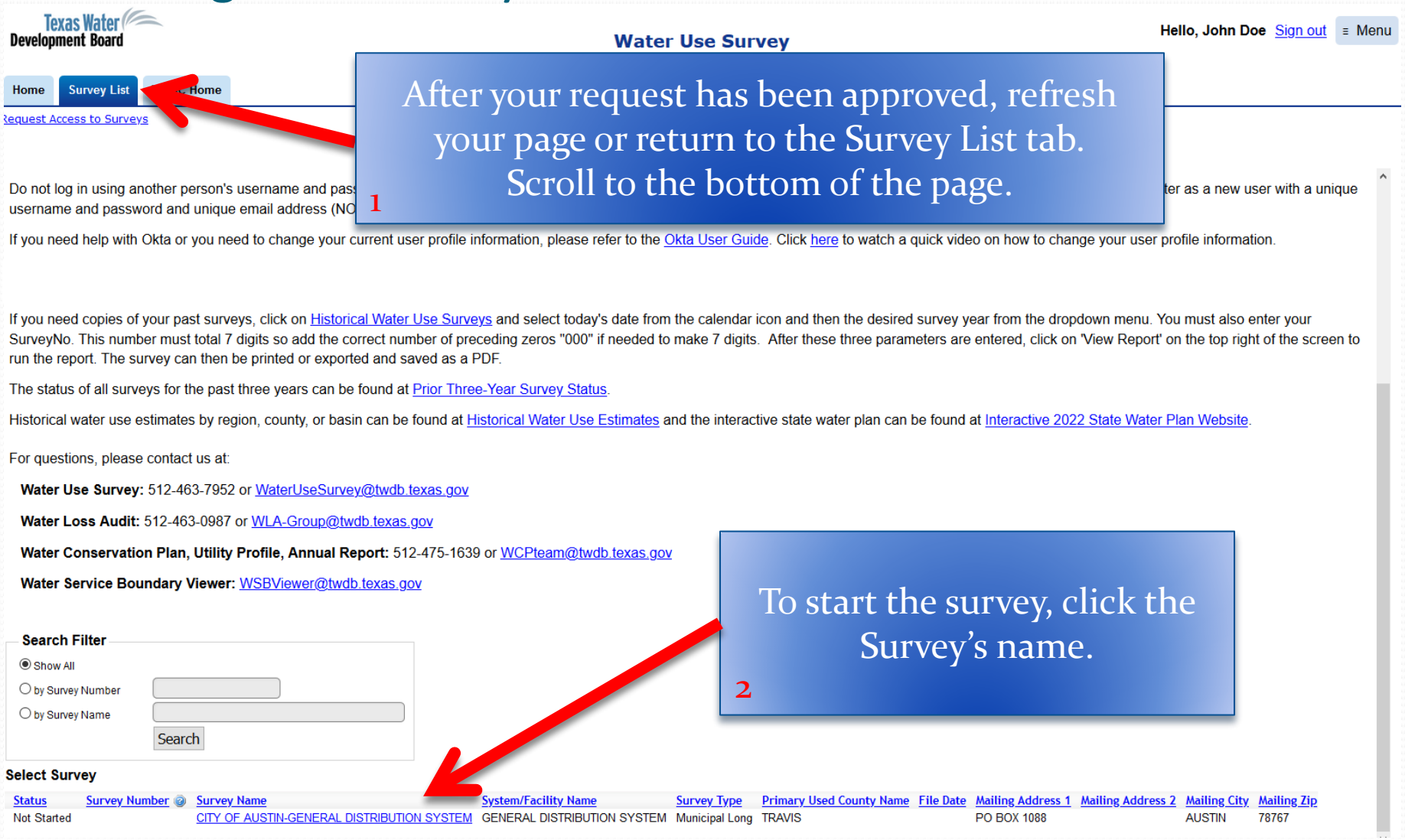
From this home page, click the Water Use Survey tab at the top heading.

Requesting Access to Surveys



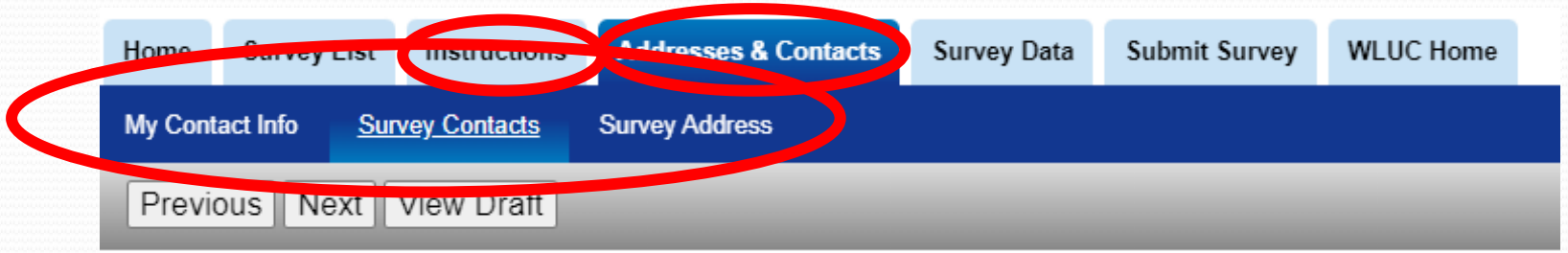
First time users need to request access to surveys by clicking “Request Access to Surveys”.

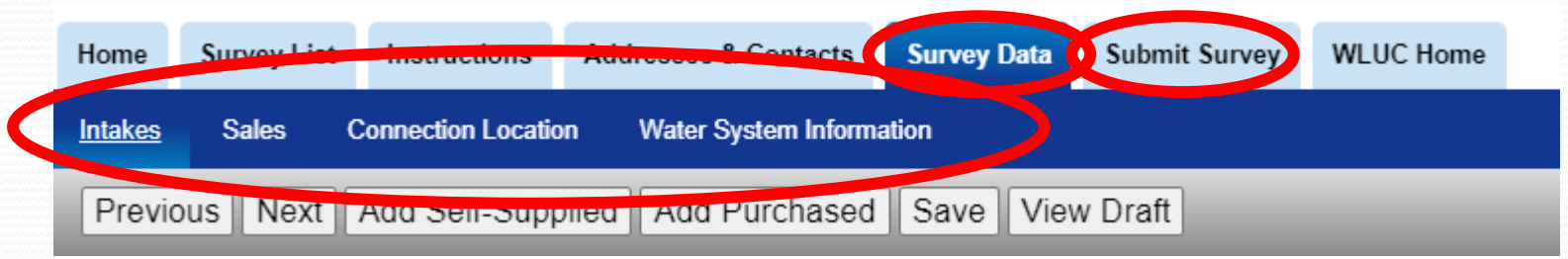
Accessing Your Survey



Survey Navigation Overview

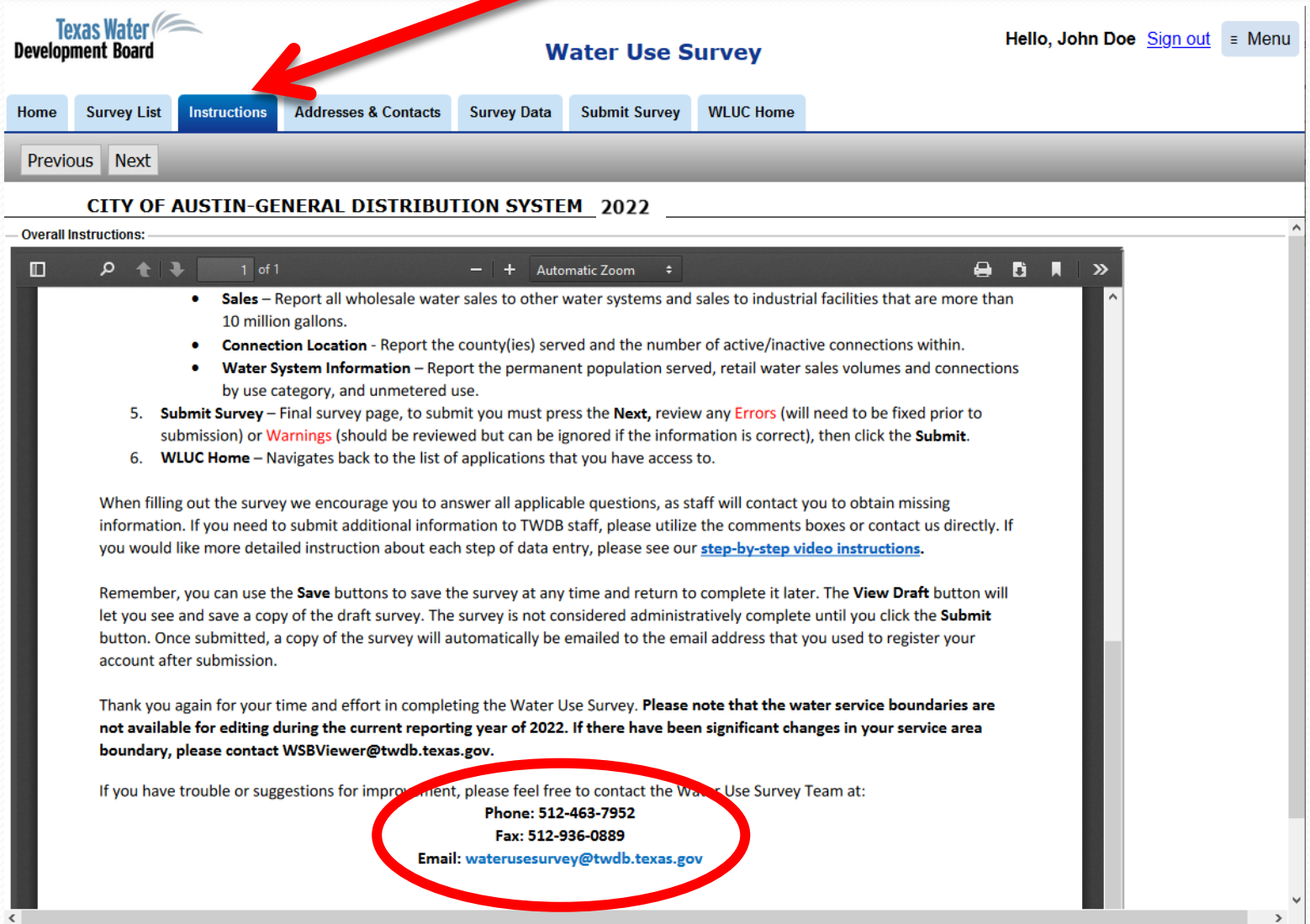
Tab 1: Instructions
Tab 2: Address & Contacts
My Contact Info, Survey Contacts, Survey Address
Tab 3: Survey Data
Intakes, Sales, Connection Location, Water System Information
Tab 4: Submit Survey



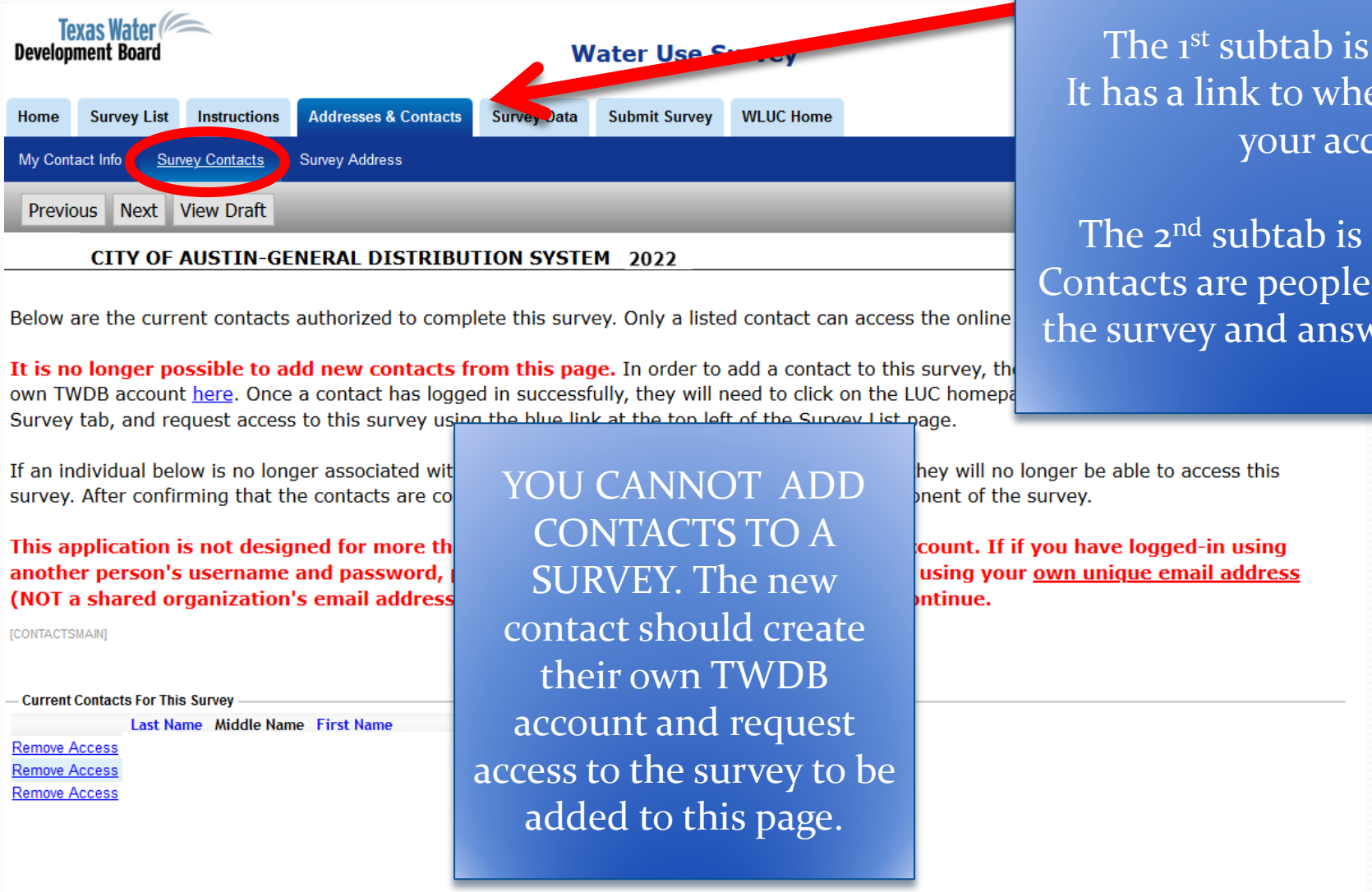


Instructions Page

The 1st tab for all surveys is "Instructions"
Includes agency contact information



Addresses & Contacts - Survey Contacts



The 2nd tab is "Address & Contacts"
It has 3 lower subtabs

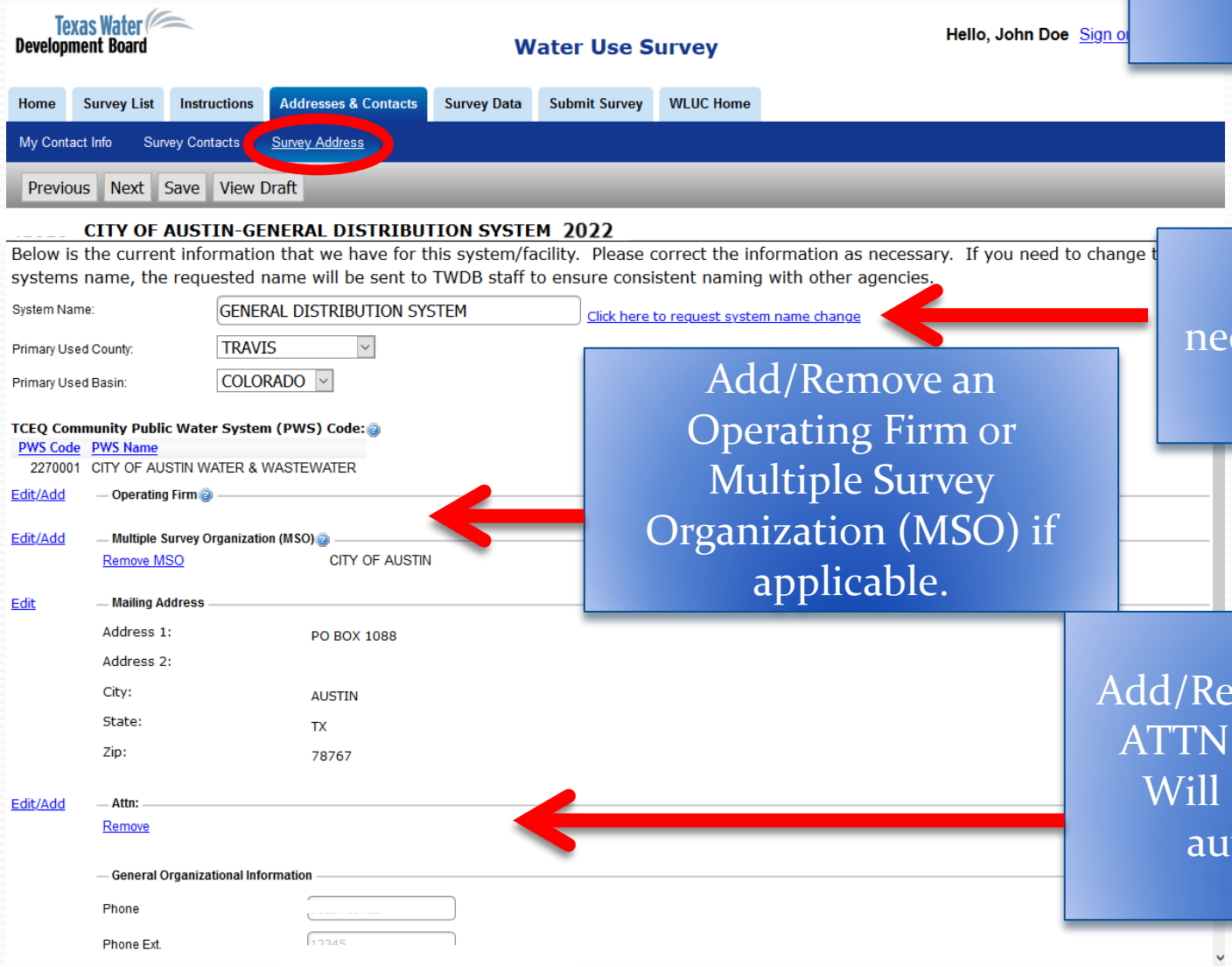
The 1st subtab is "My Contact Info"
It has a link to where you can change your account information.

The 2nd subtab is "Survey Contacts'"
Contacts are people that can complete the survey and answer staff questions.

YOU CANNOT ADD CONTACTS TO A SURVEY. The new contact should create their own TWDB account and request access to the survey to be added to this page.

Addresses & Contacts - Survey Address

The 3rd subtab is "Survey Address" It contains system information and mailing address.



If a System name change is needed, click the link to request an update.

Add/Remove an Operating Firm or Multiple Survey Organization (MSO) if applicable.

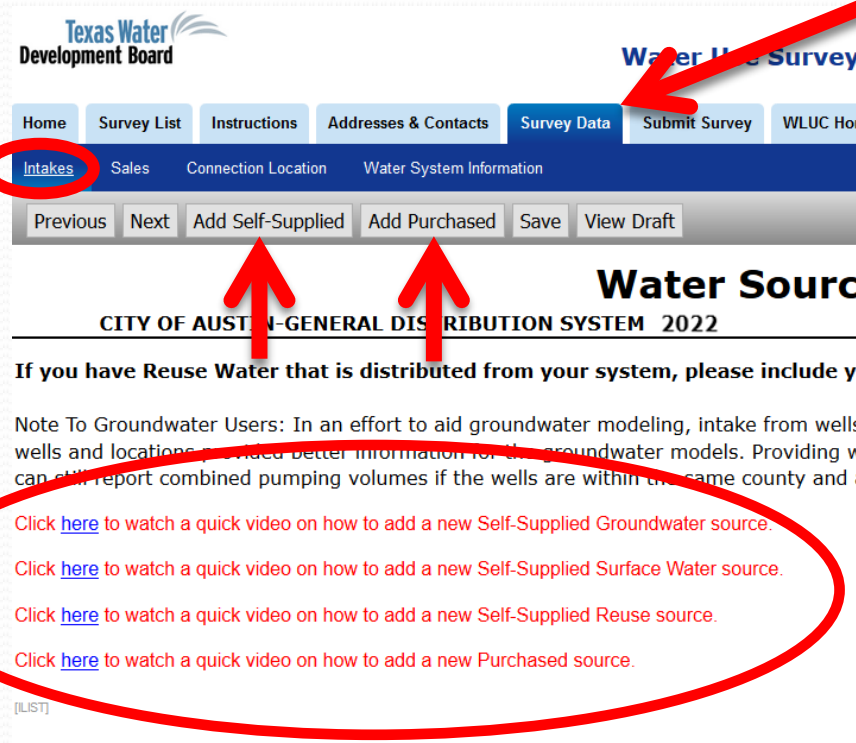
Edit your mailing address here.

Add/Remove an existing contact as a ATTN for mailed correspondence. Will NOT add the contact as an authorized survey contact.

Survey Data - Intakes

The 3rd tab is “Survey Data”
It includes all the water use survey information

The 1st subtab is “Intakes”



If intake sources were carried over from a previous year, click “Edit” to enter monthly gallons.

1

To add a new intake source, click “Add Self Supplied” or “Add Purchased”.

2

		Display Order		Water Type	Self Supplied / Purchased	County Name	Basin Name	Aquifer Name	Well Name	Water Right	Surface Water Name	Reus Typ			
Delete	▼	1	Edit	Surface Water	Self-Supplied	TRAVIS	COLORADO			05471-1-6-A	TOWN LAKE/RESERVOIR				
Delete	▲ ▼	2	Edit	Reuse	Self-Supplied	TRAVIS	COLORADO				UNKNOWN	Direct Non-Potable		N/A	0
Delete	▲ ▼	3	Edit	Surface Water	Purchased	TRAVIS	COLORADO				COLORADO-LAVACA RUN OF RIVER		480	LOWER COLORADO RIVER AUTHORITY-LCRA LAKE TRAVIS 14230	0
Delete	▲ ▼	4	Edit	Surface Water	Purchased						UNKNOWN		512080	AWR SERVICES INC-LOOP 360 WSC	0
Delete	▲	5	Edit	Groundwater	Self-Supplied	TRAVIS	COLORADO	EDWARDS-BFZ AQUIFER			UNKNOWN			N/A	0

Adding a New Self-Supplied or Purchased Water Source

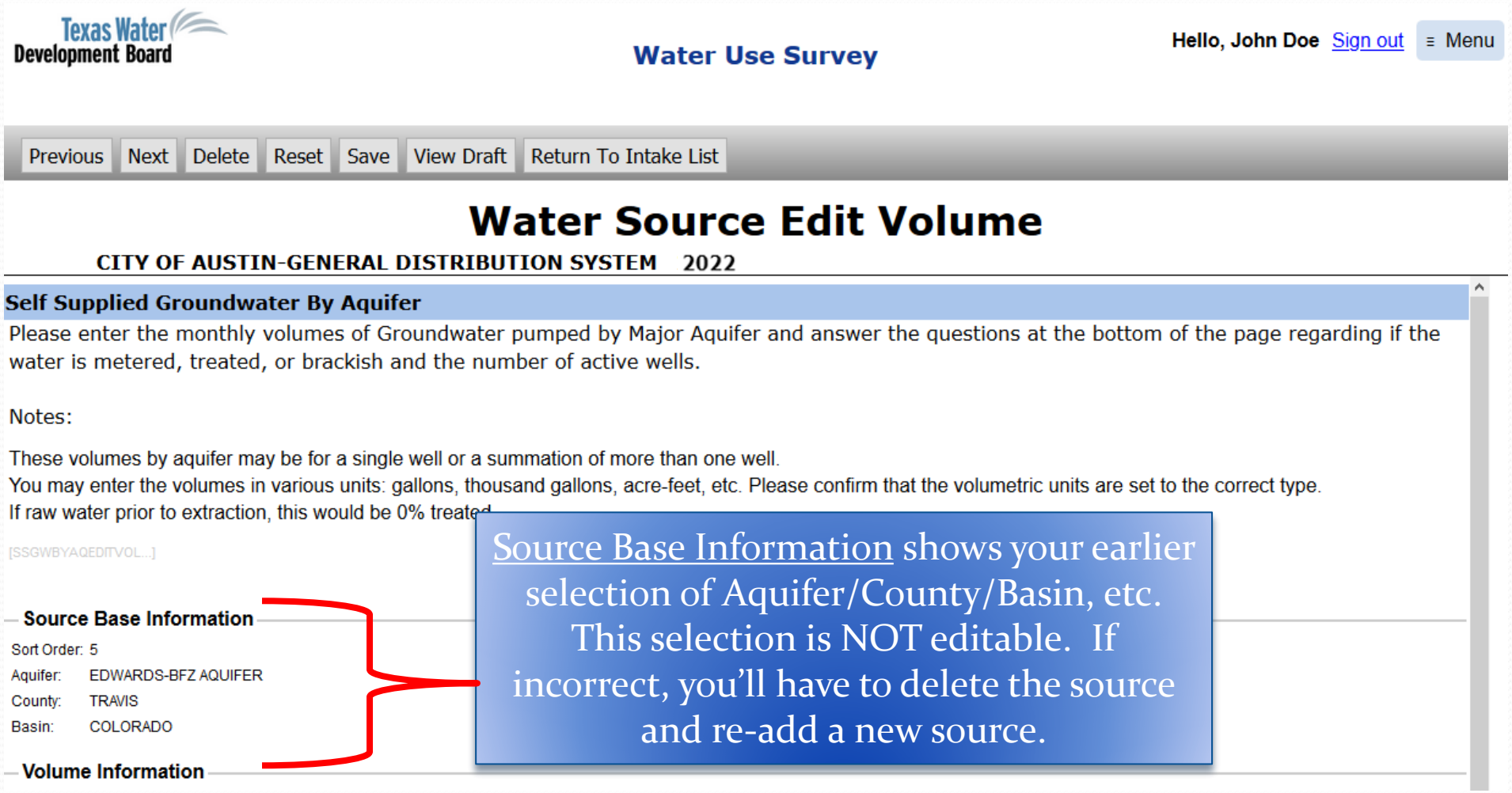
Self-Supplied

- **Groundwater**
  - By Aquifer
  - By Individual Well
- **Reuse**
  - Direct Non-Potable
  - Indirect Non-Potable
  - Direct Potable Reuse (DPR)
  - Indirect Potable Reuse (IPR)
  - Texas Land Application Permit (TLAP)
- **Surface Water**
  - By Major River Basin and Surface Water Name
  - By TCEQ Water Right

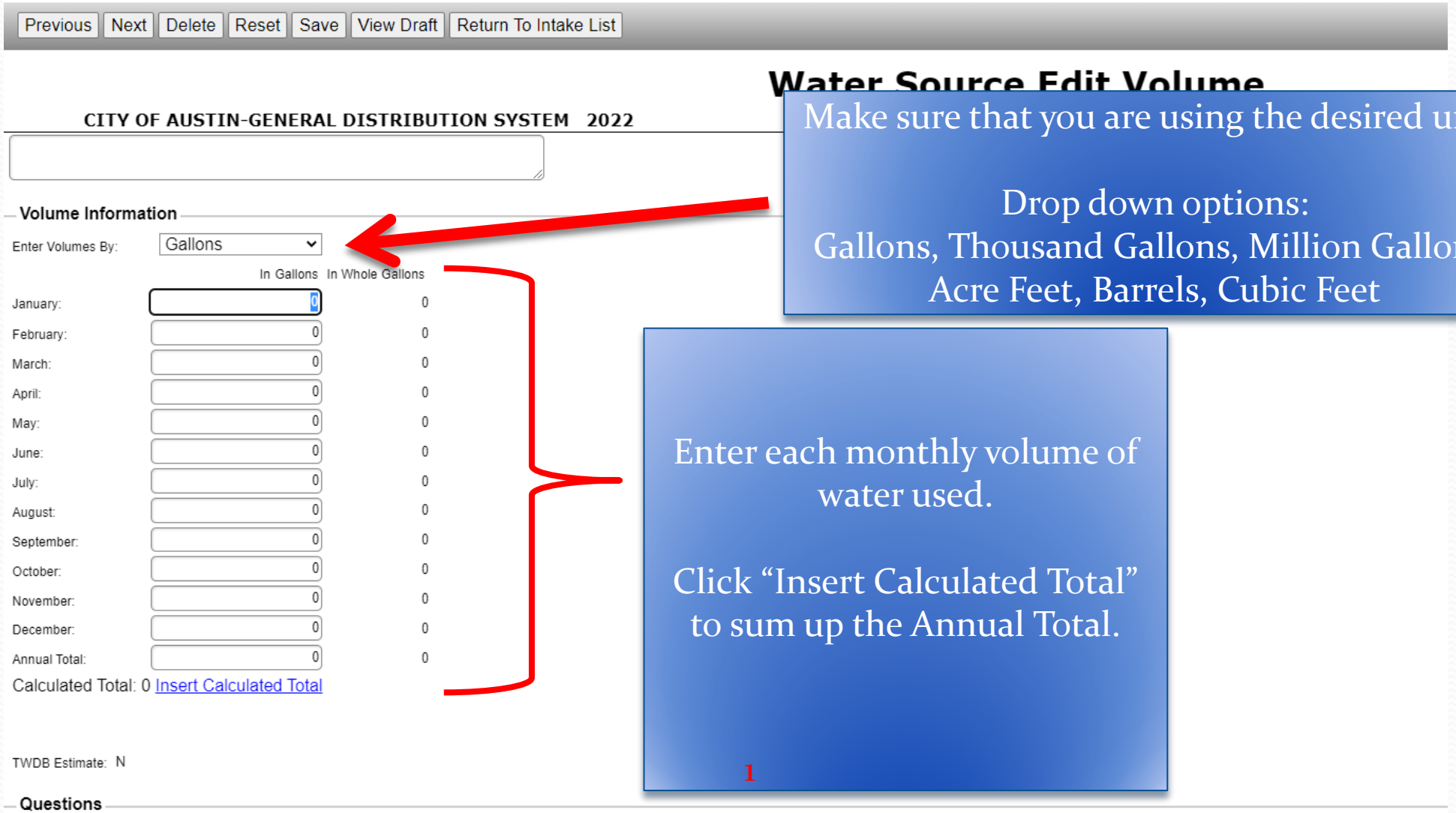
Purchased

- **Groundwater**
  - By Seller only
  - By Seller and Aquifer
- **Reuse**
  - Direct Reuse By Seller and River Basin
  - Indirect Reuse By Seller and TCEQ Water Right
- **Surface Water**
  - By Seller only
  - By Seller and Surface Water Name
  - By the Seller's TCEQ Water Right
- **Unknown Water Type**
  - By Seller

Edit Intake Source to Include Water Volumes



Edit Intake, continued



Make sure that you are using the desired unit!

Drop down options:
Gallons, Thousand Gallons, Million Gallons, Acre Feet, Barrels, Cubic Feet

Enter each monthly volume of water used.

Click "Insert Calculated Total" to sum up the Annual Total.

1

Edit Intake, continued

3 4

Previous | Next | Delete | Reset | Save | View Draft | Return To Intake List

Water Source Edit Volume

CITY OF AUSTIN-GENERAL DISTRIBUTION SYSTEM 2022

	In Gallons	In Whole Gallons
January:	0	0
February:	0	0
March:	0	0
April:	0	0
May:	0	0
June:	0	0
July:	0	0
August:	0	0
September:	0	0
October:	0	0
November:	0	0
December:	0	0
Annual Total:	0	0

Calculated Total: 0 Insert Calculated Total

TWDB Estimate: N

Questions

Was the volume metered or estimated? Estimated

What percent of the volume was treated prior to intake? 0.00 %

Was the water saline/brackish prior to treatment? No

Number of active wells? 0

External Remarks

Under Questions,

- Select from the drop-down if water was metered or estimated,
- Water is usually untreated prior to intake if self-supplied and treated if purchased,
- Select Yes or No from the drop-down to report if water was brackish/saline,
- Self-supplied groundwater sources only: Enter the number of wells that were combined in the total monthly volumes for this aquifer source, and
- Enter External Remarks (if any).

2

Back to the Intakes Page

Previous | Next | Add Self-Supplied | Add Purchased | Save | View Draft

Water Source

CITY OF AUSTIN-GENERAL DISTRIBUTION SYSTEM 2022

If you have Reuse Water that is distributed from your system, please include your total Reuse volume as an intake.

Note To Groundwater Users: In an effort to aid groundwater modeling, intake from wells can be listed individually. Pumping volumes for specific wells and locations provided better information for the groundwater models. Providing water volumes by well is optional, and groundwater users can still report combined pumping volumes if the wells are within the same county and aquifer, as in previous years.

Click here to watch a quick video on how to add a new Self-Supplied Groundwater source.

Click here to watch a quick video on how to add a new Self-Supplied Surface Water source.

Click here to watch a quick video on how to add a new Self-Supplied Reuse source.

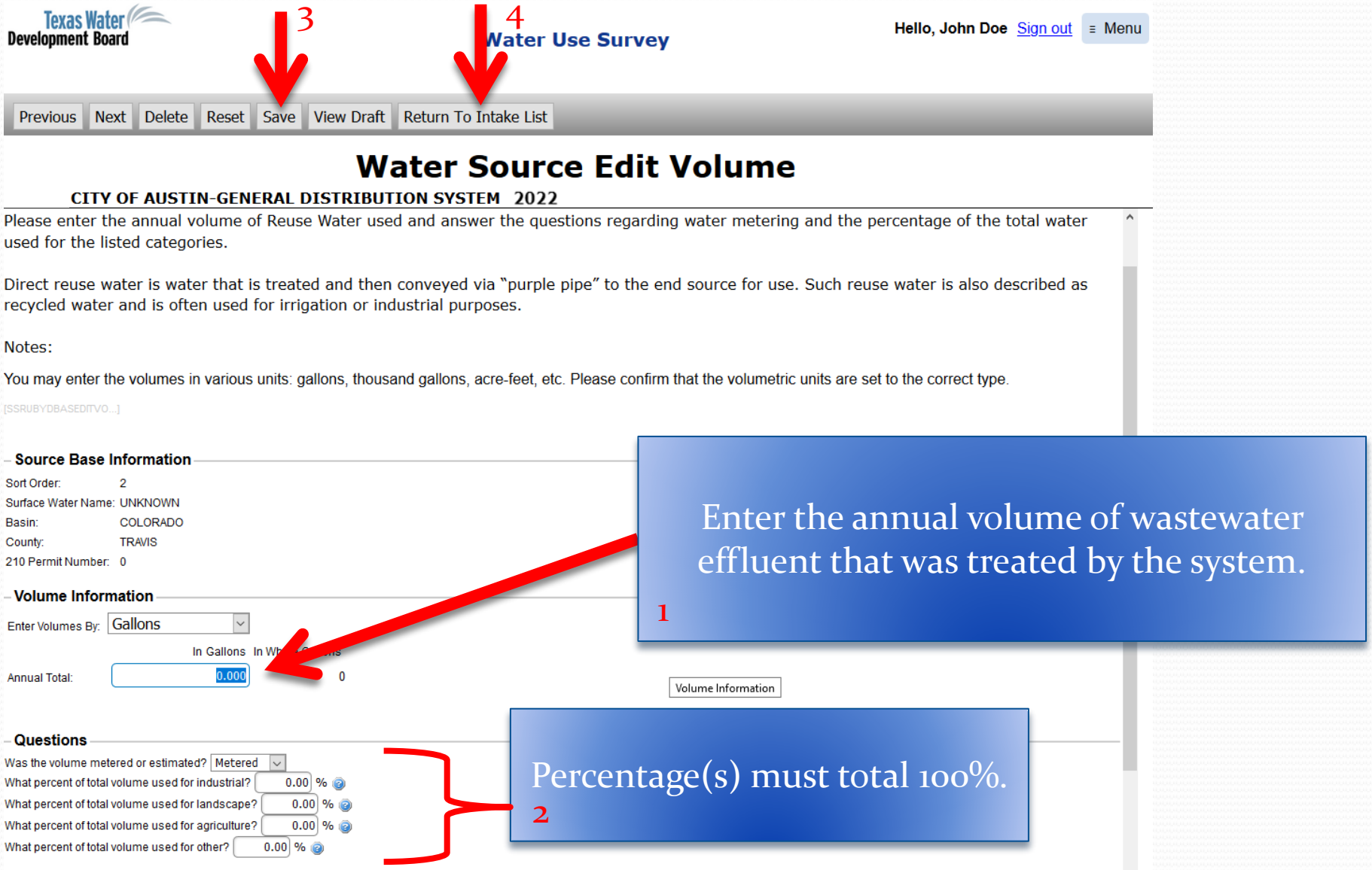
Click here to watch a quick video on how to add a new Purchased source.

[ILIST]

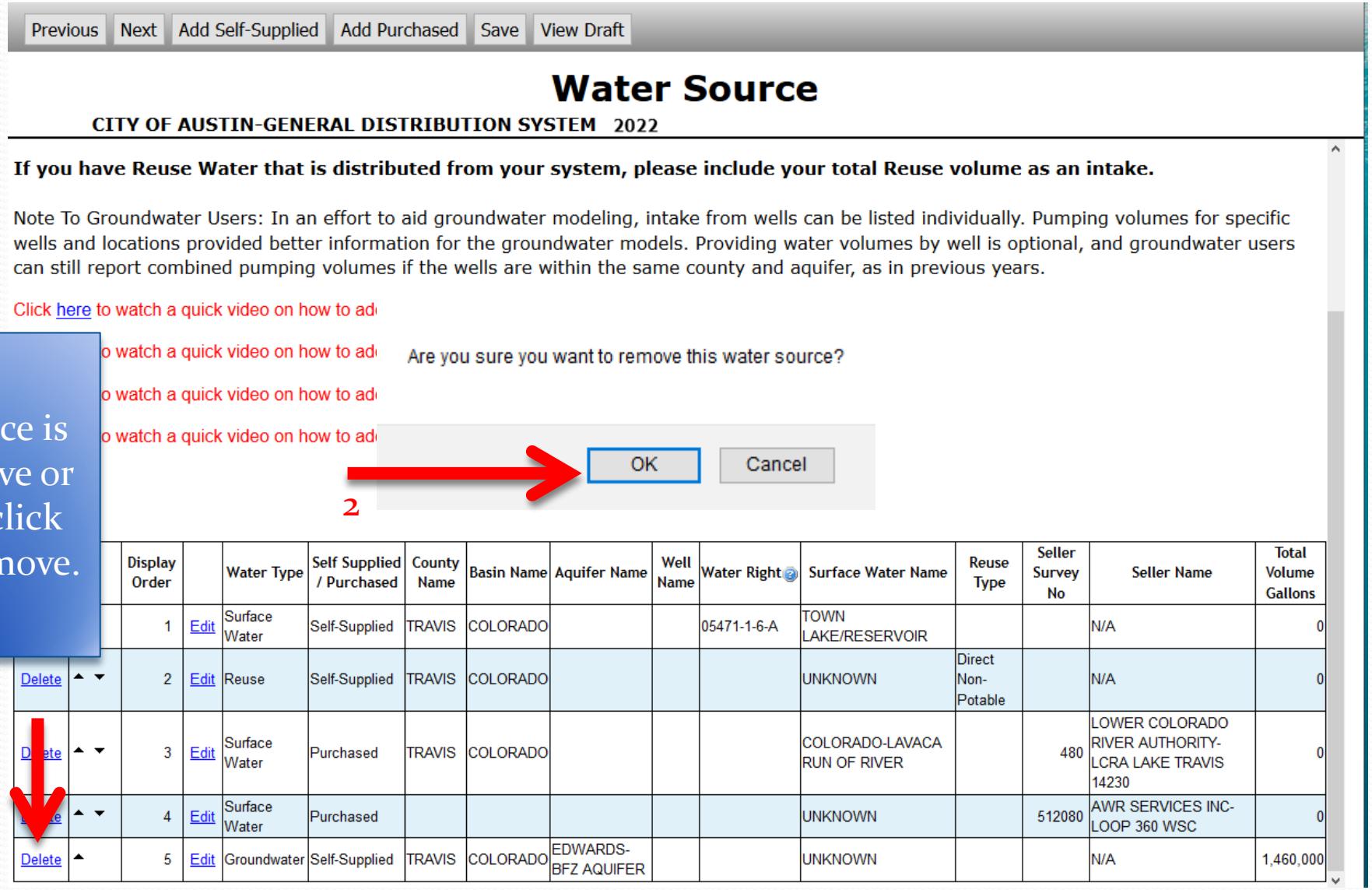
		Display Order		Water Type	Self Supplied / Purchased	County Name	Basin Name	Aquifer Name							Total Volume Gallons
Delete	▼	1	Edit	Surface Water	Self-Supplied	TRAVIS	COLORADO								0
Delete	▲ ▼	2	Edit	Reuse	Self-Supplied	TRAVIS	COLORADO					Potable			0
Delete	▲ ▼	3	Edit	Surface Water	Purchased	TRAVIS	COLORADO				COLORADO-LAVACA RUN OF RIVER		480	LOWER COLORADO RIVER AUTHORITY-LCRA LAKE TRAVIS 14230	0
Delete	▲ ▼	4	Edit	Surface Water	Purchased						UNKNOWN		512080	AWR SERVICES INC LOOP 360 WSC	0
Delete	▲	5	Edit	Groundwater	Self-Supplied	TRAVIS	COLORADO	EDWARDS-BFZ AQUIFER			UNKNOWN			N/A	1,460,000

Newly entered data shows Total Annual Volume.

Edit Intake to Include Reuse Water Volume



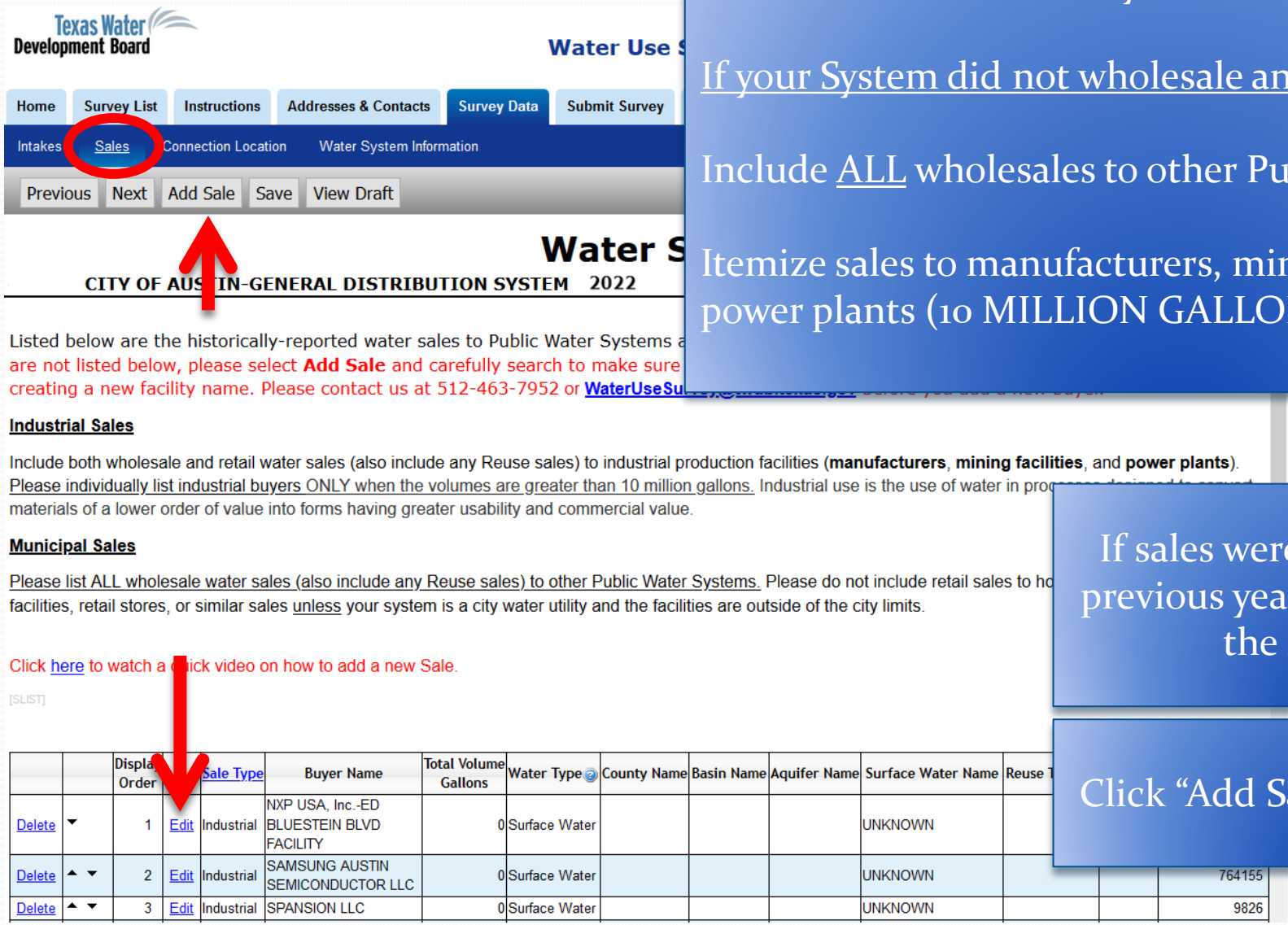
Removing Intake Sources



If Intake source is no longer active or is incorrect, click "Delete" to remove.

		Display Order		Water Type	Self Supplied / Purchased	County Name	Basin Name	Aquifer Name	Well Name	Water Right	Surface Water Name	Reuse Type	Seller Survey No	Seller Name	Total Volume Gallons
		1	Edit	Surface Water	Self-Supplied	TRAVIS	COLORADO			05471-1-6-A	TOWN LAKE/RESERVOIR			N/A	0
Delete		2	Edit	Reuse	Self-Supplied	TRAVIS	COLORADO				UNKNOWN	Direct Non-Potable		N/A	0
Delete		3	Edit	Surface Water	Purchased	TRAVIS	COLORADO				COLORADO-LAVACA RUN OF RIVER		480	LOWER COLORADO RIVER AUTHORITY-LCRA LAKE TRAVIS 14230	0
Delete		4	Edit	Surface Water	Purchased						UNKNOWN		512080	AWR SERVICES INC-LOOP 360 WSC	0
Delete		5	Edit	Groundwater	Self-Supplied	TRAVIS	COLORADO	EDWARDS-BFZ AQUIFER			UNKNOWN			N/A	1,460,000

Survey Data - Sales



The 2nd subtab of "Survey Data" is "Sales"

If your System did not wholesale any water, skip this tab.

Include ALL wholesales to other Public Water Systems.

Itemize sales to manufacturers, mining operations, or power plants (10 MILLION GALLONS +)

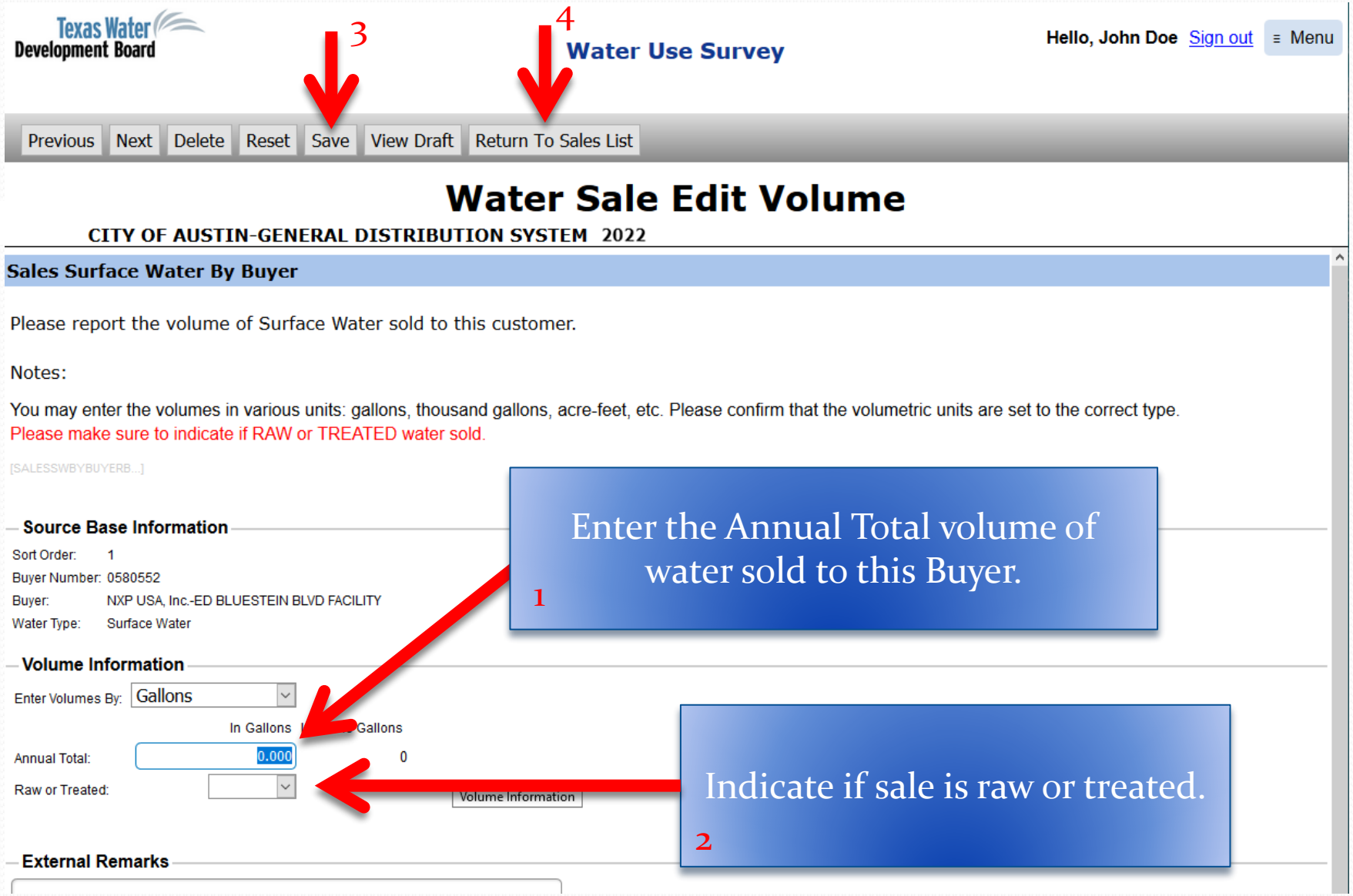
If sales were carried over from a previous year, click "Edit" to enter the sale amount.

Click "Add Sale" to add a new sale.

Adding a New Sale

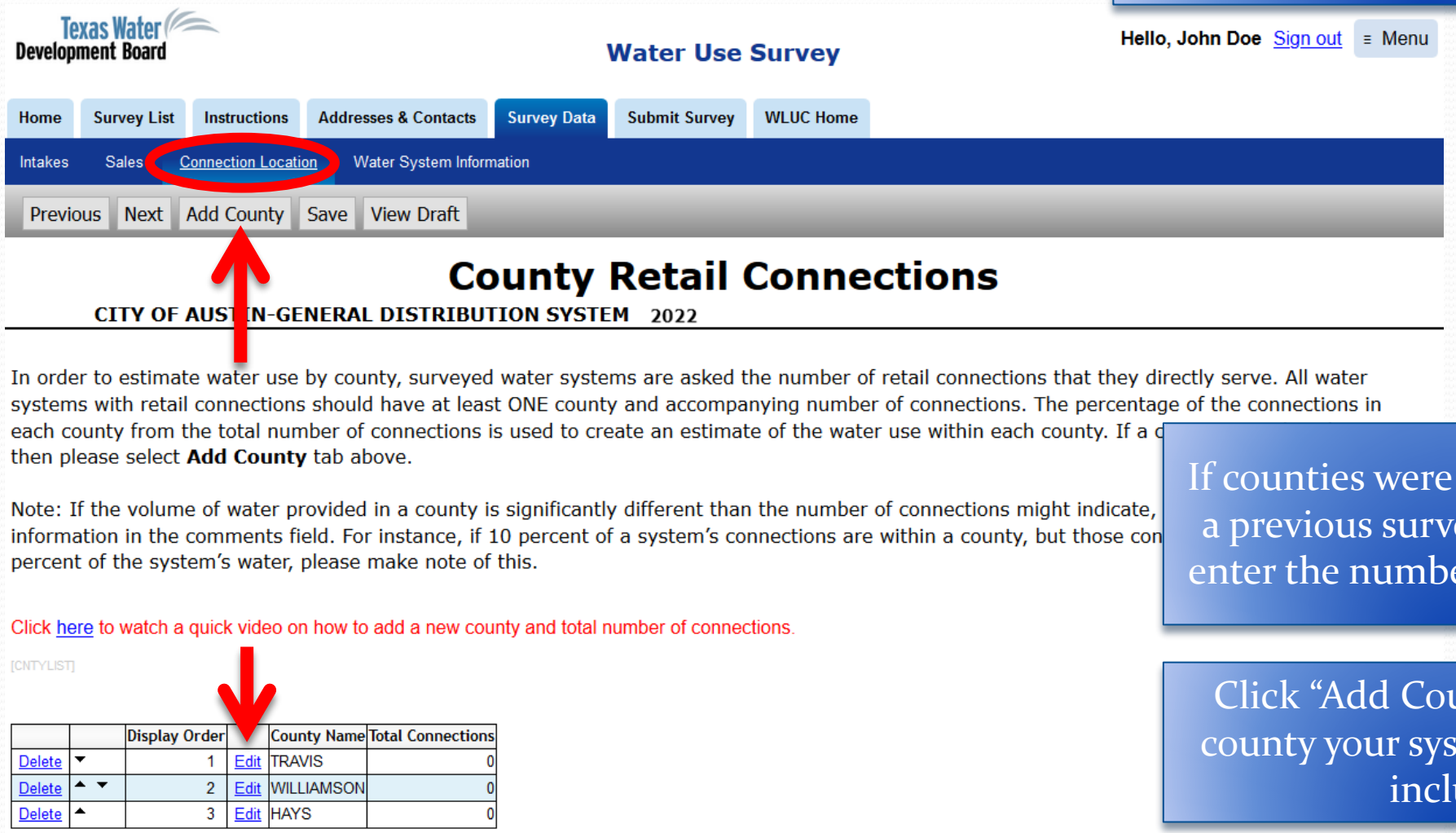
- **Groundwater**
  - By Buyer only
  - By Buyer and Aquifer
- **Reuse**
  - Direct Reuse By Buyer and River Basin
  - Indirect Reuse By Buyer and TCEQ Water Right
- **Surface Water**
  - By Buyer only
  - By Buyer and Surface Water Name
- **Unknown Water Type**
  - By Buyer

Enter Water Volume Sold to Buyer



For Municipal Long Surveys Only
Entering Total Connections Served

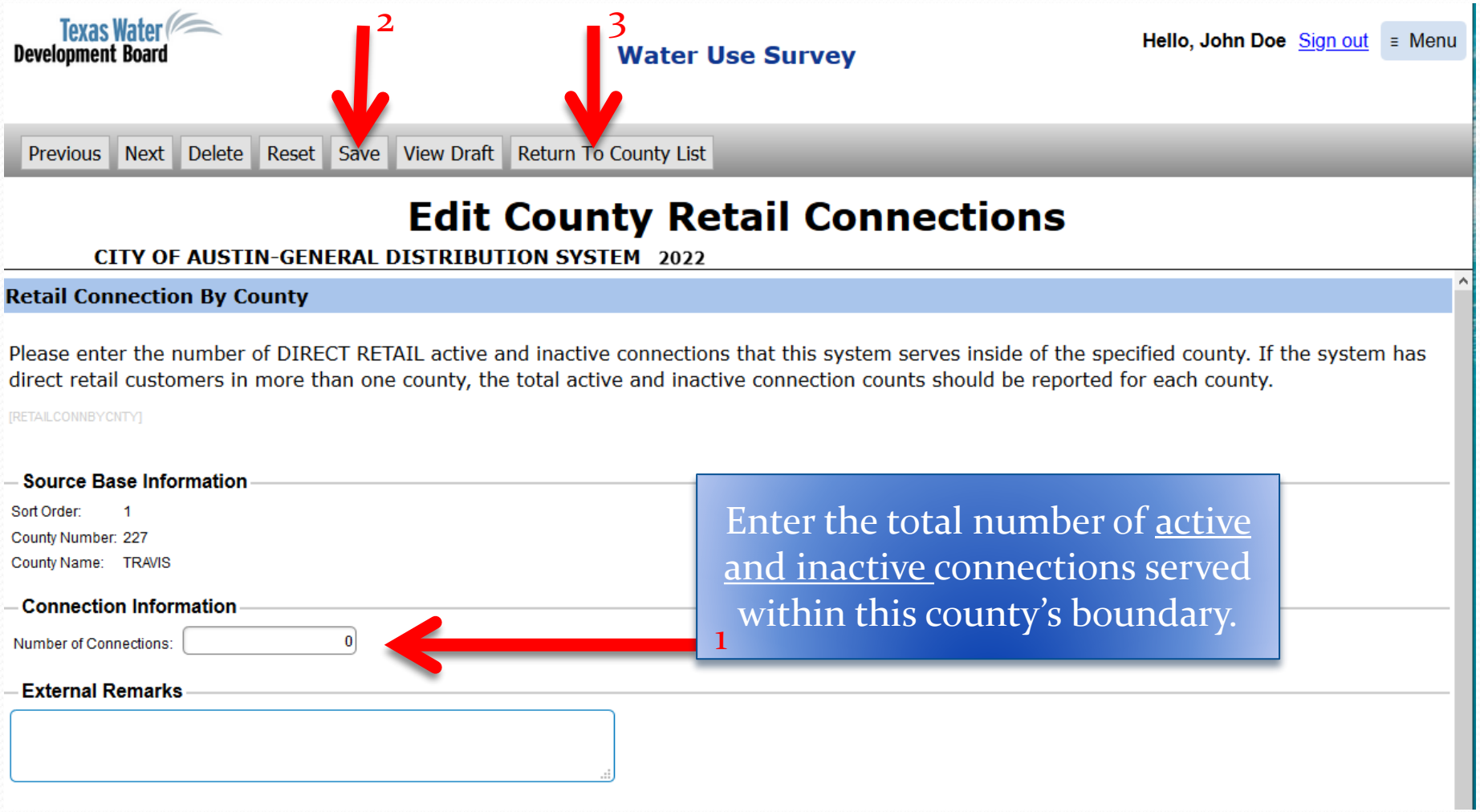
The 3rd subtab of "Survey Data" is "Connection Location"



If counties were carried over from a previous survey, click "Edit" to enter the number of connections.

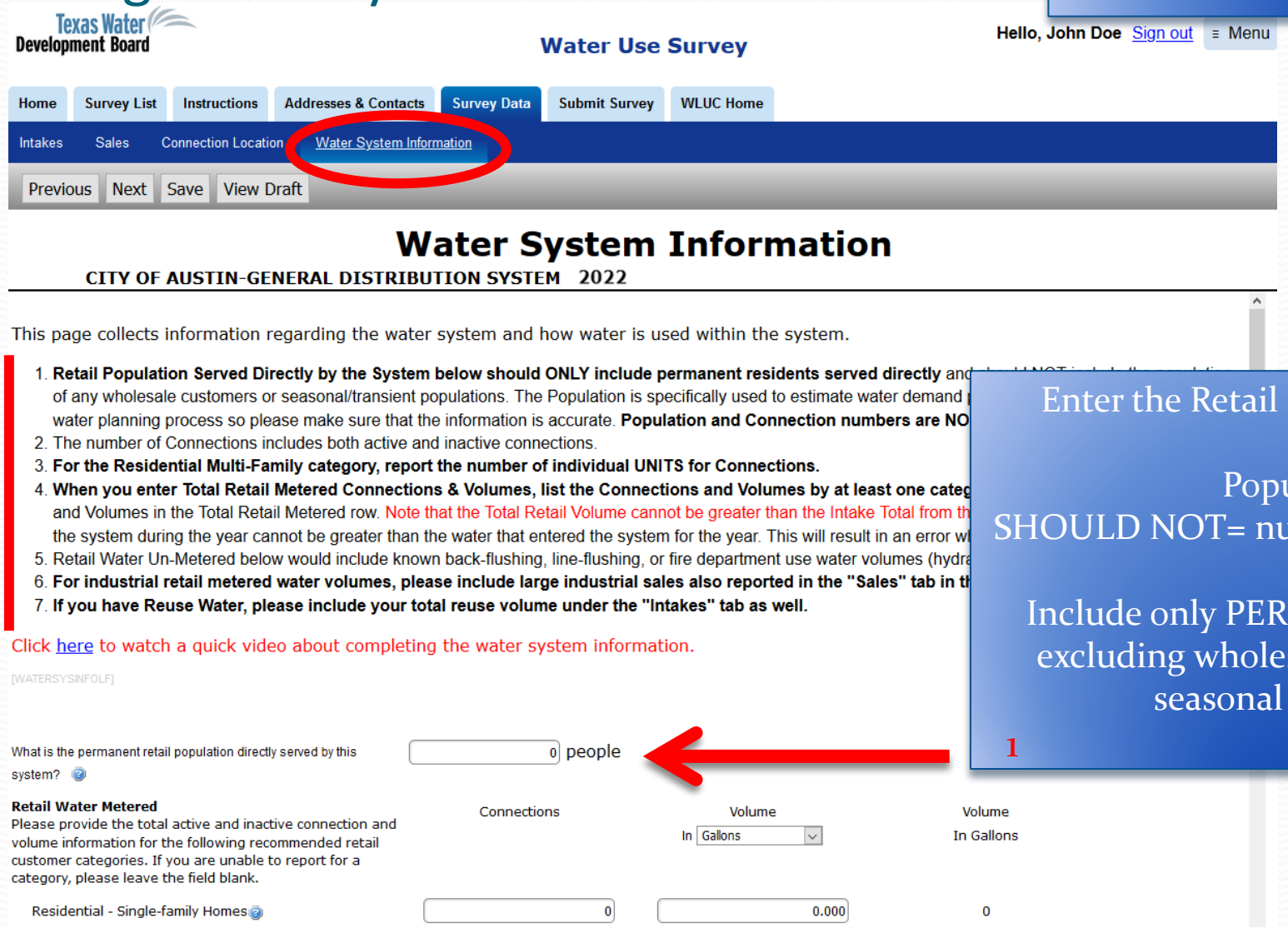
Click "Add County" button if a county your system serves is not included.

For Municipal Long Surveys Only
Entering Total Connections Served, continued



Entering Water System Information

The 4th subtab of "Survey Data" is "Water System Information"



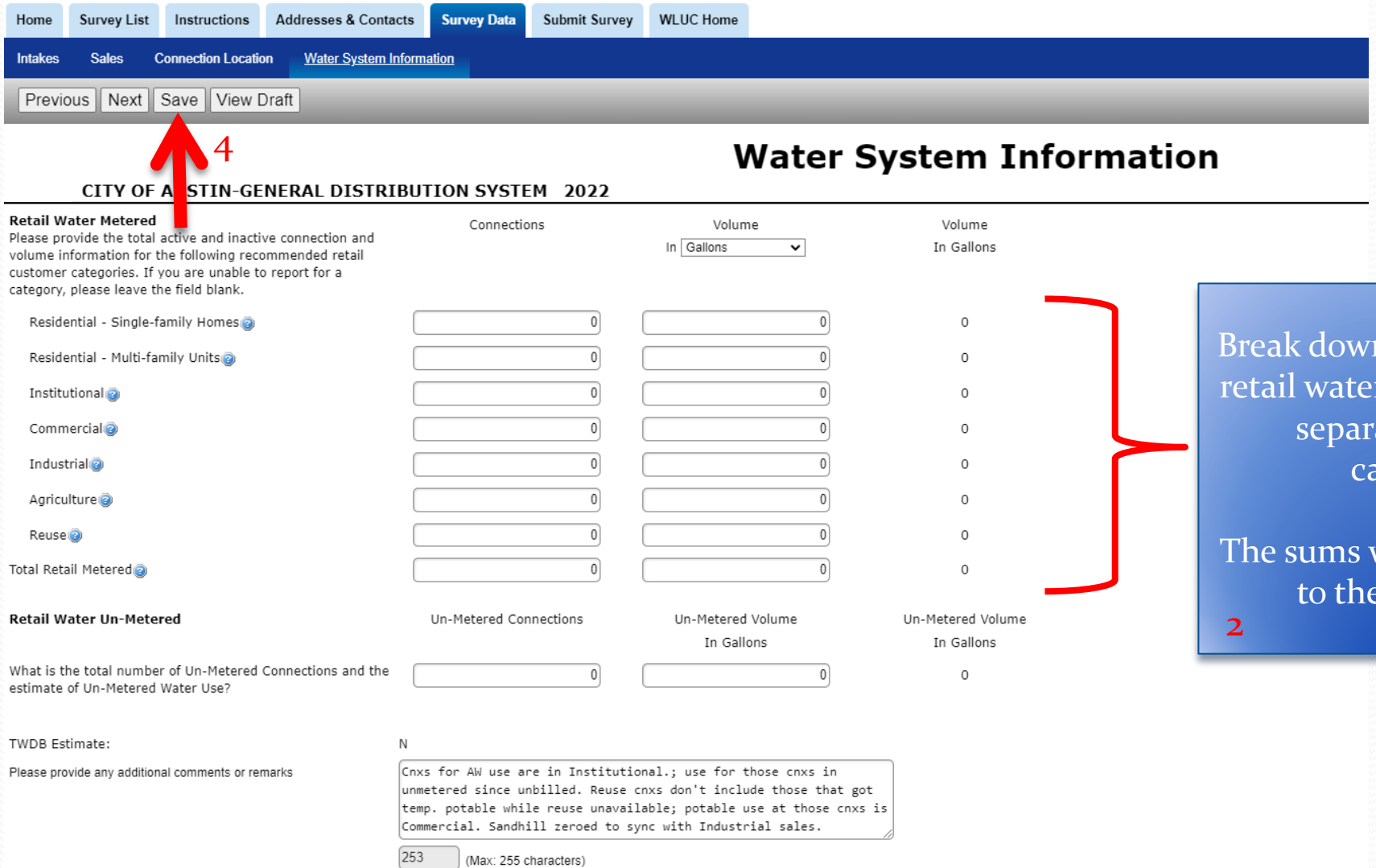
Enter the Retail Population served.

Population
SHOULD NOT= number of connections.

Include only PERMENANT residents excluding wholesale, transient, and seasonal customers.

1

For Municipal Long Surveys Only
Entering Water System Information, continued



Report unmetered water connections and volumes here.

The same unit as selected above will apply.

3

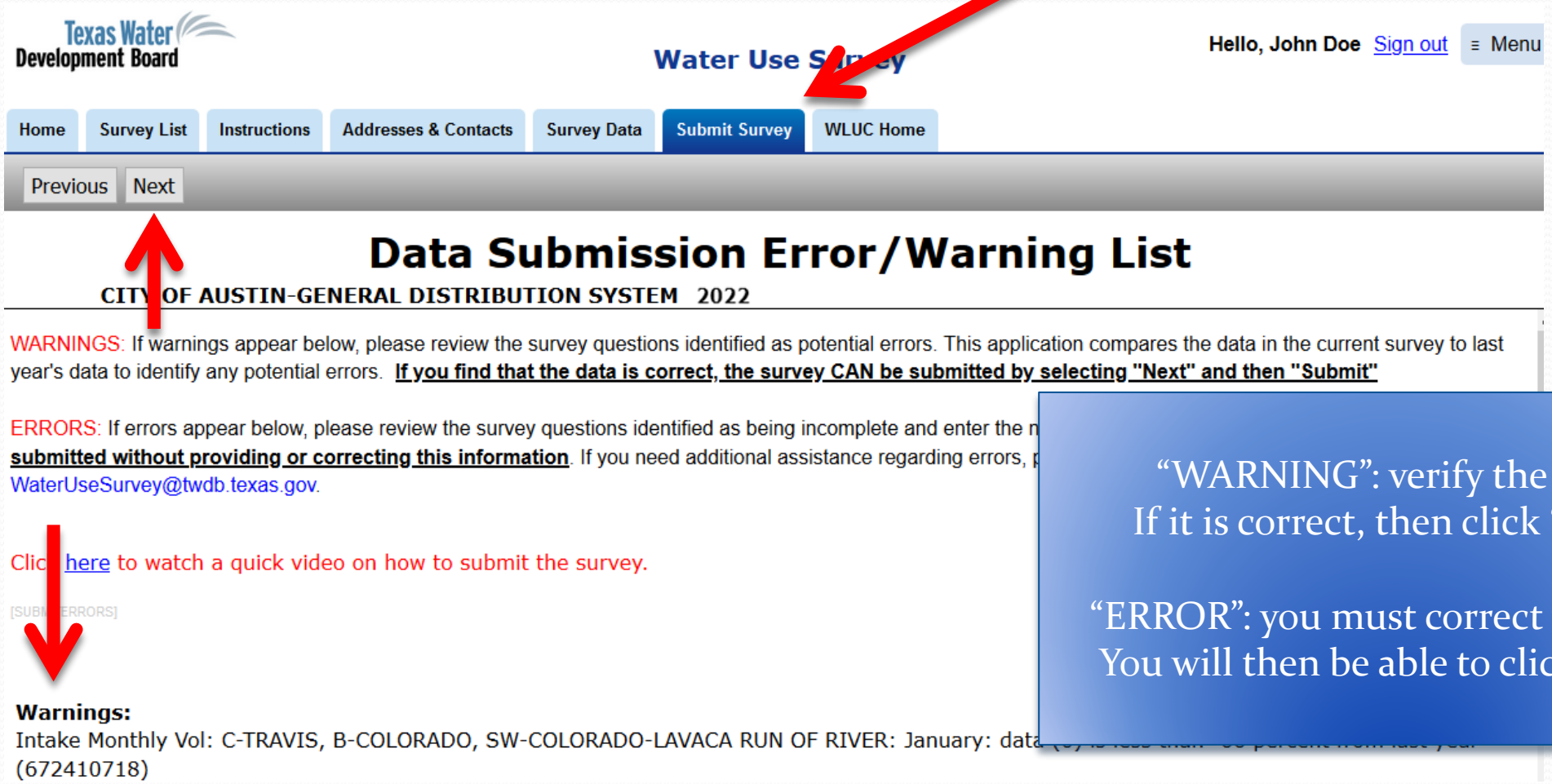
Break down connections and retail water volumes into the separate customer categories.

The sums will auto-calculate to the Total fields.

2

Submit Survey Warning

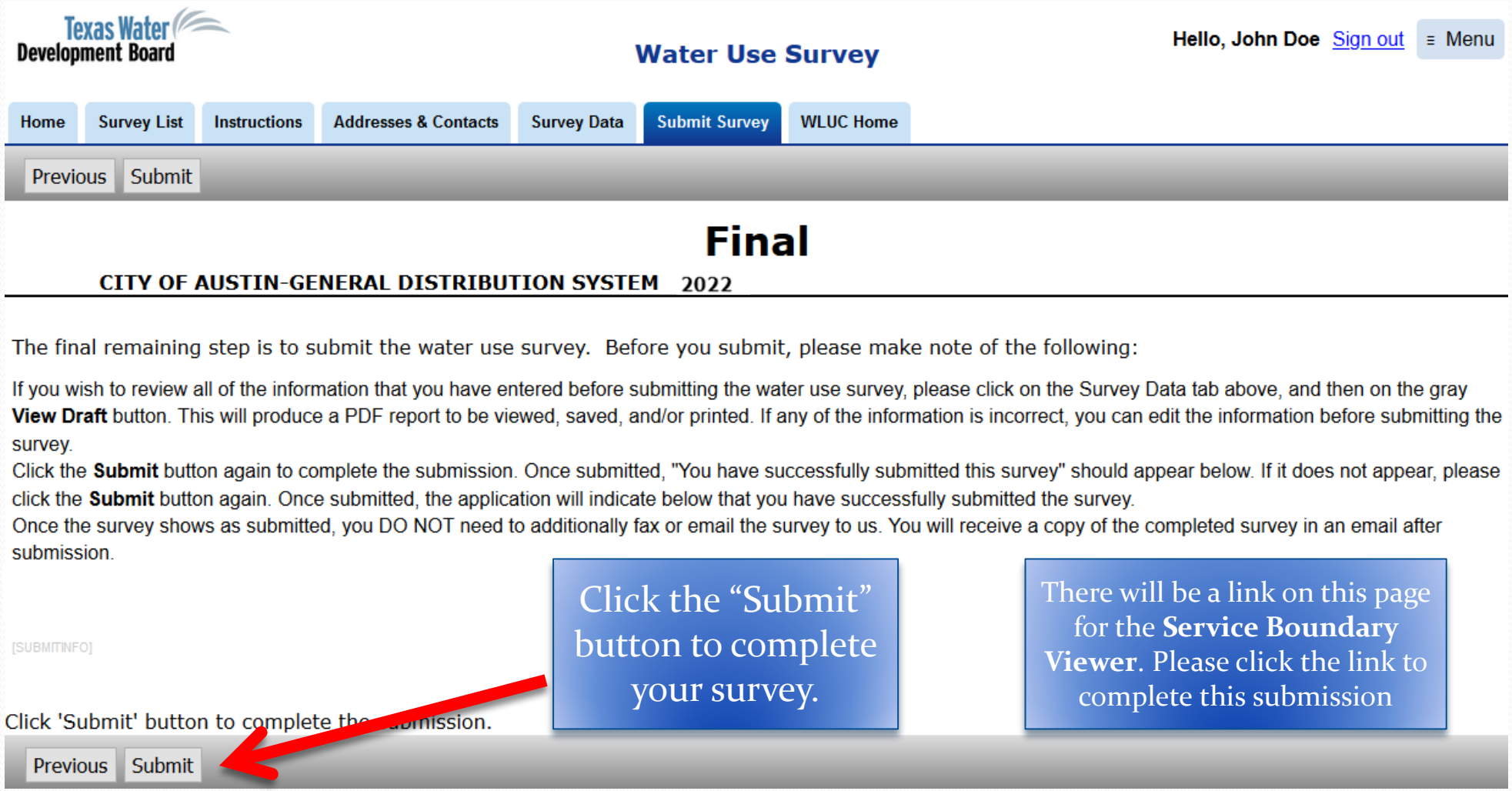
Almost done!
The 4th tab is "Submit Survey".



"WARNING": verify the data.
If it is correct, then click "Next".

"ERROR": you must correct the error.
You will then be able to click "Next"

Submit Survey: Final



Click the "Submit" button to complete your survey.

There will be a link on this page for the **Service Boundary Viewer**. Please click the link to complete this submission

Final Copy of Survey

TEXAS WATER DEVELOPMENT BOARD
WATER USE SURVEY

WATER USE IN CALENDAR YEAR: 2012

SYSTEM NAME:
OPERATOR NAME:
MULTIPLE SURVEY ORG:
MAILING ADDRESS 1:
MAILING ADDRESS 2:
CITY / STATE / ZIP:

SURVEY NUMBER:
PRIMARY USED COUNTY:
PRIMARY USED RIVER BASIN:

ORGANIZATION MAIN PHONE:
MAIN EMAIL:

PWS NAME:

INTAKE:

Water Type	County	Basin	S	ted Prior ntake	Total Volume (gallons)
GROUND WATER PURCHASED	CHEROKEE	NECHES		0.00	46,620,900

JANUARY	FEBRUARY	MARCH	APRIL		OBER	NOVEMBER	DECEMBER
3,623,100	2,449,300	3,062,800	3,122,800		3,508,600	2,695,200	3,647,100

Congratulations, you have successfully submitted your survey!

PLEASE NOTE:
You will receive a copy of the survey in a confirmation email.

CONNECTIONS & USAGE:	CONNECTIONS	
TOTAL METERED RETAIL:		
Residential - Single Family		
Residential - Multi Family		
Institutional		
Commercial		
Industrial	0	0
Agriculture	0	0
Reuse	0	0
TOTAL UNMETERED:	0	0

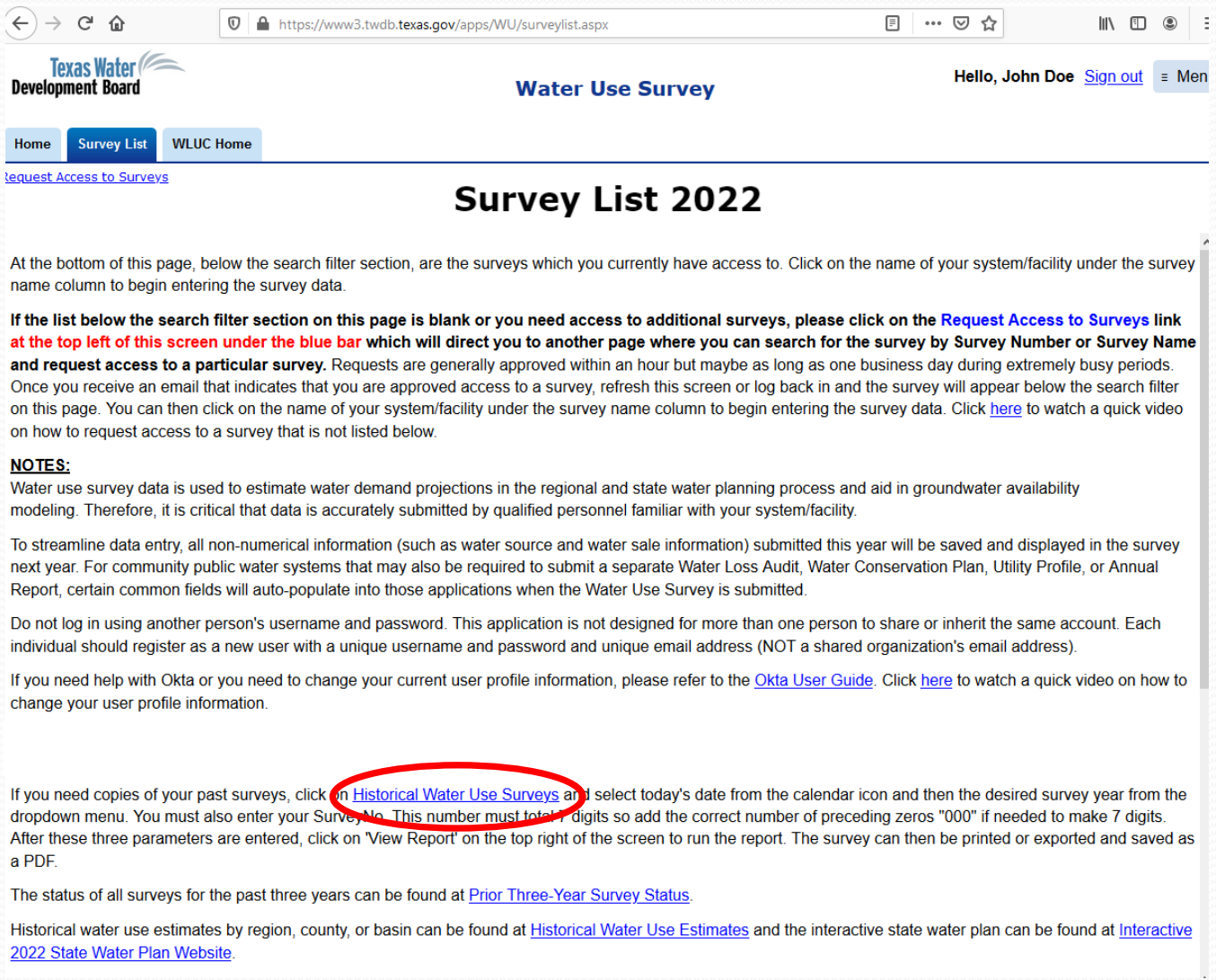
WATER SYSTEM INFORMATION:

Estimated full-time residential population served directly by this system	1,422

DUE DATE

Water use surveys are due March 1st ANNUALLY

Past Copies of Water Use Surveys



https://www3.twdb.texas.gov/apps/WU/surveylist.aspx

Texas Water Development Board

Water Use Survey

Hello, John Doe Sign out ≡ Men

Home | Survey List | WLUC Home

Request Access to Surveys

Survey List 2022

At the bottom of this page, below the search filter section, are the surveys which you currently have access to. Click on the name of your system/facility under the survey name column to begin entering the survey data.

If the list below the search filter section on this page is blank or you need access to additional surveys, please click on the Request Access to Surveys link at the top left of this screen under the blue bar which will direct you to another page where you can search for the survey by Survey Number or Survey Name and request access to a particular survey. Requests are generally approved within an hour but maybe as long as one business day during extremely busy periods. Once you receive an email that indicates that you are approved access to a survey, refresh this screen or log back in and the survey will appear below the search filter on this page. You can then click on the name of your system/facility under the survey name column to begin entering the survey data. Click here to watch a quick video on how to request access to a survey that is not listed below.

NOTES:

Water use survey data is used to estimate water demand projections in the regional and state water planning process and aid in groundwater availability modeling. Therefore, it is critical that data is accurately submitted by qualified personnel familiar with your system/facility.

To streamline data entry, all non-numerical information (such as water source and water sale information) submitted this year will be saved and displayed in the survey next year. For community public water systems that may also be required to submit a separate Water Loss Audit, Water Conservation Plan, Utility Profile, or Annual Report, certain common fields will auto-populate into those applications when the Water Use Survey is submitted.

Do not log in using another person's username and password. This application is not designed for more than one person to share or inherit the same account. Each individual should register as a new user with a unique username and password and unique email address (NOT a shared organization's email address).

If you need help with Okta or you need to change your current user profile information, please refer to the Okta User Guide. Click here to watch a quick video on how to change your user profile information.

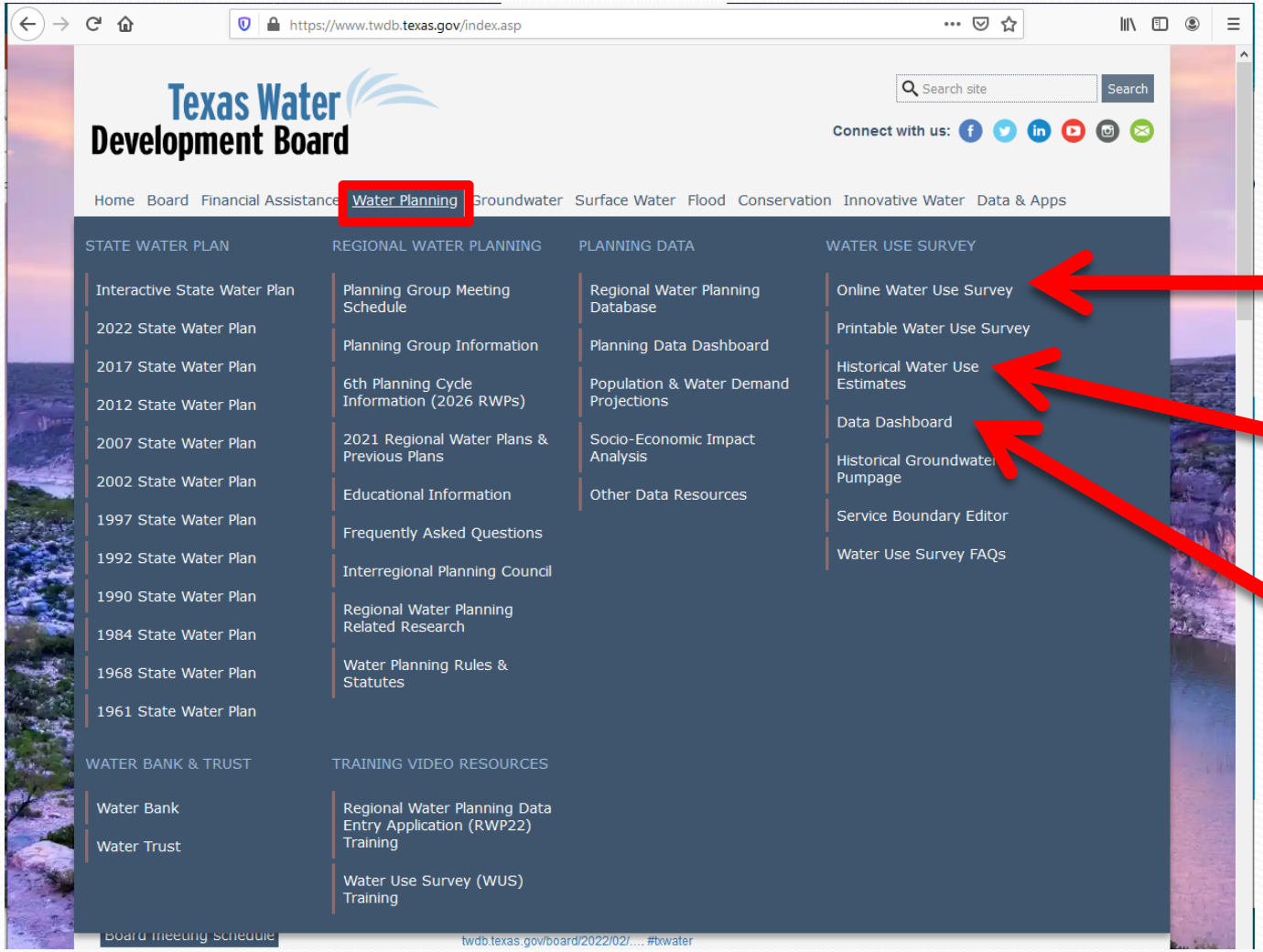
If you need copies of your past surveys, click on Historical Water Use Surveys and select today's date from the calendar icon and then the desired survey year from the dropdown menu. You must also enter your Survey No. This number must total 7 digits so add the correct number of preceding zeros "000" if needed to make 7 digits. After these three parameters are entered, click on 'View Report' on the top right of the screen to run the report. The survey can then be printed or exported and saved as a PDF.

The status of all surveys for the past three years can be found at Prior Three-Year Survey Status.

Historical water use estimates by region, county, or basin can be found at Historical Water Use Estimates and the interactive state water plan can be found at Interactive 2022 State Water Plan Website.

TWDB Website

https://www.twdb.texas.gov/



Link to Online application

Link to public water use data (including past water use surveys)

Link to Data Dashboard

Online Historical Water Use Estimates

https://www.twdb.texas.gov/waterplanning/waterusesurvey/estimates/index.asp

Available by Region, County, & Basin

Year	Region	Population	Municipal	Manu-facturing (Mfg)	Mining	Power	Irrigation	Livestock
2020	A	390,129	86,991	29,253	1,018	10,512	2,041,932	49,068
2020	B	194,174	22,472	1,619	6	2,191	84,264	9,190
2020	C	7,709,194	1,260,778	41,278	4,361	13,280	29,316	16,268
2020	D	795,645	109,568	26,230	4,554	31,636	33,056	22,028
2020	E	889,480	138,317	6,529	3,870	8,153	327,381	2,362
2020	F	694,245	129,165	7,071	150,279	7,813	437,400	12,007
2020	G	2,330,872	377,133	9,776	16,388	129,262	310,817	44,064
2020	H	7,307,988	1,001,617	583,568	6,221	56,843	250,599	11,343
2020	I	1,084,479	174,292	219,615	10,951	29,457	75,830	18,156
2020	J	128,344	23,151	18	214	0	11,654	1,808
2020	K	1,755,004	266,422	23,959	4,817	44,423	357,119	11,749
2020	L	3,006,892	492,051	70,529	45,799	87,370	311,248	23,881
2020	M	1,721,610	275,972	2,770	2,967	10,074	1,125,666	3,960
2020	N	575,933	78,212	52,064	5,043	2,865	14,501	4,832
2020	O	509,782	86,234	5,585	2,089	13,134	2,558,858	52,193
2020	P	51,734	5,913	1,374	963	0	131,039	2,796
2020	**STATE TOTAL**	**29,145,505**	**4,528,288**	**1,081,238**	**259,540**	**447,013**	**8,100,680**	**285,705**

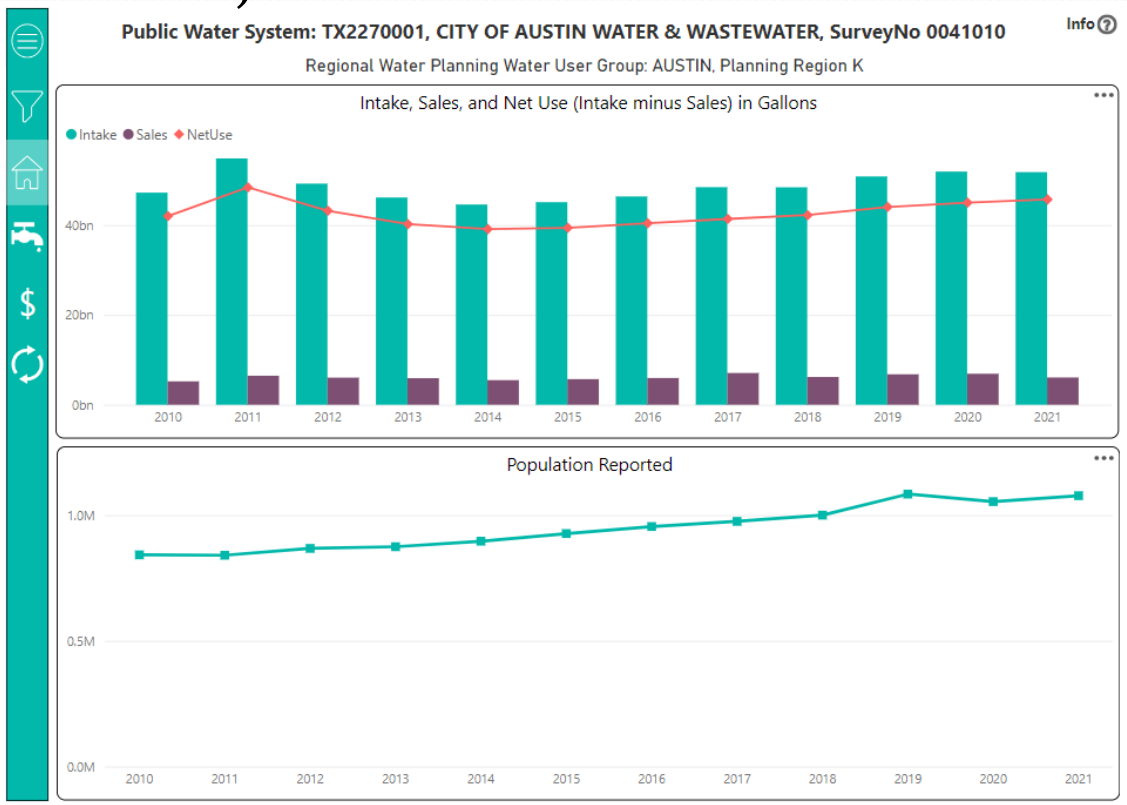
Municipal Ground Water	Municipal Surface Water	Municipal Reuse
64,533	12,032	10,426
5,221	17,131	120
63,804	1,154,576	42,398
32,984	76,163	421
94,443	40,358	3,516
43,009	69,300	16,856
116,767	252,798	7,568
403,126	591,516	6,975
83,660	89,924	708
18,750	3,572	829
53,267	203,446	9,709
375,207	64,937	51,907
25,288	230,425	20,259
14,022	63,197	993
54,726	21,323	10,185
5,913	0	0
1,454,720	**2,890,698**	**182,870**

Data Dashboard

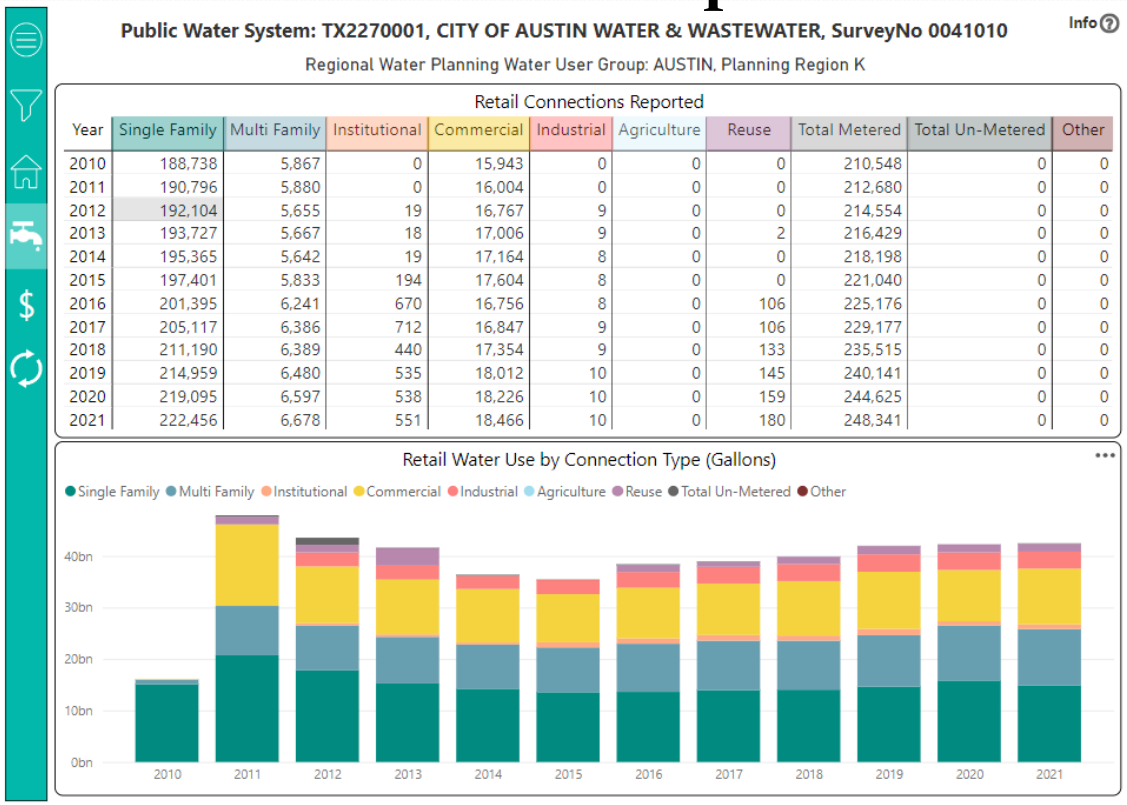
https://www.twdb.texas.gov/waterplanning/waterusesurvey/dashboard/index.asp

Email WaterUseSurvey@twdb.texas.gov to submit any changes to your information by 3/31/2023

Intakes, Sales and Net Use



Retail Connections Reported



Retail Connections Reported

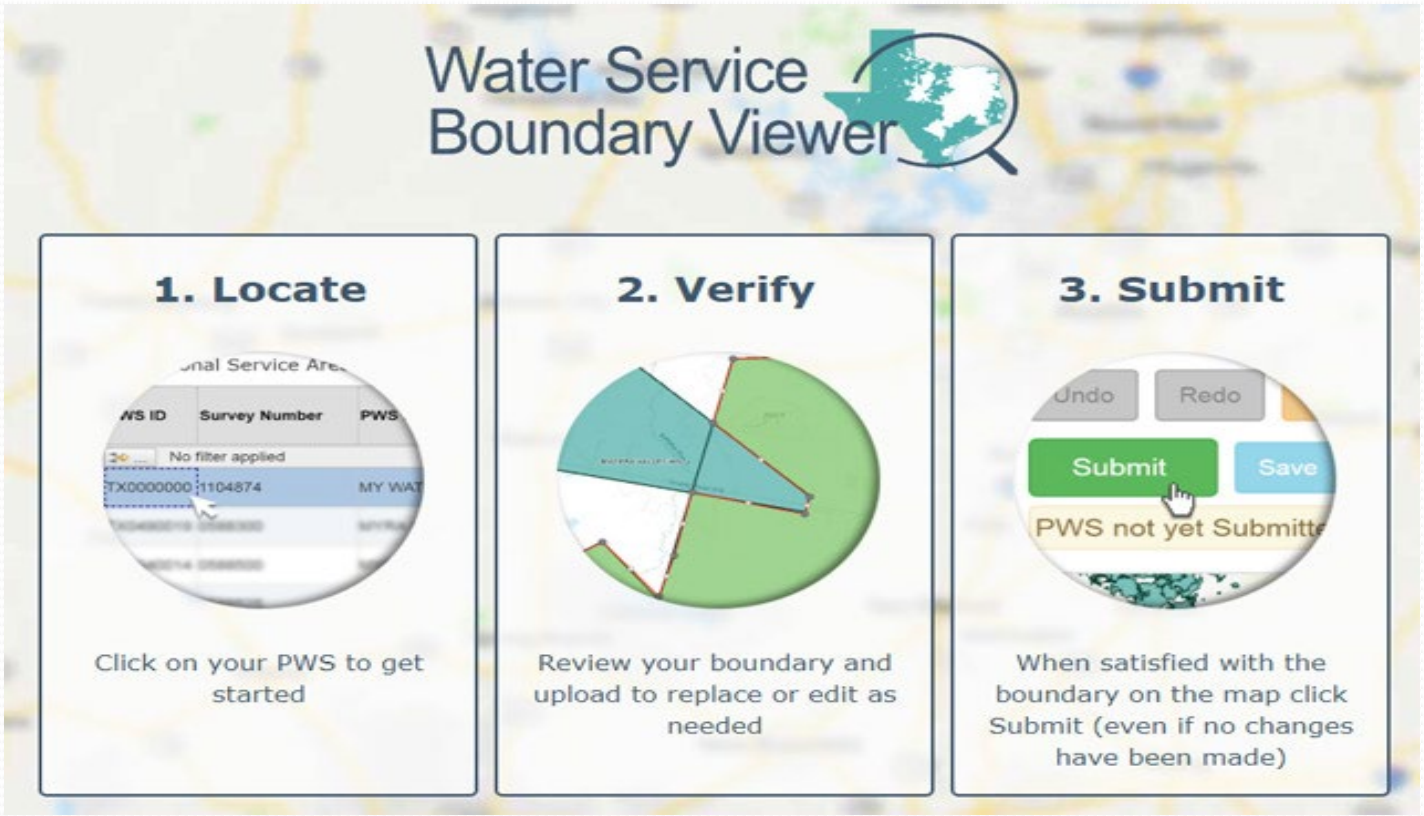
Year	Single Family	Multi Family	Institutional	Commercial	Industrial	Agriculture	Reuse	Total Metered	Total Un-Metered	Other
2010	188,738	5,867	0	15,943	0	0	0	210,548	0	0
2011	190,796	5,880	0	16,004	0	0	0	212,680	0	0
2012	192,104	5,655	19	16,767	9	0	0	214,554	0	0
2013	193,727	5,667	18	17,006	9	0	2	216,429	0	0
2014	195,365	5,642	19	17,164	8	0	0	218,198	0	0
2015	197,401	5,833	194	17,604	8	0	0	221,040	0	0
2016	201,395	6,241	670	16,756	8	0	106	225,176	0	0
2017	205,117	6,386	712	16,847	9	0	106	229,177	0	0
2018	211,190	6,389	440	17,354	9	0	133	235,515	0	0
2019	214,959	6,480	535	18,012	10	0	145	240,141	0	0
2020	219,095	6,597	538	18,226	10	0	159	244,625	0	0
2021	222,456	6,678	551	18,466	10	0	180	248,341	0	0

Texas Water Service Boundary Viewer

Genera Navarra
Water Use, Projections & Planning

Texas Water Development Board

Texas Water Service Boundary Viewer (TWSBV)



Please note the Water Service Boundary Editor will reopen on January 2, 2023

TWSBV - Benefits and Purpose

- Creates & maintains a clearinghouse of all drinking water service area boundaries
- Geographically displays state-collected water data & system information to the public:
  - -PWS ID, PWS Name, PWS Revew date, Area, County
  - -historical WUS data
  - -TCEQ DWW data
  - -more to come!
- Data collected assists with estimating State Water Plan population and demand projections.

TWSBV - Background

- Original map produced in 2009 through a TWDB research grant
- Grant from USGS Water Use Data & Research Program:
  - Identify, update, & maintain the retail water service area boundaries of all active community public water systems (4,500+) in Texas
  - December 2016 – Contract between USGS & TWDB
  - **January 2019 – Application Deployed**

TWSBV - User Types

Editors

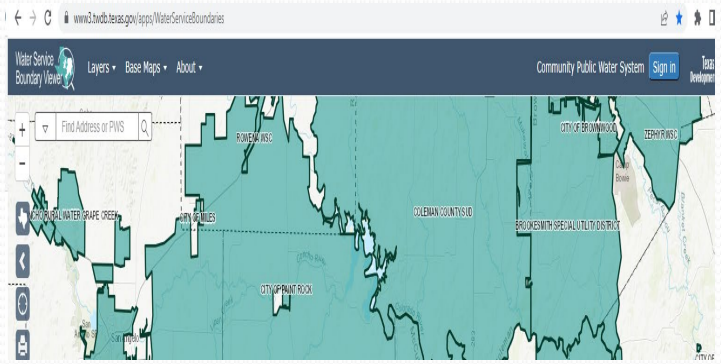
- Editors include Water Use Survey application users & authorized representatives
- Can edit, add, clip, delete, or verify water system boundary annually

Public

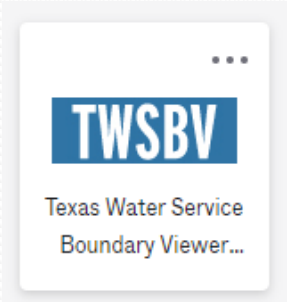
- Can view, create a map, or download a shapefile of the water system boundaries
- Use reporting links to Water Use Survey, Water Loss Audit, Water Quality Data, and demographic information

TWSBV-Ways to Access

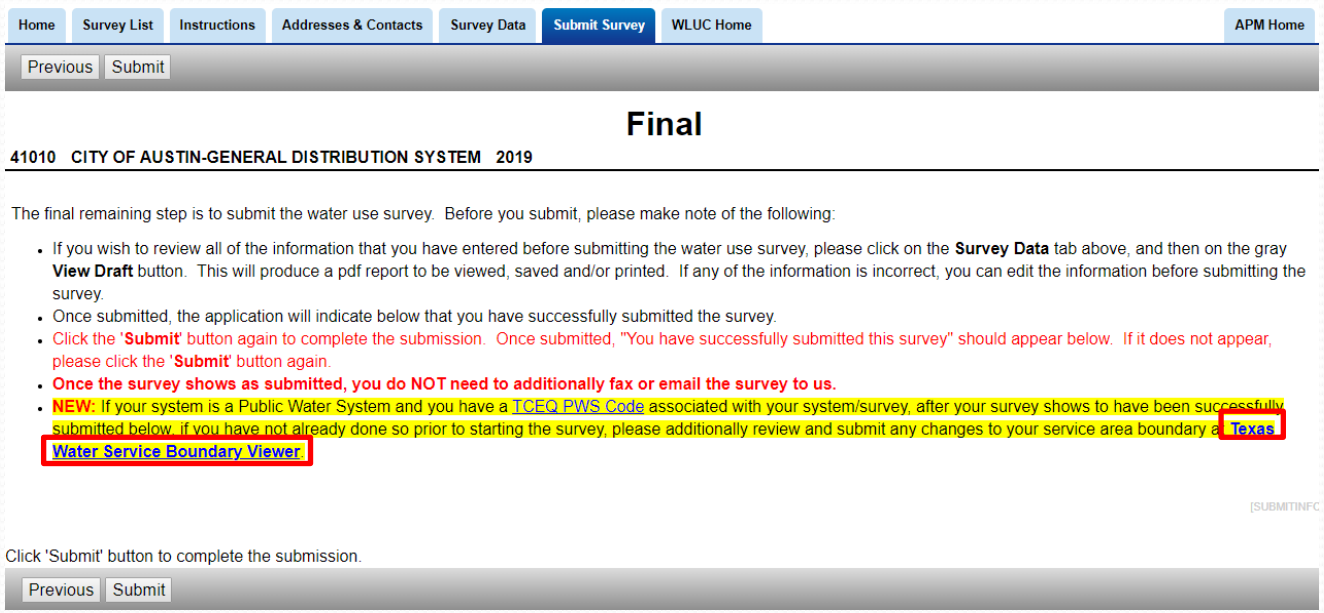
- Directly through the website: https://www3.twdb.texas.gov/apps/WaterServiceBoundaries



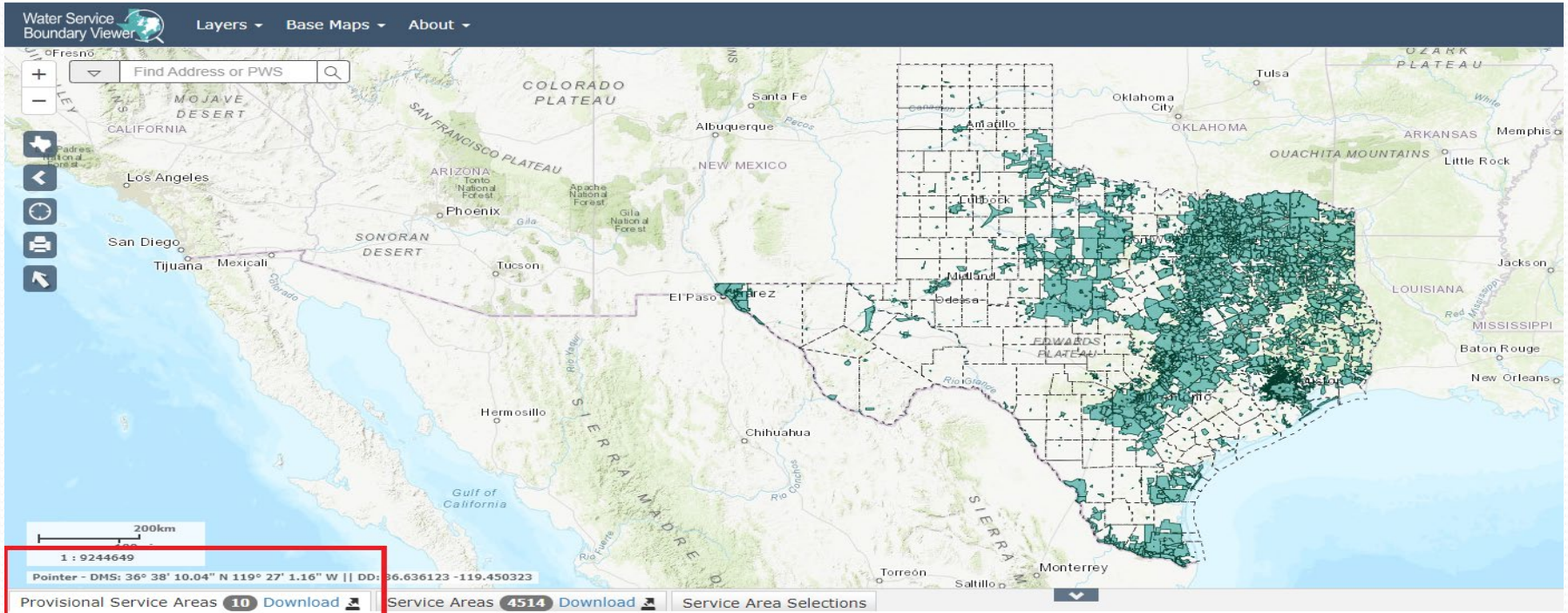
- Through the Okta dashboard



- Using the link at the end of the Water Use Survey



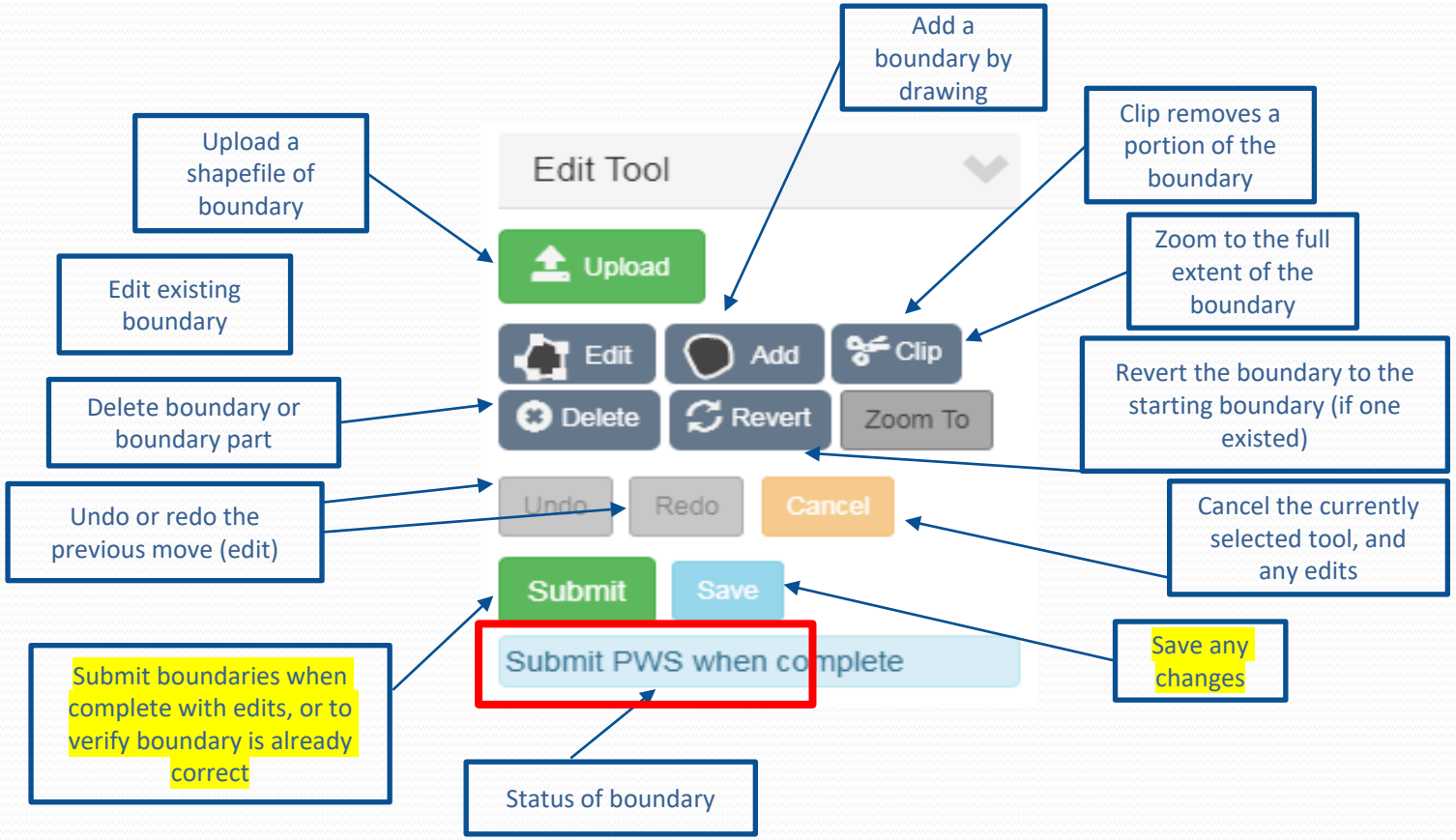
TWSBV – Editor Application



PWS ID	Survey Number	PWS Name	Status	Submit Comments	TWDB Comments	Last Submitted Date	Submitted By	Last Update Date	Last Update Time	Last
No filter applied										
TX1300001	0084000	CITY OF BOERNE	In Progress	Testing the Submit date	5/7/20--approved, no major changes or overlaps.	11/30/2022	Twis Biv	12/1/2022	10:38:09 AM	Twis
TX1010009	0315800	CITY OF GALENA PARK	In Progress		5/18/21--approved, no changes per PWS email.	1/16/2020	David Kent	12/1/2022	10:39:02 AM	Twis
TX0880001	0331400	CITY OF GOLIAD	Not Started	CCN no.10540	Approved by TWDB staff after a review	5/4/2020	earl henning	5/4/2020	10:46:54 AM	earl h
TX0890001	0331950	CITY OF GONZALES	Not Started		5/17/21--approved, no changes per PWS email.	2/26/2020	Ryan Wilkerson	2/26/2020	2:39:42 PM	Ryan

TWSBV – Application Editing Tools

Edit
or
Save



Quick Links

- Editor User Guide: https://www.twdb.texas.gov/waterplanning/waterusesurvey/doc/TWSBV_UserGuide_Editor.pdf
- Service Boundary Editor: https://www.twdb.texas.gov/waterplanning/waterusesurvey/serviceboundaryeditor.asp

Water Service Boundary Editor

If you require assistance, please contact us at WSBViewer@twdb.Texas.gov.

Questions?

Water Use Survey Hotline

8am-5pm Monday – Friday

(512) 463-7952

Water Use Survey Email

WaterUseSurvey@twdb.texas.gov

Water Loss, Use, and Conservation (WLUC) Workshop

First Break - 5 mins

1. **Grab some coffee**
2. **Stretch the Legs**
3. **Check your emails**

- Training Certificates will be presented at a later time!
- PDF copies of these slides will be available!

Water Loss Audit – Part 1 – Data

- Municipal Water Conservation
- Texas Water Development Board (TWDB)

- Unless specifically noted, this presentation does not
- necessarily reflect official Board positions or decisions.

Why Complete a WLA?

- System efficiency
- Extend supply
- Required
- - Loan/Grant
- Regional Water Planning

What is a Water Audit?

A water audit identifies how much water is lost, where, and how much that loss cost the utility.

Records and system control measures such as meters are checked for accuracy to ensure a valid result.

The goal is to help the utility select and implement programs to reduce and sustain water losses to better manage the utility as an efficient business

Once started it never stops.

Who Completes the WLA?

- 3,300 or > connections?
- Active financial obligation?
- Utilities < 3,300 connections are required to submit every 5 years unless it has a loan with TWDB.
- All audits are to be submitted on May 1st.

WLA Training Requirement

31 TEXAS ADMINISTRATIVE CODE (TAC)

§ 358.6(b)(4)

- *Effective January 1, 2019, the water loss audit must be performed by a person who has completed water loss audit training……agency website, can be the one-hour training or this 4-hour webinar.*
- *The person who completes the water loss audit is required to upload the training acknowledgement with their name on it .*

TWDB Website

www.twdb.texas.gov/conservation/municipal/waterloss/index.asp

- Accessing the Water Loss Audit application
- Registered user instructions
- Email address and contact information
- Training webinar

Balance Sheet

<table>
<tr><td rowspan="6">System Input Volume</td><td rowspan="3">Authorized Consumption</td><td rowspan="2">Billed Authorized Consumption</td><td>Billed Metered Consumption</td><td rowspan="2">Revenue Water</td></tr>
<tr><td>Billed Unmetered Consumption</td></tr>
<tr><td rowspan="2">Unbilled Authorized Consumption</td><td>Unbilled Metered Consumption</td><td rowspan="5">Non Revenue Water</td></tr>
<tr><td>Unbilled Unmetered Consumption</td></tr>
<tr><td rowspan="3">Water Loss</td><td rowspan="2">Apparent Loss</td><td>Unauthorized Consumption</td></tr>
<tr><td>Customer Meter Under-Registering</td></tr>
<tr><td rowspan="2">Real Loss</td><td>Billing Adjustment/Waivers</td></tr>
<tr><td>Reported Loss</td></tr>
<tr><td colspan="3">Unreported Loss</td></tr>
</table>

12/8/2022

Welcome to the Water Loss, Use and Conservation Home Page

Based on previously submitted information, the following reports will need to be completed for your water system.

Water Use Survey
Frequency: Annual
Due Date: March 1st every calendar year

Water Use Survey List

Survey Number	PWS Code	System Name	Status	Submitted Date	Authorized Users
0187427	1290038	COUNTRY CLUB WATER SUPPLY	Submitted	02/15/2021	[redacted]
0000290	540015	WHITE RIVER MWD	Not Started		
0041010	2270001	CITY OF AUSTIN-GENERAL DISTRIBUTION SYSTEM	SUBMITTED2	11/16/2021	
0626055	1520067	114TH STREET MHP	Submitted	03/01/2021	

If a retail public water supplier has more than 3,300 retail connections or has an active financial obligation with TWDB, a water loss audit is required to be submitted annually. Otherwise, the next required water loss audit will be for the reporting year of 2020, due by May 1, 2021. If you are unsure about your requirements, please email us at WLA-Group@twdb.texas.gov.

Water Loss Audit
Frequency: Varies (See Audit List Table below)
Due Date: May 1st every calendar year when required

Water Loss Audit List

PWS Code	System Name	Year Due	Status	Submitted Date	Authorized Users
1290038	COUNTRY CLUB WSC	2021	Submitted	11/05/2021	[redacted]
540015	WHITE RIVER MWD	2021	Submitted	04/06/2021	
2270001	CITY OF AUSTIN WATER & WASTEWATER	2021	Submitted	04/30/2021	
200764	BRAZORIA COUNTY MUD 53	2021	Not Submitted		
1520067	114TH STREET MOBILE HOME PARK	2021	Not Submitted		

Water Conservation Annual Report

WC Annual Report List

PWS Code	Utility Type	System Name	Year Due	Status	Submitted Date	Authorized Users
1110007	Retail Water Supplier	Acton MUD	2021	Review Completed	04/23/2021	

Water Conservation Utility Profile

WC Utility Profile List

No record found

Water Conservation Plan

WC Plan List

No record found

Please Note: Please Note: The Water Loss Audit cannot be completed in full until the Water Use Survey has been completed and submitted. The Water Conservation Annual Report cannot be completed in full until both the Water Use Survey and Water Loss Audit have been completed and submitted.

If you have any questions or feel that any of this information is incorrect, please contact:

Water Use Team: Team at 512-463-7952 or waterusesurvey@twdb.texas.gov
Water Loss/Conservation Team: WLA-Group@twdb.texas.gov

New Tab | Water Loss Audit

www3.twdb.texas.gov/apps/wla/Audit.aspx?ay=2019&un=1010027

Apps | TWDB HOME | TWDB INTRANET | TWDB LUC | TCEQ DWW | Workshop Participa... | New Tab | WLA: Requests Pen...

Texas Water Development Board

Water Loss Audit

Home | Logout | Agency Policies | Conta

Home | Worksheet | Audit Report | Request Access | WLUC Home

Water Audit Report for [redacted] Year 2019 | Save | Un-Submit Worksheet | Help for Form Completion | Assessment Scale | Change Year | Cancel

Open Instructions

* FIELDS MARKED WITH A RED STAR MUST BE FILLED OUT BEFORE THIS FORM CAN BE SUBMITTED.

A. Water Utility General Information

1. Water Utility Name: [redacted]

1a. Regional Water Planning Area: H

1b. Address: [redacted]

HOUSTON, TX 77005-2802

2. Contact Information:

* 2a. Name: [redacted]

* 2b. Telephone Number: [redacted]

* 2c. Email Address: [redacted]

* Have you completed Water Loss Auditor Training?

(•) Yes

( )

View Training Completion Document | Delete

3. Reporting Period:

* 3a. Start Date: 1/1/2019 (m/d/yyyy)

* 3b. End Date: 12/31/2019 (m/d/yyyy)

4. Source Water Utilization:

4a. Surface Water: 35.00 %

4b. Ground Water: 65.00 %

Texas Water Development Board

Water Loss Audit

Home | Worksheet | Audit Report | Request Access | WLUC Home

Water Audit Report for [redacted] Year **2019** | Save | Un-Submit Worksheet | Help for Form Completion | Assessment Scale | Change Year | Cancel

Close Instructions

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*** FIELDS MARKED WITH A RED STAR MUST BE FILLED OUT BEFORE THIS FORM CAN BE SUBMITTED.**

Reset Source Water Percentages to Zero

5. Population Served:			
5a. Retail Population Served:	15,016		
5b. Wholesale Population Served:	0		
* 6. Utility's Length of Main Lines:	53.00 miles	Assessment Scale:	4
* 7. Total Retail Metered Connections - Active and Inactive:	6,179		
* 7b. Service Connections:	6,179	Assessment Scale:	3
8. Number of Wholesale Connections Served:	0		
9. Service Connection Density:	116.58 connections per mile		
* 10. Average Yearly System Operating Pressure:	58.00 psi	Assessment Scale:	2
11. Volume Units of Measure:	gallons		

System Input Volume

Total amount of water supplied to the distribution system and should be validated and include an adjustment for master meter inaccuracy.

Total amount of water supplied to the distribution system.

Texas Water Development Board

Water Loss Audit

* FIELDS MARKED WITH A RED STAR MUST BE FILLED OUT BEFORE THIS FORM CAN BE SUBMITTED.

B. System Input Volume

12. Volume of Water Intake:	300,469,000 gallons		
* 13. Produced Water:	300,469,000	Assessment Scale:	4
13a. Production Meter Accuracy:	96.0 %	Assessment Scale:	1
13b. Corrected Input Volume:	312,988,542 gallons		
14. Total Treated Purchased Water:	492,123,000 gallons	Assessment Scale:	1
14a. Treated Purchased Water Meter Accuracy:	96.0 %	Assessment Scale:	3
14b. Corrected Treated Purchased Water Volume:	512,628,125 gallons		
15. Total Treated Wholesale Water Sales:	0 gallons	Assessment Scale:	N/A
15a.Treated Wholesale Water Meter Accuracy:	0.0 %	Assessment Scale:	N/A
15b. Corrected Treated Wholesale Water Sales Volume:	0 gallons		
16. Total System Input Volume:	825,616,667 gallons		

C. Authorized Consumption

Authorized Consumption

Water that is used by customers that are known to the water system.

	Billed Metered
+	Billed Unmetered
+	Unbilled Metered
+	Unbilled Unmetered
=	Authorized Consumption

Texas Water Development Board

Water Loss Audit

* FIELDS MARKED WITH A RED STAR MUST BE FILLED OUT BEFORE THIS FORM CAN BE SUBMITTED.

16. Total System Input Volume: 825,616,667 gallons

C. Authorized Consumption

* 17. Billed Metered:	792,592,000 gallons	Assessment Scale:	4.5	
18. Billed Unmetered:	0 gallons	Assessment Scale:	5	
19. Unbilled Metered:	0 gallons	Assessment Scale:	5	
20. Unbilled Unmetered:	10,320,208 gallons	Assessment Scale:	3	

☑ Use 1.25% of System Input Volume

21. Total Authorized Consumption: 802,912,208 gallons

D. Water Losses

22. Water Losses: 22,704,458 gallons

E. Apparent Losses

* 23. Average Customer Meter Accuracy:	98.0 %	Assessment Scale:	4.5
24. Customer Meter Accuracy Loss:	16,175,347 gallons		

Water Losses

Water losses in the distribution system are categorized as either apparent or real loss.

System Input Volume
- Authorized Consumption
= Water Loss

Apparent Loss

Financial Losses - water that is lost that could have been sold. Non-Revenue Water, Water Theft, Slow Meters and Billing Issues

Unauthorized Consumption
\+ Customer Meter Inaccuracies
\+ Systematic Data handling Errors
= Apparent Loss

Real Loss

Physical Losses – water that enters the distribution system but never reaches a user. Leakage on transmission and distribution mains, storage tank overflows, and service line leaks.

- *Non-revenue water*

Water Loss
- Apparent Loss
= Real Loss

Water Audit Report for [redacted] Year 2021 | Save | Un-Submit Worksheet | Help for Form Completion | Assessment Scale | Change Year | Cancel

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E. Apparent Losses

* 23. Average Customer Meter Accuracy:	100.00 %	Assessment Scale:	4.5
24. Customer Meter Accuracy Loss:	0 gallons		
* 25. Systematic Data Handling Discrepancy:	0 gallons	Assessment Scale:	3
Use 0.25% of Billed Authorized Volume			
* 26. Unauthorized Consumption:	1,498,362 gallons	Assessment Scale:	2.5
Use 0.25% of Billed Authorized Volume			
27. Total Apparent Losses:	1,498,362 gallons		

F. Real Losses

28. Reported Breaks and Leaks:	1,000,000 gallons	Assessment Scale:	2.5
29. Unreported Loss:	272,817 gallons	Assessment Scale:	2
30. Total Real Losses:	1,272,817 gallons		
31. Total Water Losses:	2,771,179 gallons		
32. Non-Revenue Water:	3,521,179 gallons		

Indicators

- Technical & Financial Performance Indicators
  - Quantitative measures of key aspects within your water system.
  - Use these indicators to develop history and track your performance from year to year.

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G. Technical Performance Indicator for Apparent Loss

33. Apparent Losses Normalized:	8.09	gallons lost per connection per day

H. Technical Performance Indicators for Real Loss

34. Real Loss Volume:	4,465,070	gallons
35. Unavoidable Annual Real Losses Volume:	25,691,489	gallons
36. Infrastructure Leakage Index:	0.17	I.L.I.
37. Real Losses Normalized - Service Connections:	1.98	gallons lost per connection per day
38. Real Losses Normalized - Main Lines:	0.00	gallons lost per mile per day

I. Financial Performance Indicators

39. Total Apparent Losses:	18,239,389	gallons
* 40. Retail Price of Water:	0.00232	$ per gallon Assessment Scale: 3
41. Cost of Apparent Losses:	$42,315	

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I. Financial Performance Indicators

39. Total Apparent Losses:	18,239,389 gallons		
* 40. Retail Price of Water:	0.00232 $ per gallon	Assessment Scale:	3
41. Cost of Apparent Losses:	$42,315		
42 Total Real Losses:	4,465,070 gallons		
* 43. Variable Production Cost of Water:	0.000240 $ per gallon	Assessment Scale:	3.5
44. Cost of Real Losses:	$1,072		
45. Total Cost Impact of Apparent and Real Losses	$43,387		
46. Total Assessment Score:	67		

J. System Losses and Gallons Per Capita per Day (GPCD)

Water Loss Indicators

- Line 36 - Infrastructure Leakage Index: performance indicator used by large system > 3,000 connections.
- Lines 41 and Line 44 - Costs of Apparent (revenue) and Real Losses - $$ + $$
- Line 45 – Cost of Total Water Loss - $$$$
- Line 48 & 49 - GPCD (gallons per capita per day) becomes important if you are completing a Water Conservation Plan

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J. System Losses and Gallons Per Capita per Day (GPCD)

47. Total Water Loss per Connection per Day:	10.07 gallons
48. GPCD Input:	151
49. GPCD Loss:	4

K. Wholesale Factor Adjustments

50. Percent of Treated Wholesale Water Traveling through General Distribution System:	0.00 %
51. Volume of Treated Wholesale Water Traveling through General Distribution System:	0
52. Wholesale Factor:	0.00
53. Adjusted Real Loss Volume:	4,465,070
54. Adjusted Cost of Real Losses:	$1,072
55. Adjusted Total Water Loss Volume:	22,704,458

Water Audit Report for [redacted] Year **2019** | Save | Un-Submit Worksheet | Help for Form Completion | Assessment Scale | Change Year | Cancel

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55. Adjusted Total Water Loss Volume:	22,704,458
56. Adjusted Total Cost Impact of Apparent and Real Losses:	$43,387
57. Adjusted Real Loss Per Connection:	1.98
58. Adjusted Real Loss Per Mile:	0.00
59. Adjusted Infrastructure Leakage Index:	0.17
60. Adjusted Total Water Loss - Percentage:	2.75 %
61. Adjusted GPCD Loss:	4

Comments

Water Loss Audit – Why is Unreported loss a negative volume?

Negative or Zero Values

- Sales and input volumes are the same
- Purchased water or produced water meter accuracy is left blank
- Sold and lost more than System input volume.

Accuracy of Data

- *It is very imperative that the WL data be as accurate as possible as all the performance indicators are based on the data.*
  - *System input volume*
  - *Miles of main*
  - *Retail population*
  - *System pressure*
  - *Number of connections*
  - *Apparent loss/connection/day*
  - *Real loss/connection/day*
  - *UARL*

Water Loss Resources

- Troubleshooting, guidance, assessment scales, leak detection loan form, WUS and WLA checklist, monthly water loss report, and more:

- http://www.twdb.texas.gov/conservation/resources/waterloss-resources.asp

Questions

Contact

Water Loss Audit

mark.mathis@twdb.texas.gov

POLL

Water Loss, Use, and Conservation (WLUC) Workshop

Second Break - 10 mins

1. Grab some more coffee
2. Stretch the Legs
3. Check your emails

- Training Certificates will be presented at a later time!
- PDF copies of these slides will be available!

Water Loss, Use, and Conservation (WLUC) Workshop

Water Loss Audit – Part 2 - Assessments

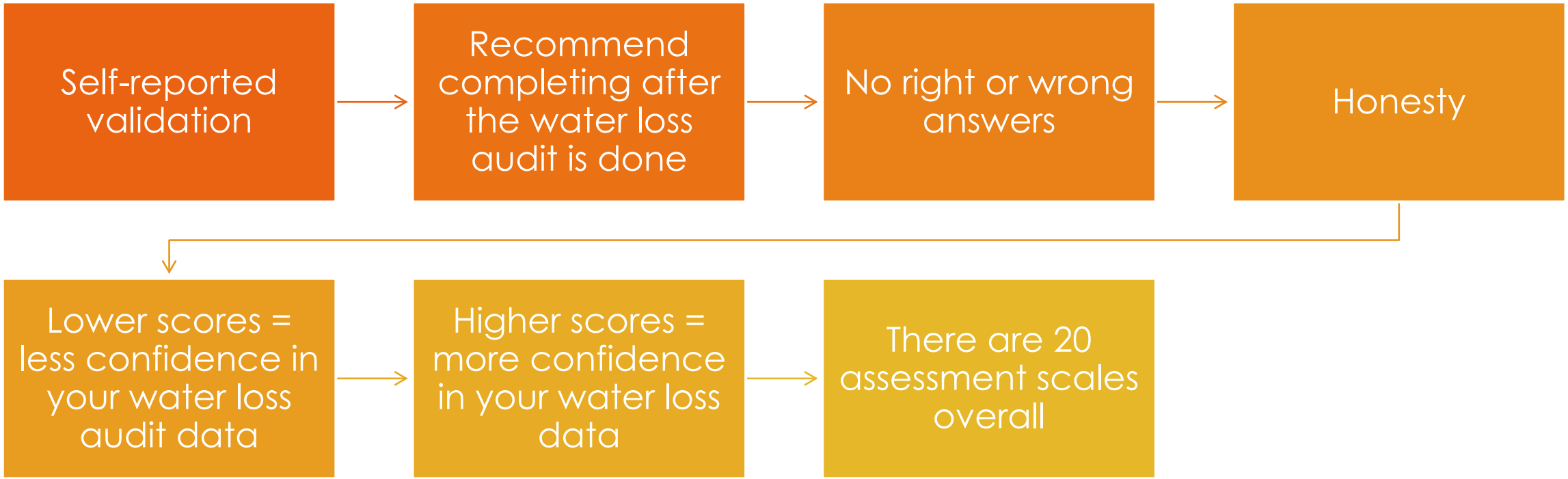
- Municipal Water Conservation
- Texas Water Development Board (TWDB)

- Unless specifically noted, this presentation does not
- necessarily reflect official Board positions or decisions.

Assessment Scale Benefits

- Self-reported Assessments complete the WLA to determine how accurate your data is
- Consider your options and **take action**
- Also known as Water Loss Audit validation
- Bridge from WLA to Action to Water loss mitigation

Assessment Scales Tips



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5. Population Served:

5a. Retail Population Served: 15,016

5b. Wholesale Population Served: 0

* 6. Utility's Length of Main Lines: 53.00 miles Assessment Scale: 4

* 7. Total Retail Metered Connections - Active and Inactive: 6,179

* 7b. Service Connections: 6,179 Assessment Scale: 3

8. Number of Wholesale Connections Served: 0

9. Service Connection Density: 116.58 connections per mile

* 10. Average Yearly System Operating Pressure: 58.00 psi Assessment Scale: 2

11. Volume Units of Measure: gallons

B. System Input Volume

12. Volume of Water Intake: 300,469,000 gallons

Component	Length of Main Lines Assessment Scale Table Adapted from American Water Works Association Free Water Audit Software©										
SYSTEM DATA	0.5	1	1.5	2	2.5	3	3.5	4	4.5	5	N/A
Line 6 *Length of main lines, miles*	*Current condition:* Poorly assembled and maintained paper as-built records of existing water main installations makes accurate determination of system pipe length impossible. Length of mains is estimated.	*Current condition:* Paper records in poor or uncertain condition (no annual tracking of installations & abandonments). Poor procedures to ensure that new water mains installed by developers are accurately documented.	*Conditions between 1 and 2*	*Current condition:* Sound written policy and procedures exist for documenting new water main installations, but gaps in management result in a uncertain degree of error in tabulation of mains length.	*Conditions between 2 and 3*	*Current condition:* Sound written policy and procedures exist for permitting and commissioning new water mains. Highly accurate paper records with regular field validation; or electronic records and asset management system in good condition. Includes system backup.	*Conditions between 3 and 4*	*Current condition:* Sound written policy and procedures exist for permitting and commissioning new water mains. Electronic recordkeeping such as a Geographical Information System (GIS) and asset management system are used to store and manage data.	*Conditions between 4 and 5*	*Current condition:* Sound written policy exists for managing water mains extensions and replacements. Geographic Information System (GIS) data and asset management database agree and random field validation proves truth of databases. Records of annual field validation should be available for review.	Not a choice
Improvements in quantifying the length of mains	*To improve to 1:* Assign personnel to inventory current as-built records and compare with customer billing system records and highway plans in order to verify poorly documented pipelines. Assemble policy documents regarding permitting and documentation of water main installations by the utility and building developers; identify gaps in procedures that result in poor	*To improve to 2:* Complete inventory of paper records of water main installations for several years prior to audit year. Review policy and procedures for commissioning and documenting new water main installation.		*To improve to 3:* Finalize updates/improvements to written policy and procedures for permitting/commissioning new main installations. Confirm inventory of records for five years prior to audit year; correct any errors or omissions.		*To improve to 4:* Launch random field checks of limited number of locations. Convert to electronic database such as a Geographic Information System (GIS) with backup as justified. Develop written policy and procedures.		*To improve to 5:* Link Geographic Information System (GIS) and asset management databases, conduct field verification of data. Record field verification information at least annually.		*To maintain a 5:* Continue with standardization and random field validation to improve the completeness and accuracy of the system.	Not a choice

Water Audit Report for [redacted] Year **2019** | Save | Un-Submit Worksheet | Help for Form Completion | Assessment Scale | Change Year | Cancel

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B. System Input Volume

12. Volume of Water Intake:	300,469,000 gallons			
* 13. Produced Water:	300,469,000		Assessment Scale:	4
13a. Production Meter Accuracy:	96.0 %		Assessment Scale:	1
13b. Corrected Input Volume:	312,988,542 gallons			
14. Total Treated Purchased Water:	492,123,000 gallons		Assessment Scale:	1
14a. Treated Purchased Water Meter Accuracy:	96.0 %		Assessment Scale:	3
14b. Corrected Treated Purchased Water Volume:	512,628,125 gallons			
15. Total Treated Wholesale Water Sales:	0 gallons		Assessment Scale:	N/A
15a. Treated Wholesale Water Meter Accuracy:	0.0 %		Assessment Scale:	N/A
15b. Corrected Treated Wholesale Water Sales Volume:	0 gallons			
16. Total System Input Volume:	825,616,667 gallons			

C. Authorized Consumption

Component	Produced Water Assessment Scale Table Adapted from American Water Works Association Free Water Audit Software©										
WATER SUPPLIED	0.5	1	1.5	2	2.5	3	3.5	4	4.5	5	
Line 13 Produced water (volume of treated water entering distribution system from own sources)	*Current condition:* Less than 25% of water production sources are metered, remaining sources are estimated. No regular meter accuracy testing or electronic calibration conducted.	*Current condition:* 25% - 50% of treated water production sources are metered; other sources estimated. No regular meter accuracy testing or electronic calibration conducted.	*Conditions between 1 and 2*	*Current condition:* 50% - 75% of treated water production sources are metered, other sources estimated. Occasional meter accuracy testing or electronic calibration conducted.	*Conditions between 2 and 3*	*Current condition:* At least 75% of treated water production sources are metered, or at least 90% of the source flow is derived from metered sources. Meter accuracy testing and/or electronic calibration of related instrumentation is conducted annually. Less than 25% of tested meters are found outside of +/- 6% accuracy.	*Conditions between 3 and 4*	*Current condition:* 100% of treated water production sources are metered, meter accuracy testing and electronic calibration of related instrumentation is conducted annually, less than 10% of meters are found outside of +/- 6% accuracy.	*Conditions between 4 and 5*	*Current condition:* 100% of treated water production sources are metered, meter accuracy testing and electronic calibration of related instrumentation is conducted semi-annually, with less than 10% found outside of +/- 3% accuracy. Procedures are reviewed by a third party knowledgeable in the M36 methodology.	Sele the p imp wat (i so
Improvements in quantifying produced water volume	*To improve to 1:* Organize and launch efforts to collect data for determining volume from own sources	*To improve to 2:* Locate all water production sources on maps and in the field, launch meter accuracy testing for existing meters, begin to install meters on unmetered water production sources and replace any obsolete/defective meters.		*To improve to 3:* Formalize annual meter accuracy testing for all source meters; specify the frequency of testing. Complete installation of meters on unmetered water production sources and complete replacement of all obsolete/defective meters.		*To improve to 4:* Conduct annual meter accuracy testing and calibration of related instrumentation on all meter installations on a regular basis. Complete project to install new, or replace defective existing, meters so that entire production meter population is metered. Repair or replace meters outside of +/- 6% accuracy.		*To improve to 5:* Maintain annual meter accuracy testing and calibration of related instrumentation for all meter installations. Repair or replace meters outside of +/- 3% accuracy. Investigate new meter technology; pilot one or more replacements with innovative meters in attempt to further improve meter accuracy.		*To maintain a 5:* Standardize meter accuracy test frequency to semi-annual, or more frequent, for all meters. Repair or replace meters outside of +/- 3% accuracy. Continually investigate/pilot improving metering technology.	

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16. Total System Input Volume: 825,616,667 gallons

C. Authorized Consumption

* 17. Billed Metered:	792,592,000 gallons	Assessment Scale:	4.5	
18. Billed Unmetered:	0 gallons	Assessment Scale:	5	
19. Unbilled Metered:	0 gallons	Assessment Scale:	5	
20. Unbilled Unmetered:	10,320,208 gallons	Assessment Scale:	3	

☑ Use 1.25% of System Input Volume

21. Total Authorized Consumption: 802,912,208 gallons

D. Water Losses

22. Water Losses: 22,704,458 gallons

E. Apparent Losses

* 23. Average Customer Meter Accuracy:	98.0 %	Assessment Scale:	4.5
24. Customer Meter Accuracy Loss:	16,175,347 gallons		

Component	Billed Metered Assessment Scale Table Adapted from American Water Works Association Free Water Audit Software©										
AUTHORIZED CONSUMPTION	0.5	1	1.5	2	2.5	3	3.5	4	4.5	5	N/A
Line 17 Billed metered *Volume for Line 17 is populated from the Water Use Survey*	*Current condition:* Less than 50% of customers with volume-based billings from meter readings; flat or fixed rate billing exist for the majority of the customer population.	*Current condition:* At least 50% of customers with volume-based billing from meter reads; flat rate billing for others. Manual meter reading is conducted, with less than 50% meter read success rate, remaining accounts' consumption is estimated. Limited meter records, no regular meter testing or replacement. Billing data maintained on paper records, with no auditing.	*Conditions between 1 and 2*	*Current condition:* At least 75% of customers with volume-based, billing from meter reads; flat or fixed rate billing for remaining accounts. Manual meter reading is conducted with at least 50% meter read success rate; consumption for accounts with failed reads is estimated. Purchase records verify age of customer meters; only very limited meter accuracy testing is conducted. Customer meters are replaced only upon complete failure. Computerized billing records exist, but only sporadic internal auditing conducted.	*Conditions between 2 and 3*	*Current condition:* At least 90% of customers with volume-based billing from meter reads; consumption for remaining accounts is estimated. Manual customer meter reading gives at least 80% customer meter reading success rate; consumption for accounts with failed reads is estimated. Good customer meter records exist, but only limited meter accuracy testing is conducted. Regular replacement is conducted for the oldest meters. Computerized billing records exist with annual auditing of summary statistics conducting by utility personnel.	*Conditions between 3 and 4*	*Current condition:* At least 97% of customers exist with volume-based billing from meter reads. At least 90% customer meter reading success rate; or at least 80% read success rate with planning and budgeting for trials of Automatic Meter Reading (AMR) or Advanced Metering Infrastructure (AMI) in one or more pilot areas. Good customer meter records. Regular meter accuracy testing guides replacement of statistically significant number of meters each year. Routine auditing of computerized billing records for global and detailed statistics occurs annually by utility personnel, and is verified by third party at least once every five years.	*Conditions between 4 and 5*	*Current condition:* At least 99% of customers exist with volume-based billing from meter reads. At least 95% customer meter reading success rate; or minimum 80% meter reading success rate, with Automatic Meter Reading (AMR) or Advanced Metering Infrastructure (AMI) trials underway. Statistically significant customer meter testing and replacement program in place on a continuous basis. Computerized billing with routine, detailed auditing, including field investigation of representative sample of accounts undertaken annually by utility personnel. Audit is conducted by third party auditors at least once every three years.	Not a choice
Improvements in quantifying volume of billed	*To improve to 1:* Conduct investigations or trials of customer meters to select appropriate meter models. Budget funding for meter installations. Investigate volume based water rate structures.	*To improve to 2:* Purchase and install meters on unmetered accounts. Implement policies to improve meter reading success. Catalog meter information during meter read visits to identify age/model of existing meters. Test a minimal number of meters for accuracy. Install computerized billing system.		*To improve to 3:* Purchase and install meters on unmetered accounts. Eliminate flat fee billing and establish appropriate water rate structure based upon measured consumption. Continue to achieve verifiable success in removing manual meter reading barriers. Expand meter accuracy testing. Launch regular meter replacement program. Launch a program of annual auditing of global billing statistics by utility personnel.		*To improve to 4:* Purchase and install meters on unmetered accounts. If customer meter reading success rate is less than 97%, assess cost-effectiveness of Automatic Meter Reading (AMR) or Advanced Metering Infrastructure (AMI) system for portion or entire system; or otherwise achieve ongoing improvements in manual meter reading success rate to 97% or higher. Refine meter accuracy testing program. Set meter replacement goals based upon accuracy test results.		*To improve to 5:* Purchase and install meters on unmetered accounts. Launch Automatic Meter Reading (AMR) or Advanced Metering Infrastructure (AMI) system trials if manual meter reading success rate of at least 99% is not achieved within a five-year program. Continue meter accuracy testing program. Conduct planning and budgeting for large scale meter replacement based upon meter life cycle analysis using cumulative flow target. Continue annual detailed billing data auditing by utility personnel and	*To maintain a 5:* Continue annual internal billing data auditing, and third party auditing at least every three years. Continue customer meter accuracy testing to ensure that accurate customer meter readings are obtained and entered as the basis for volume based billing. Stay abreast of improvements in	Not a choice

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* FIELDS MARKED WITH A RED STAR MUST BE FILLED OUT BEFORE THIS FORM CAN BE SUBMITTED.

E. Apparent Losses

* 23. Average Customer Meter Accuracy:	98.0 %	Assessment Scale:	4.5
24. Customer Meter Accuracy Loss:	16,175,347 gallons		
25. Systematic Data Handling Discrepancy:	0 gallons	Assessment Scale:	4
26. Unauthorized Consumption:	2,064,042 gallons	Assessment Scale:	2
☑ Use 0.25% of System Input Volume			
27. Total Apparent Losses:	18,239,389 gallons		

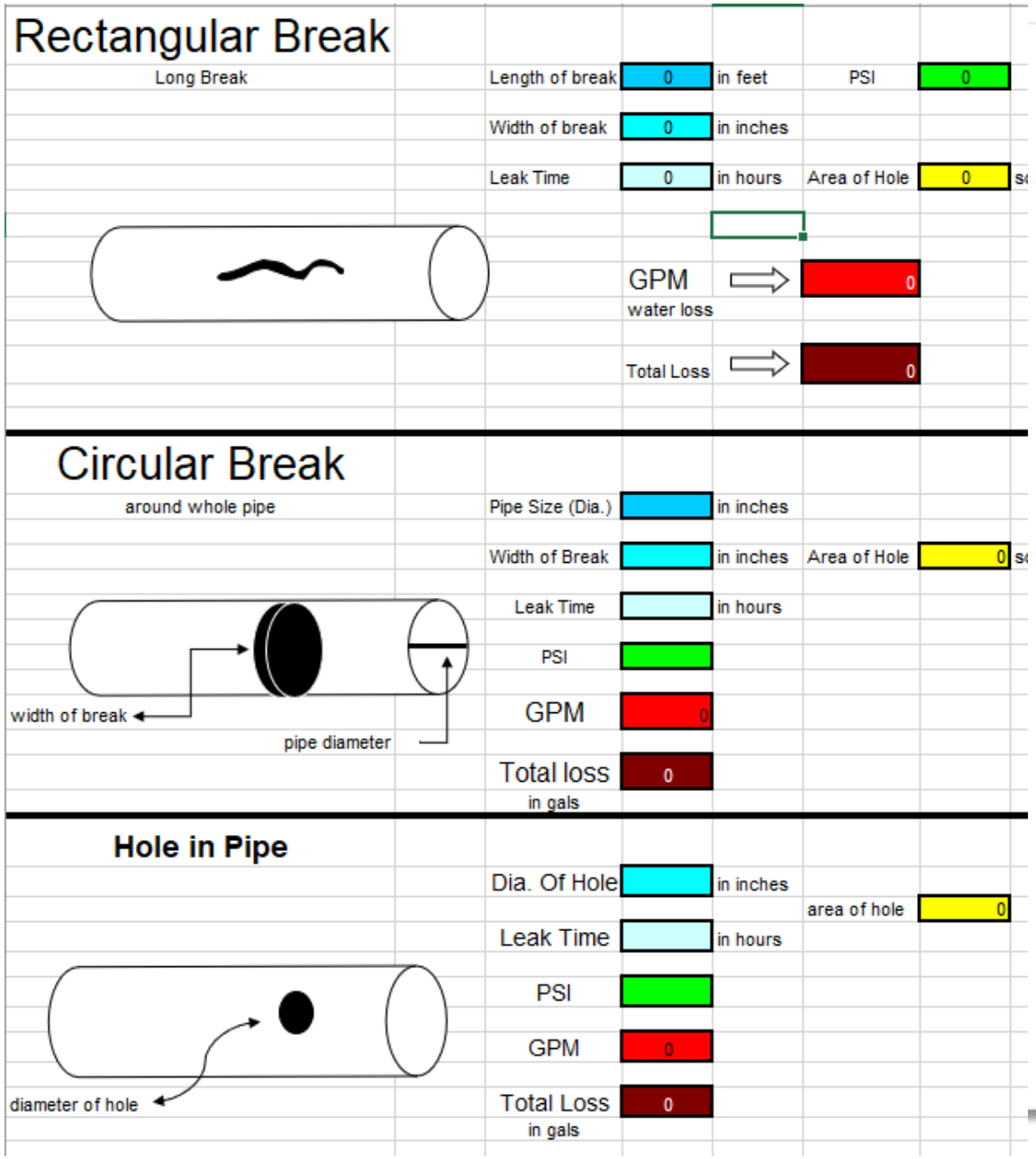
F. Real Losses

28. Reported Breaks and Leaks:	1,000,000 gallons	Assessment Scale:	3.5
29. Unreported Loss:	3,465,070 gallons	Assessment Scale:	1
30. Total Real Losses:	4,465,070 gallons		
31. Total Water Losses:	22,704,458 gallons		
32. Non-Revenue Water:	33,024,667 gallons		

Component	Adapted from American Water Works Association Free Water Audit Software©										
APPARENT LOSSES	0.5	1	1.5	2	2.5	3	3.5	4	4.5	5	N/A
Line 23 Average customer meter accuracy	*Current condition:* Customer meters exist, but with unorganized paper records on meters; no meter accuracy testing or meter replacement program for any size of retail meter. Metering workflow is driven chaotically with no proactive management. Loss volume due to aggregate meter inaccuracy is estimated.	*Current condition:* Poor recordkeeping and meter oversight is recognized by water utility management who has allotted staff and funding resources to organize improved recordkeeping and start meter accuracy testing. Existing paper records gathered and organized to provide cursory disposition of meter population. Customer meters are tested for accuracy only upon customer request.	*Conditions between 1 and 2*	*Current condition:* Reliable recordkeeping exists; meter information is improving as meters are replaced. Meter accuracy testing is conducted annually for a small number of meters (more than just customer requests, but less than 1% of inventory). A limited number of the oldest meters are replaced each year. Inaccuracy volume is largely an estimate, but refined based upon limited testing data.	*Conditions between 2 and 3*	*Current condition:* A reliable electronic recordkeeping system for meters exists. The meter population includes a mix of new high performing meters and dated meters with suspect accuracy. Routine, but limited, meter accuracy testing and meter replacement occur. Inaccuracy volume is quantified using a mix of reliable and less certain data.	*Conditions between 3 and 4*	*Current condition:* Ongoing meter replacement and accuracy testing result in highly accurate customer meter population. Testing is conducted on samples of meters of varying age and accumulated volume of throughput to determine optimum replacement time for various types of meters.	*Current condition:* Ongoing meter replacement and accuracy testing result in highly accurate customer meter population. Statistically significant number of meters are tested in audit year. This testing is conducted on samples of meters of varying age and accumulated volume of throughput to determine optimum replacement time for these meters.	*Current condition:* Good records of all active customer meters exist and include as a minimum: meter number, account number/location, type, size and manufacturer. Ongoing meter replacement occurs according to a targeted and justified basis. Regular meter accuracy testing gives a reliable measure of composite inaccuracy volume for the customer meter population. New metering technology is embraced to keep overall accuracy improving. Procedures are reviewed by a third party knowledgeable in the M36 methodology.	Not a choice
Improvements to average customer meter accuracy	*To improve to 1:* Gather available meter purchase records. Conduct testing on a small number of meters believed to be the most inaccurate. Review staffing needs of the metering group and budget for necessary resources to better organize meter	*To improve to 2:* Implement a reliable record keeping system for customer meter histories, preferably using electronic methods typically linked to, or part of, the Customer Billing System or Customer Information System. Expand meter accuracy testing to a larger group of meters.		*To improve to 3:* Standardize the procedures for meter recordkeeping within an electronic information system. Accelerate meter accuracy testing and meter replacements guided by testing results.		*To improve to 4:* Expand annual meter accuracy testing to evaluate a statistically significant number of meter makes/models. Expand meter replacement program to replace statistically significant number of poor performing meters each year.		*To improve to 4.5:* Continue efforts to manage meter population with reliable recordkeeping. Test a statistically significant number of meters each year and analyze test results in an ongoing manner to serve as a basis for a target meter	*To improve to 5:* Continue efforts to manage meter population with reliable recordkeeping, meter testing and replacement. Evaluate new meter types and install one or more types in 5-10	*To maintain a 5:* Increase the number of meters tested and replaced as justified by meter accuracy test data. Continually monitor development of new metering technology and Advanced Metering Infrastructure (AMI) to grasp opportunities for	Not a choice

Component	Reported Breaks and Leaks Assessment Scale Table Adapted from American Water Works Association Free Water Audit Software©										
REAL LOSSES	0.5	1	1.5	2	2.5	3	3.5	4	4.5	5	N/A
Line 28 Reported breaks and leaks	*Current condition:* Arbitrary estimates of reported breaks and leaks repaired. Repairs of reported breaks and leaks not documented.	*Current condition:* Reported breaks and leaks estimated by repair crew is suspect. No written procedures exist for estimating or documenting breaks and leaks.	*Conditions between 1 and 2*	*Current condition:* Reported breaks and leaks are estimated by repair crew. Written procedures exist for estimating or documenting breaks and leaks.	*Conditions between 2 and 3*	*Current condition:* Breaks and leaks reported by customers and city staff fixed <75% of time. Call-to-repair times known, but are greater than one week average. Good records of breaks and leaks exist.	*Conditions between 3 and 4*	*Current condition:* Breaks and leaks reported by customers and city staff fixed >75% of time. Call-to-repair times average less than one week. Computerized maintenance management system is used to document leak repair trends.	*Conditions between 4 and 5*	*Current condition:* Breaks and leaks reported by customers and city staff fixed >90% of time. Call-to-repair times average less than three days. Outstanding computer maintenance records track system deficiencies and repair crew performance.	Not a choice
Improvements in quantifying reported breaks and leaks	*To improve to 1:* Document reported breaks and leaks. Use leak rates calculation to estimate volume lost from reported breaks and leaks.	*To improve to 2:* Develop standards to find, repair, and document leaks and breaks. Continue to use of leak rates calculation to estimate volume lost from reported breaks and leaks.		*To improve to 3:* Standardize recordkeeping of leak incidents, location, response time, and other repair data.		*To improve to 4:* Continue to standardize recordkeeping process. Begin planning a computerized maintenance management system. Reduce average leak run time to less than one week.		*To improve to 5:* Implement computerized maintenance management system to document repairs. Reduce average leak run time to less than two days. Begin planning a proactive leak detection program.		*To maintain a 5:* Use capabilities of computerized maintenance management system to track failure trends in distribution system and repair crew activity costs. Conduct a proactive leak detection program.	Not a choice

- www.twdb.texas.gov/conservation/resources/waterloss-resources.asp
- https://moruralwater.org/water-tools/



Water Audit Report for [redacted], Year **2019** | Save | Un-Submit Worksheet | Help for Form Completion | Assessment Scale | Change Year | Cancel

Close Instructions

The **Save** button will save any data you enter for retrieval on future visits to this site.
Use the **Submit Worksheet** button to save your data and indicate that your form is completed and ready for TWDB review.

IMPORTANT - Read this - How to use the **Save, Submit Worksheet and Un-Submit Worksheet** buttons -->

If further assistance is needed contact WLA-Group@twdb.texas.gov or 512.463.0987.

* **FIELDS MARKED WITH A RED STAR MUST BE FILLED OUT BEFORE THIS FORM CAN BE SUBMITTED.**

38. Real Losses Normalized - Main Lines: 0.00 gallons lost per mile per day

I. Financial Performance Indicators

39. Total Apparent Losses: 18,239,389 gallons

* 40. Retail Price of Water: 0.00232 $ per gallon Assessment Scale: 3

41. Cost of Apparent Losses: $42,315

42 Total Real Losses: 4,465,070 gallons

* 43. Variable Production Cost of Water: 0.000240 $ per gallon Assessment Scale: 3.5

44. Cost of Real Losses: $1,072

45. Total Cost Impact of Apparent and Real Losses $43,387

46. Total Assessment Score: 67

Component	Customer Retail Price of Water Assessment Scale Table Adapted from American Water Works Association Free Water Audit Software©										
COST DATA	0.5	1	1.5	2	2.5	3	3.5	4	4.5	5	N/A
Line 40 Customer retail price of water (applied to apparent losses)	*Current condition:* Antiquated, cumbersome water rate structure is used, with periodic historic amendments that were poorly documented and implemented; resulting in classes of customers being billed inconsistent charges. The actual composite billing rate likely differs significantly from the published water rate structure, but a lack of auditing leaves the degree of error indeterminate.	*Current condition:* Dated, cumbersome water rate structure, not always employed consistently in actual billing operations. The actual composite billing rate is known to differ from the published water rate structure, and a reasonably accurate estimate of the degree of error is determined, allowing a composite billing rate to be quantified.	*Conditions between 1 and 2*	*Current condition:* Straight-forward water rate structure in use, but not updated in several years. Billing operations reliably employ the rate structure. The composite billing rate is derived from a single customer class such as residential customer accounts, neglecting the effect of different rates from varying customer classes.	*Conditions between 2 and 3*	*Current condition:* Clearly written, up-to-date water rate structure is in force and is applied reliably in billing operations. Composite customer rate is determined using a weighted average residential rate using volumes of water in each rate block.	*Conditions between 3 and 4*	*Current condition:* Effective water rate structure is in force and is applied reliably in billing operations. Composite customer rate is determined using a weighted average composite consumption rate, which includes residential, commercial, industrial, institutional (CII), and any other distinct customer classes within the water rate structure.	*Conditions between 4 and 5*	*Current condition:* Current, effective water rate structure is in force and applied reliably in billing operations. The rate structure and calculations of composite rate - which includes residential, commercial, industrial, institutional (CII), and other distinct customer classes - are reviewed by a third party knowledgeable in the M36 methodology at least once every five years.	Not a choice
Improvements in quantifying the retail price of water	*To improve to 1:* Formalize the process to implement water rates, including a secure documentation procedure. Create a current, formal water rate document and gain approval from all stakeholders.	*To improve to 2:* Review the water rate structure and update/formalize as needed. Assess billing operations to ensure that actual billing operations incorporate the established water rate structure.		*To improve to 3:* Evaluate volume of water used in each usage block by residential users. Multiply volumes by full rate structure.		*To improve to 4:* Evaluate volume of water used in each usage block by all classifications of users. Multiply volumes by full rate structure.		*To improve to 5:* Conduct a periodic third-party audit of water used in each usage block by all classifications of users. Multiply volumes by full rate structure.		*To maintain a 5:* Keep water rate structure current in addressing the water utility's revenue needs. Update the calculation of the customer unit rate as new rate components, customer classes, or other components are modified.	Not a choice

Total Assessment Score

- As you enter your confidence values, the program will give you a Total Assessment Score out of 100.
- Measures the policies and processes used currently when you gather data for the audit.
- The assessment is a number that should be increasing every year.
- Improve the accuracy of the data in order to identify opportunities for water loss reduction.

Water Loss Control Planning Guide

Functional Focus Area	Level I (0-25)	Level II (26-50)	Level III (51-70)	Level IV (71-90)	Level IV (91-100)
Audit Data Collection	Launch auditing and loss control team; address production meter deficiencies.	Analyze business process for customer metering/billing functions and water supply operation.	Establish/revise policies and procedures for data collection.	Refine data collection practices and establish as routine business process.	Annual water audit is reliable gauge of year-to-year water efficiency standing.
Short-term loss control	Research information on leak detection programs. Begin flowcharting analysis of customer billing system.	Conduct loss assessment investigations on a sample portion of system: customer meter testing, leak survey, theft.	Establish ongoing mechanisms for customer meter accuracy testing, active leakage control, and infrastructure monitoring.	Refine, enhance, or expand ongoing programs based on economic justification.	Stay abreast of improvements in metering, meter reading, billing, leakage management, and infrastructure rehabilitation.
Long-term loss control	N/A	Begin to assess long-term needs requiring large expenditure: customer meter replacement, water main replacement, new customer billing system, or Automatic Meter Reading.	Begin to assemble economic business case for long-term needs based upon improved data becoming available through the water audit process.	Conduct detailed planning, budgeting, and launch of comprehensive improvements for metering, billing, or infrastructure management.	Continue incremental improvements in short-term and long-term loss control interventions.
Target-setting	N/A	N/A	Establish long-term apparent and real loss reduction goals (+10 year horizon).	Establish mid-range (5 year horizon) apparent and real loss reduction goals.	Evaluate and refine loss control goals on a yearly basis.
Benchmarking	N/A	N/A	Preliminary Comparisons – can begin to rely upon Infrastructure Leakage Index (ILI) for performance comparison for real losses.	Performance Benchmarking – ILI is meaningful in comparing real loss standing.	Identify Best Practices – the ILI is very reliable as a real loss performance indicator for best in class service.

* Adapted from American Water Works Association©

From Audit to Action

- Compare audits year to year
- Understand water losses through improved data collection.
- Understanding of data collection for each division of the water utility
- Strive to become more knowledgeable in data collection process

Validation of WL Data

- Develop and conduct round table discussion of interested parties
  - Invite staff from relevant departments
    - Unmetered connections
    - Contractor meters
    - Monthly main line breaks
      - How is volume lost at each break calculated?
    - Disconnects – any issues
    - How many meters were replaced during the month

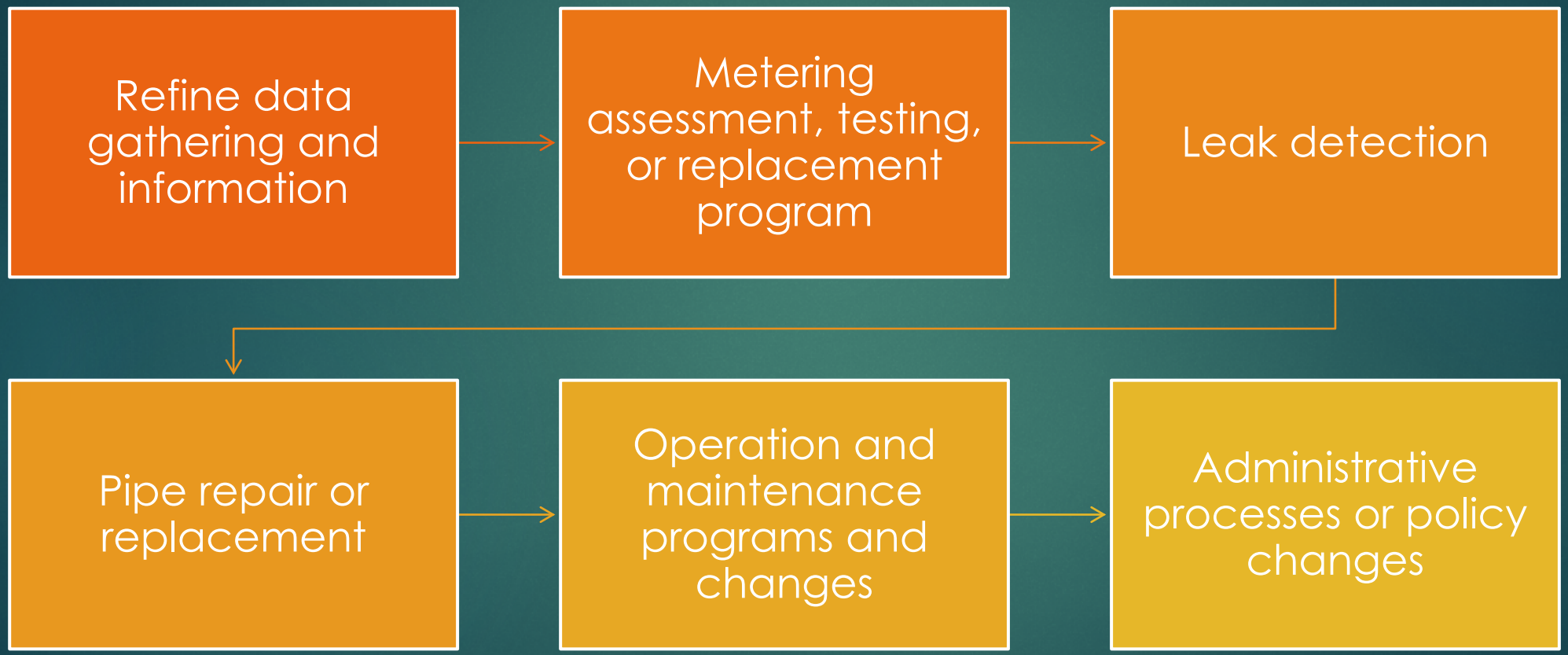
Validation – Grading data

- Essentially grading/scoring own data
- Have a staff member audit your scores
  - Validate the auditor's scores

Validation – Next level

- Examples of Validation measures
  - Measure supply meter accuracy
    - Volumetric testing using insertion meter
    - Testing in situ (in place)
  - Field verify system wide pressure
    - Install temporary loggers to monitor pressure dynamics
  - Improve understanding of Apparent loss by conducting random tests
    - Test wide range of consumption volume meters

Taking Action



Data Validation

- Apparent Loss Management Tools
- Billing Data Analysis
- Accurate Metering Process
- Accounting for Meter Loss
- Leak Detection Methods
- Real Loss Management Tools
- Leak Detection Methods
- Pressure Management

Questions for Review

- Were your goals met? If not, why not?
- Where do you need more accurate information?
- Are you asking the right questions?
- Is there another performance indicator that should be considered?
- Look at trends by reviewing historic data – has water loss improved?
- How can the system improve water loss performance?
- Mark Mathis is always available; remember he is with the gov't and is here to help.

Water Loss Resources

- Troubleshooting, guidance, assessment scales, leak detection loan form, WUS and WLA checklist, monthly water loss report, and more.
- http://www.twdb.texas.gov/conservation/resources/waterloss-resources.asp
- http://www.twdb.texas.gov/conservation/municipal/waterloss/historical-annual-report.asp

Questions

Contact

Water Loss Audit

mark.mathis@twdb.texas.gov

POLL

Water Loss, Use, and Conservation (WLUC) Workshop

Last Break - 5 mins

1. **Grab some water**
2. **Stretch the Legs**
3. **Check your emails**

- Training Certificates will be presented at a later time!
- PDF copies of these slides will be available!

Water Loss, Use, and Conservation Workshop
Water Conservation

Municipal Water Conservation
Water Science & Conservation
Texas Water Development Board (TWDB)

Unless specifically noted, this presentation does not necessarily reflect official Board positions or decisions.

Content and Topics

- Water Conservation
- Statutes and Requirements
- Reports, Forms, and Plans
  - Annual report
  - Utility Profile
  - Water Conservation Plan
- Municipal Water Conservation Planning Tool
- Flow of data
- Resources and Information Available
- Questions or Concerns…

Statutes and Requirements

Report Name	Who is Required to Report	When is Report Due
Water Conservation Plan	Entities with loans greater than $500,000 (TWDB), 3,300 connections or greater (TWDB), a non-irrigation surface water right greater than 1,000 ac-ft/yr. (TCEQ), or an irrigation surface water right greater than 10,000 ac-ft/yr. (TCEQ).	Plans are revised every 5 years. The next revision for many entities is due to **TWDB, May 1, 2024**. TWDB shall be provided a copy of Plans submitted to TCEQ.
Water Conservation Plan Annual Report	All entities with a Water Conservation Plan.	Reports are due to TWDB every year by May 1st.
Water Loss Audit	Retail public water suppliers with either an active financial obligation with the TWDB or having more than 3,300 connections should submit an annual water loss audit. All retail public water suppliers must submit a water loss audit once every five years.	Annual water loss audits are due by May 1 of each year for the previous year. The next audit for the five-year cycle is due by May 1, 2026, for the year 2025.
Water Use Survey	Entities that have received a letter, generally municipalities with a population of 25 or greater, or high-volume industrial water use.	Surveys are due every year, 60 days after receiving a letter.

Statutes and Requirements

1. Entities with loans greater than $500,000 (TWDB)

2. 3,300 connections or greater (TWDB),

3. A non-irrigation surface water right greater than 1,000 ac-ft/yr. (TCEQ), or an irrigation surface water right greater than 10,000 ac-ft/yr. (TCEQ).

However…

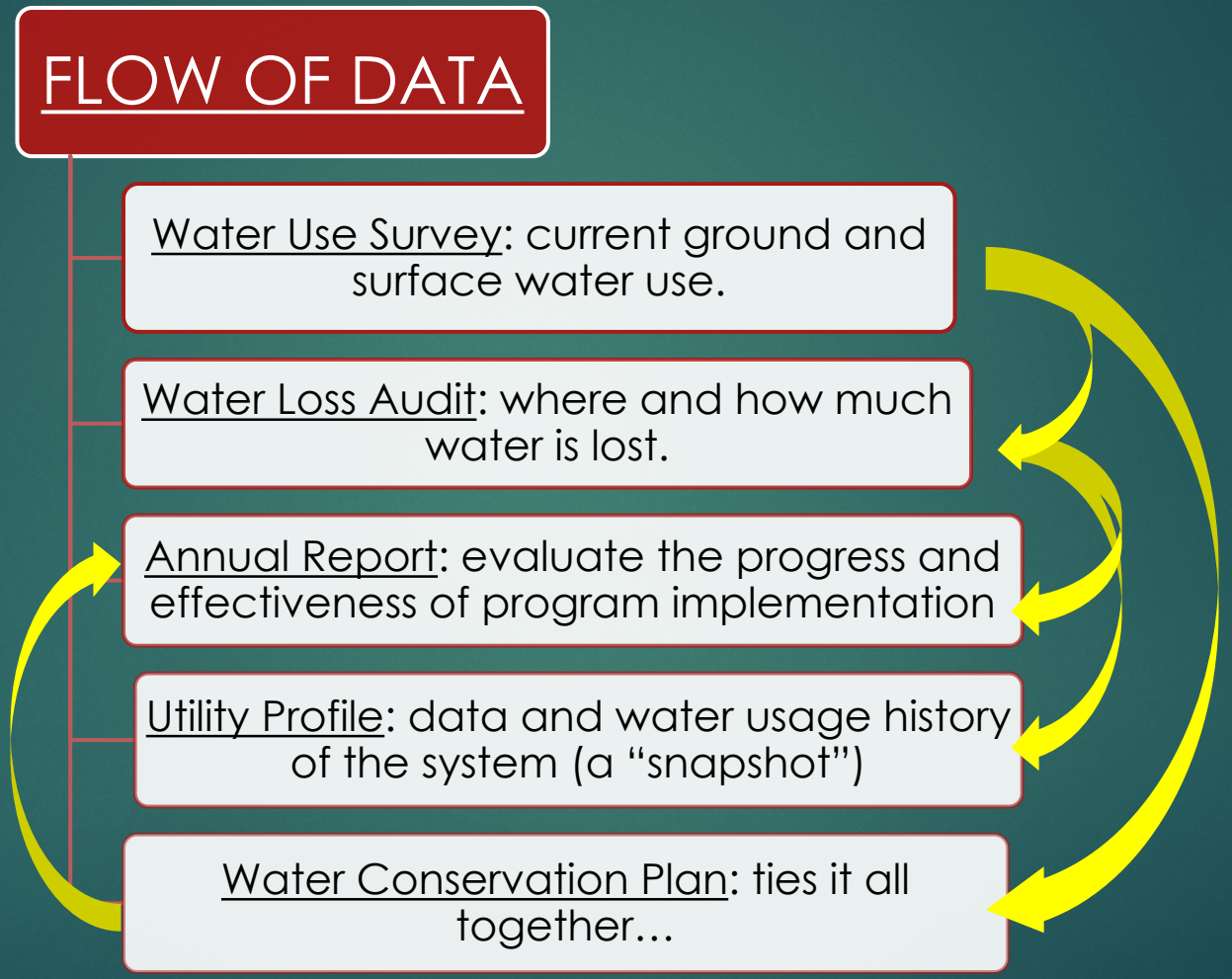
The purpose of a **Water Conservation** is to ensure water use efficiency within your operation and/or system. The Water Conservation Plan is a strategy or combination of strategies for…

1. reducing the overall consumption of water,
2. efficiency in the use of water,
3. reducing the loss or waste of water,
4. or increasing recycling and reuse of water.

Even if you are not required, having a water conservation plan can only serve to benefit your system…

- Conservation strategies
- Best Management strategies
- Cost saving measures
- Accountability

The why…


FLOW OF DATA
Water Use Survey: current ground and surface water use.
Water Loss Audit: where and how much water is lost.
Annual Report: evaluate the progress and effectiveness of program implementation
Utility Profile: data and water usage history of the system (a "snapshot")
Water Conservation Plan: ties it all together…

Quiz

Which of these is not a report?

1. Water Use Survey
2. Water Loss Audit
3. Annual Report
4. Utility Profile
5. Water Conservation Plan

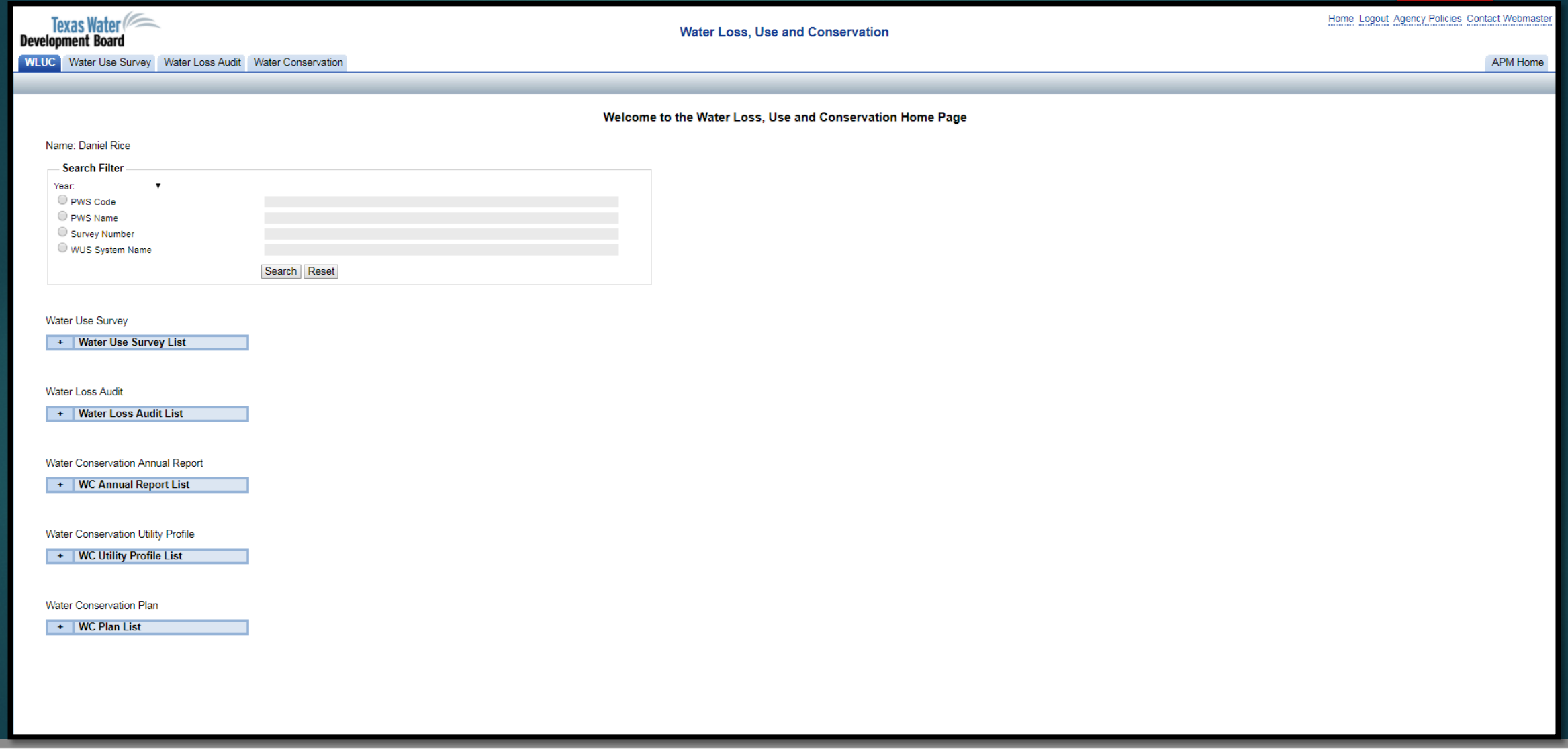
Quiz

Which of these is not a report?

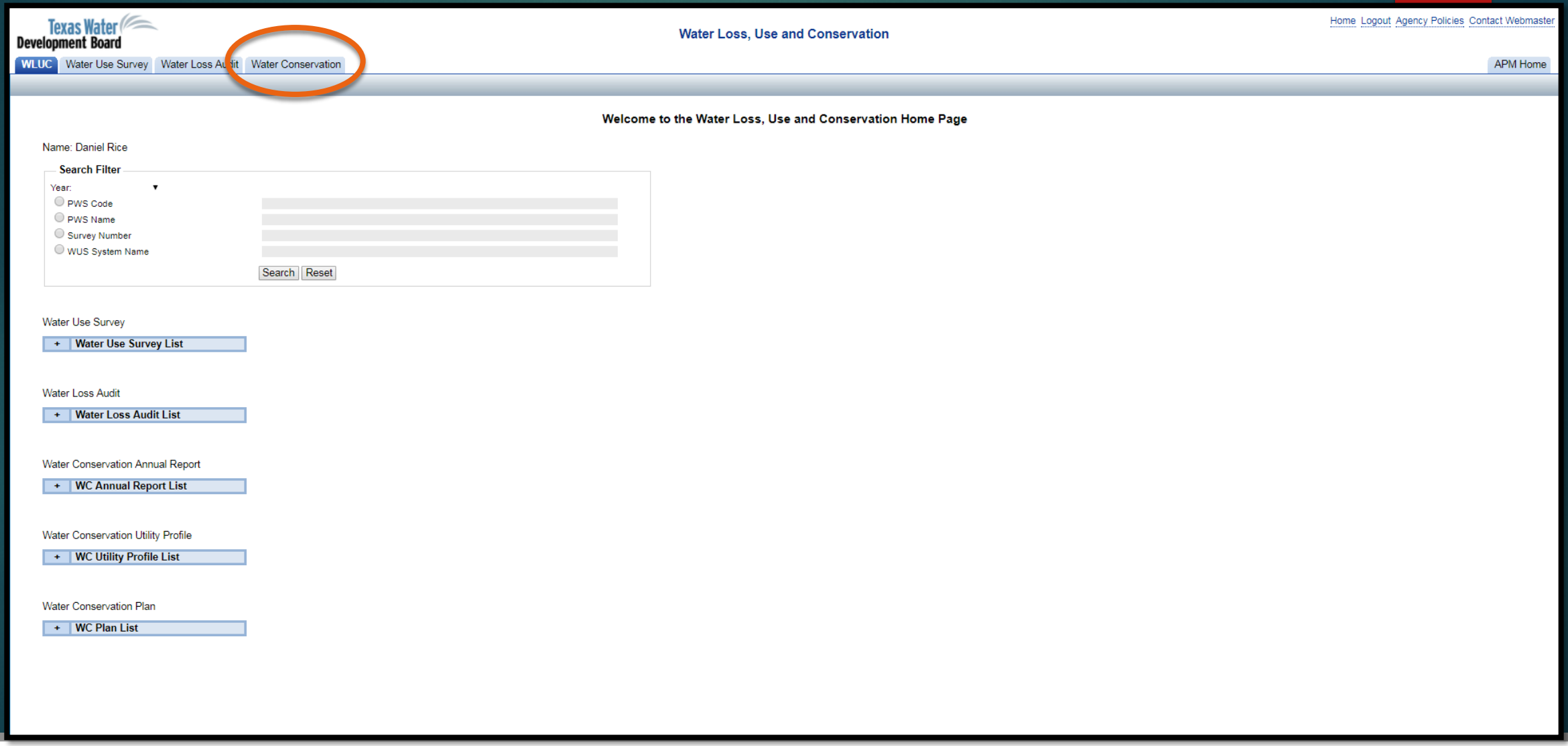
1. Water Use Survey
2. Water Loss Audit
3. Annual Report
4. Utility Profile
5. Water Conservation Plan

- Does that make it better though?

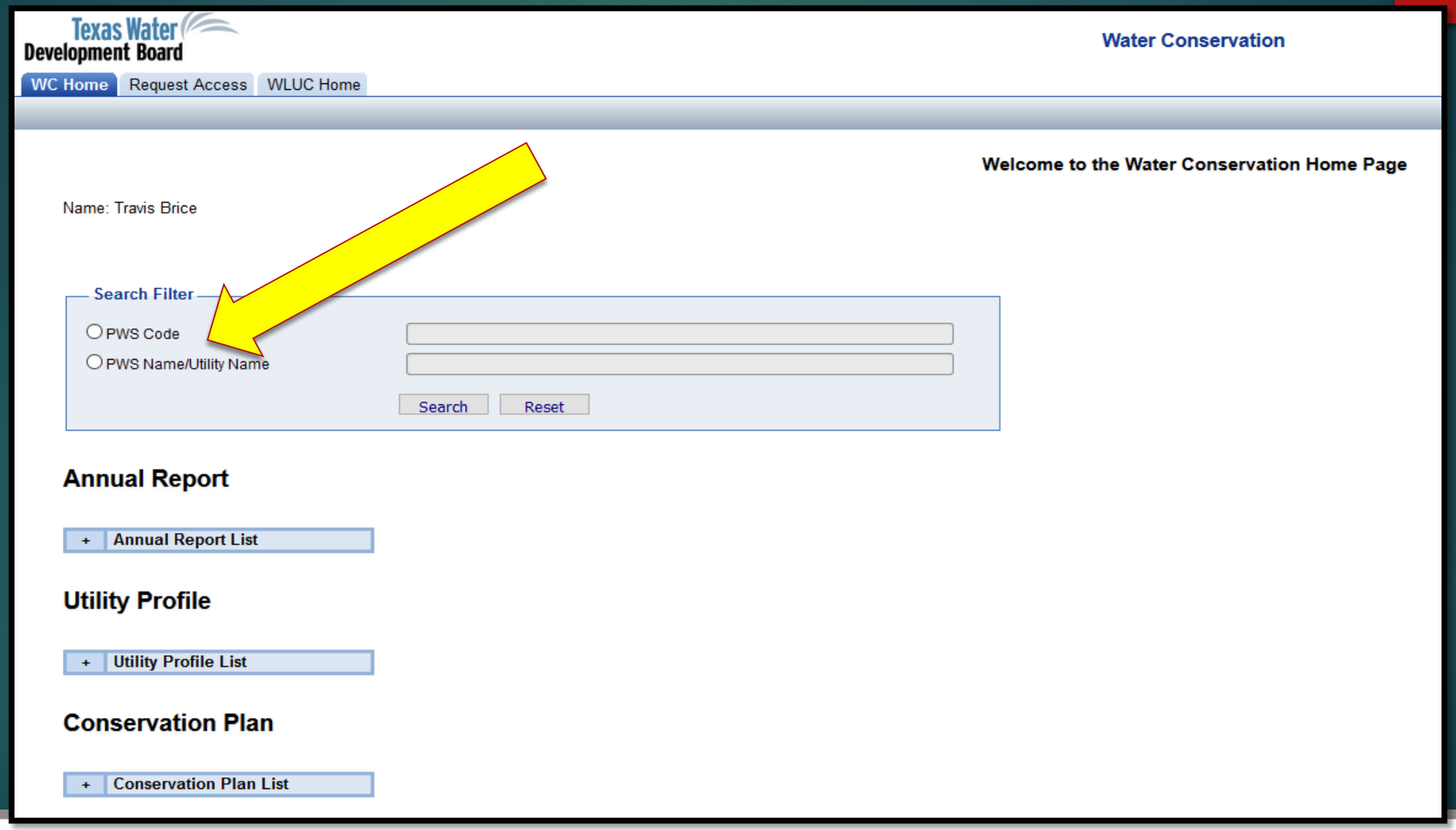
Welcome to the Water Loss, Use and Conservation Home Page



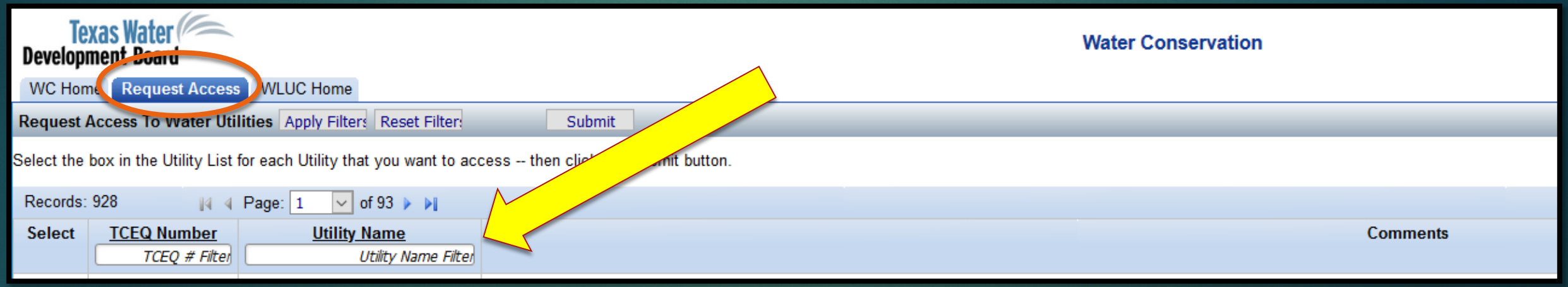
WLUC


Texas Water Development Board
Water Loss, Use and Conservation
Home Logout Agency Policies Contact Webmaster
WLUC
Water Use Survey
Water Loss Audit
Water Conservation
APM Home
Welcome to the Water Loss, Use and Conservation Home Page
Name: Daniel Rice
Search Filter
Year:
PWS Code
PWS Name
Survey Number
WUS System Name
Search
Reset
Water Use Survey
+ Water Use Survey List
Water Loss Audit
+ Water Loss Audit List
Water Conservation Annual Report
+ WC Annual Report List
Water Conservation Utility Profile
+ WC Utility Profile List
Water Conservation Plan
+ WC Plan List

Water Conservation Home Page



Water Conservation Home Page



Welcome to the Water Conservation Home Page

Name: Travis Brice

Based on previously submitted information, the following reports will need to be completed for your water system.

Annual Report

- Annual Report List

PWS Code	Utility Type	System Name	Year Due	Status	Submitted Date	
2270001	Retail Water Supplier	City of Austin Water & Wastewater	2019	Review Completed	04/29/19	Remove Remove Remove

Utility Profile

- Utility Profile List

PWS Code	Utility Type	System Name	Year Due	Status	Submitted Date	
2270001	Retail Water Supplier	City of Austin Water & Wastewater	2024	N/A		Remove Remove Remove

Conservation Plan

- Conservation Plan List

PWS Code	Utility Type	System Name	Year Due	Status	Submitted Date	
2270001	Retail Water Supplier	City of Austin Water & Wastewater	2024	N/A		Remove Remove Remove

Annual Reporting

Utility Name: City of Austin Water & Wastewater
PWS Code: 2270001

- Annual Report List

Edit	View	Status	Reporting Year	
Fill Out	View	Not on File	2010	
Fill Out	View	Review Completed	2011	
Fill Out	View	Review Completed	2012	
Fill Out	View	Review Completed	2013	
Fill Out	View	Review Completed	2014	
Fill Out	View	Review Completed	2015	
Fill Out	View	Review Completed	2016	
Fill Out	View	Review Completed	2017	
Fill Out	View	Review Completed	2018	

"Rolling" history of submitted annual reports creating a water usage and conservation history for your system.

Annual Reporting

PWS Code: N/A

- Annual Report List

Edit	View	Status	Reporting Year
	View	Not on File	2010
	View	Not on File	2011
	View	Review Completed	2012
	View	Review Completed	2013
	View	Review Completed	2014
	View	Review Completed	2015
	View	Review Completed	2016
	View	Review Completed	2017
	View	Saved	2018
	View	Not Started	2019
Fill Out	View	Review Completed	2020

- "Rolling" history of submitted annual reports.
- If some previous reporting years have been missed or left unsubmitted, that's ok.
- Reach out to us and TWDB staff can help back fill those reports.

Annual Report (Page 3)

	Total Gallons During the Reporting Period
1. Corrected Input Volume: The volume of treated water input to the distribution system from own production facilities. Same as line 13b of the Water Loss Audit for reporting periods >= 2015. Same as line 14 of the Water Loss Audit for reporting periods <= 2014.	47,999,230,963
2. Corrected Treated Purchased Water Volume: The amount of treated purchased wholesale water transferred into the utility's distribution system from other water suppliers system. Same as line 14b of the Water Loss Audit for reporting periods >= 2015. Same as line 15 of the Water Loss Audit for reporting periods <= 2014.	940,000
3. Corrected Treated Wholesale Water Sales Volume: The amount of treated wholesale water transferred out of the utility's distribution system, although it may be in the system for a brief time for conveyance reasons. Same as line 15b of the Water Loss Audit for reporting periods >= 2015. Same as line 16 of the Water Loss Audit for reporting periods <= 2014.	2,385,015,400
4. Total System Input Volume: This is the sum of the corrected input volume plus corrected treated purchased water volume minus corrected treated wholesale water sales volume. Same as line 16 of the Water Loss Audit for reporting periods >= 2015. Same as line 17 of the Water Loss Audit for reporting periods <= 2014. Produced + Imported - Exported = Total System Input Volume	45,615,155,563
5. Billed Metered: All retail water sold and metered. Same as line 17 of the Water Loss Audit for reporting periods >= 2015. Same as line 18 of the Water Loss Audit for reporting periods <= 2014.	38,442,953,800
6. Other Authorized Consumption: Water that is authorized for other uses such as back flushing, line flushing, storage tank cleaning, fire department use, municipal government offices or municipal golf courses/parks. This water may be metered or unmetered. Same as lines 18, 19, and 20 of the Water Loss Audit for reporting periods >= 2015. Same as lines 19, 20, and 21 of the Water Loss Audit for reporting periods <= 2014.	107,439,938
7. Total Authorized Consumption: All water that has been authorized for use. Same as Line 21 of the Water Loss Audit for reporting periods >= 2015. Same as line 22 of the Water Loss Audit for reporting periods <= 2014. Total Billed and Metered Retail Water + Other Authorized Consumption = Total Authorized Consumption	38,550,393,738
8. Total Apparent Losses: Water that has been consumed but not properly measured or billed (losses due to customer meter inaccuracy, systematic data handling discrepancy and/or unauthorized consumption such as theft). Same as line 27 of the Water Loss Audit for reporting periods >= 2015. Same as line 28 of the Water Loss Audit for reporting periods <= 2014.	938,656,919
9. Total Real Loss: Physical losses from the distribution system prior to reaching the customer destination (losses due to reported breaks and leaks, physical losses from the system or mains and/or storage overflow). Same as line 30 of the Water Loss Audit for reporting periods >= 2015. Same as line 31 of the Water Loss Audit for reporting periods <= 2014.	6,126,104,906
10. Total Water Loss: Apparent + Real = Total Water Loss	7,064,761,825

Annual Report – Retail Conservation Programs and Activities (Page 4)

1. What year did your entity adopt or revise their most recent Water Conservation Plan? 2014

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 and reuse strategies actively administered during this reporting period and estimate the savings incurred in implementing water conservation and reuse activities and programs. Leave fields blank if unknown. Please separate reuse volumes from gallons saved.

Methods and techniques for determining gallons saved are unique to each utility as they conduct internal cost analyses and long-term financial planning. Texas Best Management Practices can be found at TWDB's Water Conservation Best Management Practices webpage. The Alliance for Water Efficiency's Water Conservation Tracking Tool may offer guidance on determining and calculating savings for individual BMPs.

Best Management Practice	Check if implemented	Estimated Gallons Saved	Estimated Gallons Reused
Conservation Analysis and Planning			
Conservation Coordinator	☑	0	
Cost Effective Analysis	☑	0	
Water Survey for Single Family and Multi-family Customers	☐		
Financial			
Wholesale Agency Assistance Programs	☑	0	
Water Conservation Pricing	☑	0	
System Operations			
Metering New Connections and Retrofitting Existing Connections	☑	0	
System Water Audit and Loss Control	☑	0	

Annual Report – Retail Conservation Programs and Activities (Page 4)

Residential Clothes Washer Incentive Program	☐		
Water Wise Landscape Design and Conversion Programs	☑	172,572	
Showerhead, Aerator, and Toilet Flapper Retrofit	☑	11,194,638	
Residential Toilet Replacement Programs	☐		
ICI Incentive Programs	☑	8,444,835	
Conservation Technology & Resuse			
New Construction Graywater	☐		
Rainwater Harvesting and Condensate Reuse	☑	4,120,452	
Reuse for On-site Irrigation	☑		0
Reuse for Plant Washdown	☑		0
Reuse for Chlorination/Dechlorination	☑		0
Reuse for Industry	☑		753,826,217
Reuse for Agriculture	☐		
Regulatory and Enforcement			
Prohibition on Wasting Water	☑	5,347,478,100	
Retail			
Other	☑	188,340	1,873,907,300
Totals		5,379,519,437	3,303,906,117

Describe Other Best Management Practices from Section Above.

Included in "Other:
Estimated Gallons Saved: Pressure Regulating Valve Rebate
Estimated Gallons Reused: Toilet flushing, Plant Washdown, Chlorination/Dechlorination, and Onsite Irrigation.

Annual Report - Retail Conservation Programs and Activities

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

Gallons Saved/Conserved	Gallons Recycled/Reused	Total Volume of Water Saved[1]	Dollar Value of Water Saved[2]
5,379,519,437	3,303,906,117	8,683,425,554	3,351,802

[1]Estimated Gallons Saved + Estimated Gallons Recycled/Reused = Total Volume Saved

[2]Estimated this value by taking into account water savings, the cost of treatment or purchase of water, and deferred capital cost due to conservation.

5. Comments or Explanations Regarding Data Entered in Sections Above.

Files to support or explain this may be attached below.

Saving water can and will save you money,
…but it can be hard to quantify.

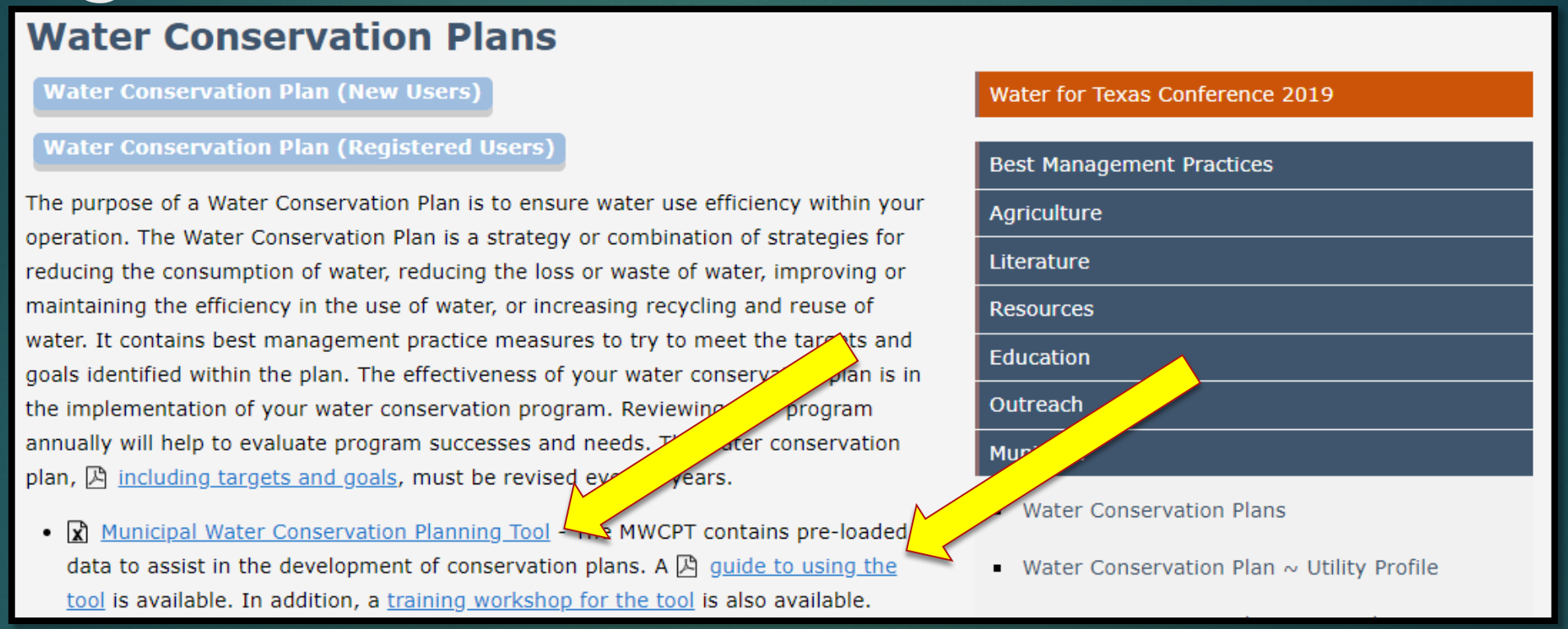
NEVER FEAR!

The Municipal Water Conservation Planning Tool is here!

- A method for calculating water savings via annual reporting was created.

- It provides an accounting framework for projecting future conservation program costs and water savings as well as estimating the water savings from previous implementation of conservation measures.

Municipal Water Conservation Planning Tool



Water Conservation Plans

Water Conservation Plan (New Users)

Water Conservation Plan (Registered Users)

The purpose of a Water Conservation Plan is to ensure water use efficiency within your operation. The Water Conservation Plan is a strategy or combination of strategies for reducing the consumption of water, reducing the loss or waste of water, improving or maintaining the efficiency in the use of water, or increasing recycling and reuse of water. It contains best management practice measures to try to meet the targets and goals identified within the plan. The effectiveness of your water conservation plan is in the implementation of your water conservation program. Reviewing your program annually will help to evaluate program successes and needs. The water conservation plan, including targets and goals, must be revised every 5 years.

- Municipal Water Conservation Planning Tool – The MWCPT contains pre-loaded data to assist in the development of conservation plans. A guide to using the tool is available. In addition, a training workshop for the tool is also available.

Water for Texas Conference 2019

- Best Management Practices
- Agriculture
- Literature
- Resources
- Education
- Outreach
- Mun...

- Water Conservation Plans
- Water Conservation Plan ~ Utility Profile

You can access the tool on the TWDB's website and the associated guide to have a VERY DETAILED explanation on its use.

Municipal Water Conservation Planning Tool

Completely downloadable and editable.

Please save a copy to your desktop and manipulate the scenarios as you see fit!

Here's the Breakdown…

1. Outdoor Conservation
2. Education
3. Washing machines
4. Landscape Design
5. Showers and Bathtubs
6. Residential Restrooms
7. Rainwater Reuse
8. Business (ICI)
9. All the above…

Municipal Water Conservation Planning Tool

BMP: Residential Toilet Replacement Program(s)

Predefined Measures*:	Saved GPD
SF: HE Toilet Rebate…	25.385
SF: Bathroom Retrofit…	28.888
MF: HE Toilet Rebate…	32.691
MF: Bathroom Retrofit…	42.600

***This data is only applicable to Region A (*16 Regions total*)**

Municipal Water Conservation Planning Tool

REGION A:

ICI Rebate, Retrofit, and Incentive Programs

High-Efficiency Sprinkler Nozzle Rebate **…88.235 GPD**

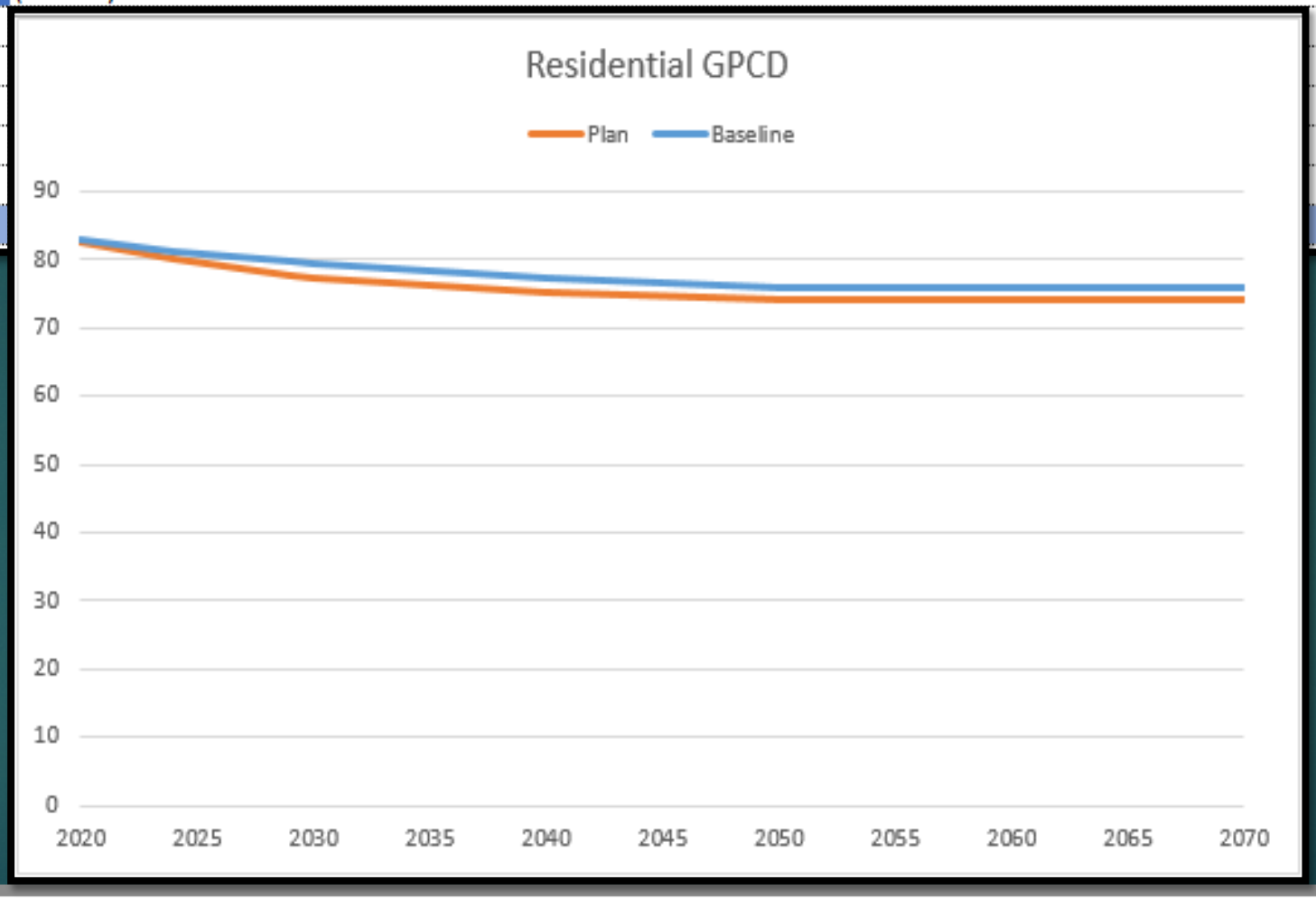
REGION I:

ICI Rebate, Retrofit, and Incentive Programs

High-Efficiency Sprinkler Nozzle Rebate **…46.272 GPD**

The region matters, because water use varies across the State.

Utility:	0								
Scenario:	Empty								Avg Annual
Volume Units:	kGal								Growth %
Projections	2020	2024	2029	2030	2040	2050	2060	2070	2020-70
Plan Active Savings	(in kGal)								
Single Family									
Multi Family									
ICI									
Other									
Water Loss									
Total Plan Savings									



Upon entering the conservation measures, a graph can be generated to show the general reduction (or not) in water use and the potential savings. (Baseline vs. WCP)

Annual Report – Retail Conservation Programs and Activities (Page 4)

Residential Clothes Washer Incentive Program	☐		
Water Wise Landscape Design and Conversion Programs	☑	172,572	
Showerhead, Aerator, and Toilet Flapper Retrofit	☑	11,194,638	
Residential Toilet Replacement Programs	☐		
ICI Incentive Programs	☑	8,444,835	
Conservation Technology & Resuse			
New Construction Graywater	☐		
Rainwater Harvesting and Condensate Reuse	☑	4,120,452	
Reuse for On-site Irrigation	☑		0
Reuse for Plant Washdown	☑		0
Reuse for Chlorination/Dechlorination	☑		0
Reuse for Industry	☑		753,826,217
Reuse for Agriculture	☐		
Regulatory and Enforcement			
Prohibition on Wasting Water	☑	5,347,478,100	
Retail			
Other	☑	188,340	1,873,907,300
Totals		5,379,519,437	3,303,906,117

Describe Other Best Management Practices from Section Above.

Included in "Other:
Estimated Gallons Saved: Pressure Regulating Valve Rebate
Estimated Gallons Reused: Toilet flushing, Plant Washdown, Chlorination/Dechlorination, and Onsite Irrigation.

Annual Report – Retail Conservation Programs and Activities

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

Gallons Saved/Conserved	Gallons Recycled/Reused	Total Volume of Water Saved[1]	Dollar Value of Water Saved[2]
5,379,519,437	3,303,906,117	8,683,425,554	3,351,802

[1]Estimated Gallons Saved + Estimated Gallons Recycled/Reused = Total Volume Saved

[2]Estimated this value by taking into account water savings, the cost of treatment or purchase of water, and deferred capital cost due to conservation.

5. Comments or Explanations Regarding Data Entered in Sections Above.

Files to support or explain this may be attached below.

Now with these new estimates from the tool we can better report our water and MONEY savings.

Search Filter

PWS Code 2270001

PWS Name/Utility Name

Search Reset

Annual Report

- Annual Report List

PWS Code	Utility Type	System Name	Year Due	Status	Submitted Date
2270001	Retail Water Supplier	City of Austin Water & Wastewater	2019	Review Completed	04/29/19

Utility Profile

- Utility Profile List

PWS Code	Utility Type	System Name	Year Due	Status	Submitted Date
2270001	Retail Water Supplier	City of Austin Water & Wastewater	2024	N/A	

Conservation Plan

- Conservation Plan List

PWS Code	Utility Type	System Name	Year Due	Status	Submitted Date
2270001	Retail Water Supplier	City of Austin Water & Wastewater	2024	N/A	

Utility Profile

- The Utility Profile serves as the first component in developing a Water Conservation Plan.

- The purpose of the Utility Profile is to assist you with water conservation plan development and to ensure that important information and data about your utility system be considered when preparing your water conservation plan and the associated target and goals.

Utility Profile

- Completion of the utility profile is required and should be submitted with the water conservation plan.
- In fact, the utility profile should be considered a component of the plan, NOT a separate form or report.
- It is the overarching data element of the water conservation plan.

Utility Profile

By using the 5-year rolling history of your system, you can set appropriate goals.

Provide system input data for the previous five years.
Total System Input = Self supplied + Imported - Exported

Year	Water Produced in Gallons	Purchased/Imported Water in Gallons	Exported Water in Gallons	Total System Input	Total GPCD
2018	47,999,230,963	940,000	2,385,015,400	45,615,155,563	124
2017	48,366,392,060	689,000	2,783,459,800	45,583,621,260	128
2016	45,653,599,594	1,494,000	2,527,643,397	43,127,450,197	123
2015	44,743,637,572	8,800,000	2,538,933,179	42,213,504,393	124
2014	29,148,336,469	15,443,172,848	2,579,530,487	42,011,978,830	128
Historic Average	43,182,239,332	3,091,019,170	2,562,916,453	43,710,342,049	125

Utility Profile

Also, the data flows through the reports and self calculates within, so CONSISTENCY and ACCURACY are important.

Water Use Category	Total Residential GPCD
2018	65
2017	66
2016	66
2015	66
2014	70
Historic Average	67

Water Conservation Plan

Annual Report

- Annual Report List

PWS Code	Utility Type	System Name	Year Due	Status	Submitted Date
2270001	Retail Water Supplier	City of Austin Water & Wastewater	2019	Review Completed	04/29/19

Utility Profile

- Utility Profile List

PWS Code	Utility Type	System Name	Year Due	Status	Submitted Date
2270001	Retail Water Supplier	City of Austin Water & Wastewater	2024	N/A	

Conservation Plan

- Conservation Plan List

PWS Code	Utility Type	System Name	Year Due	Status	Submitted Date
2270001	Retail Water Supplier	City of Austin Water & Wastewater	2024	N/A	

Water Conservation Plan

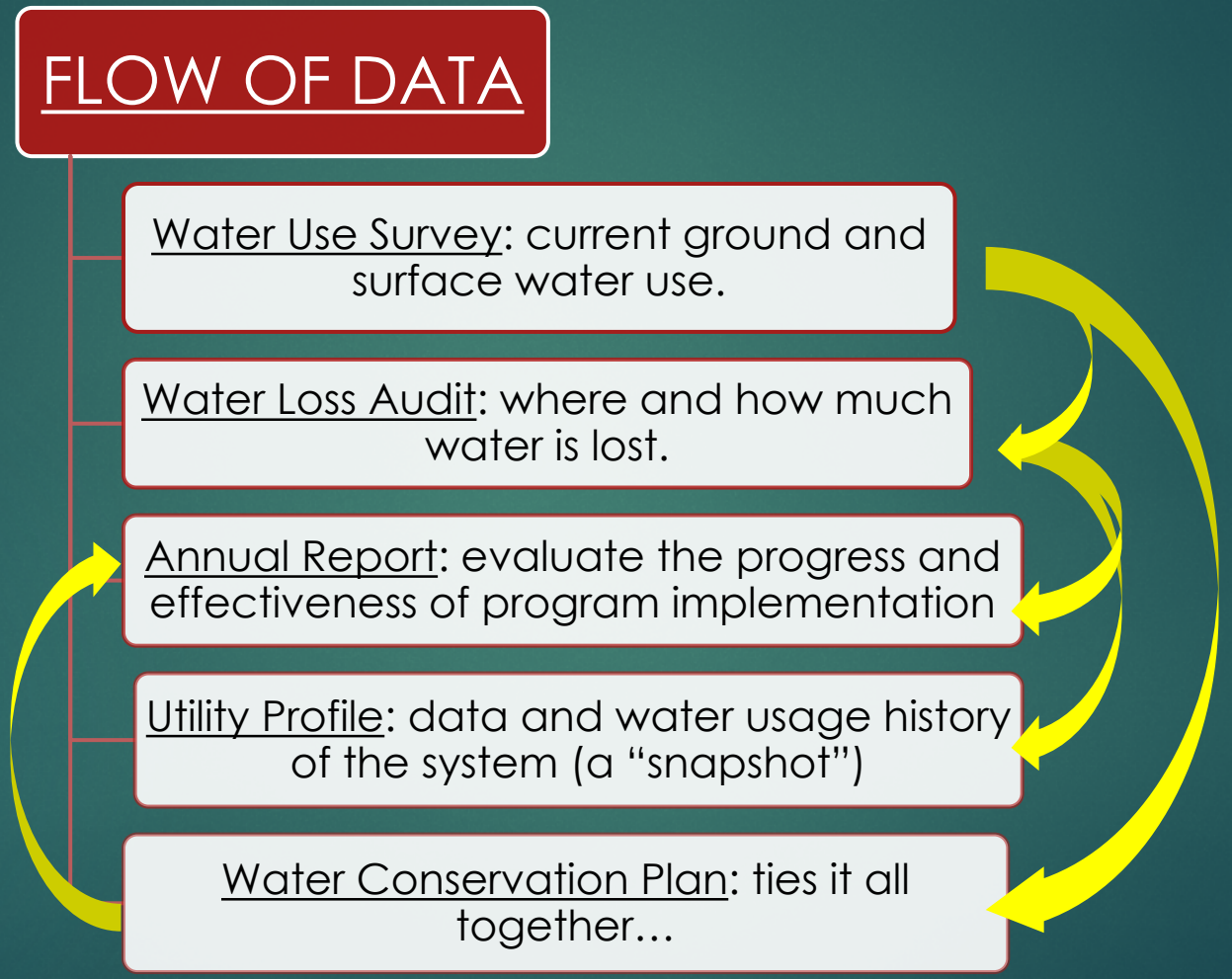
- By using the information and data discussed in the previous section from the utility profile, a system can better adjust and create more realistic goals.

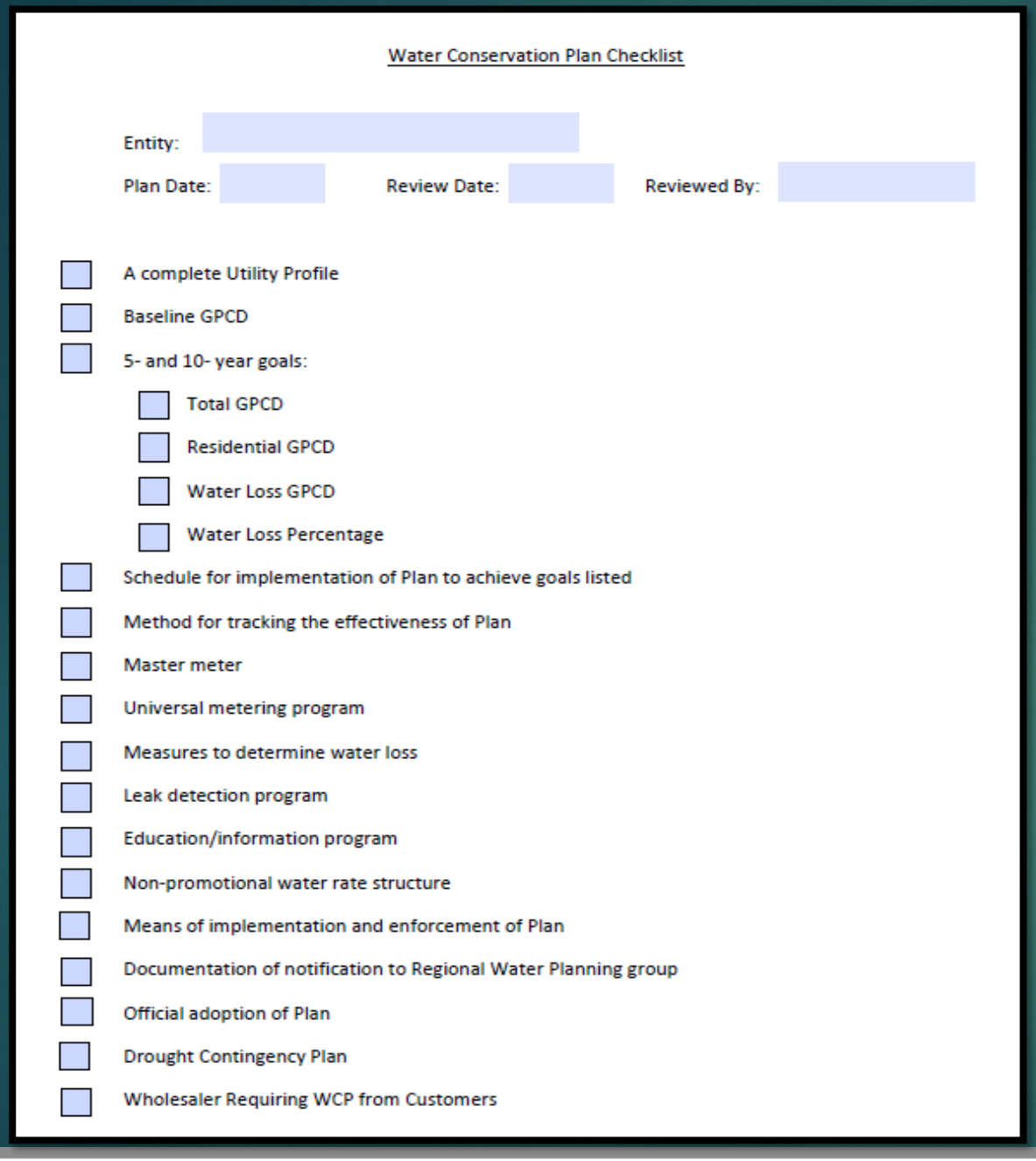
Historic Average	43,182,239,332	3,091,019,170	2,562,916,453	43,710,342,049	125

- 5-year historic average is **125 GPCD**… "I'll set my 5-year goal as **123**, and 10-year goal as **120**…"

- Is this goal appropriate?

Full circle!


FLOW OF DATA
Water Use Survey: current ground and surface water use.
Water Loss Audit: where and how much water is lost.
Annual Report: evaluate the progress and effectiveness of program implementation
Utility Profile: data and water usage history of the system (a "snapshot")
Water Conservation Plan: ties it all together…



Water Conservation Plan Checklist

Entity:

Plan Date: Review Date: Reviewed By:

- ☐ A complete Utility Profile
- ☐ Baseline GPCD
- ☐ 5- and 10- year goals:
  - ☐ Total GPCD
  - ☐ Residential GPCD
  - ☐ Water Loss GPCD
  - ☐ Water Loss Percentage
- ☐ Schedule for implementation of Plan to achieve goals listed
- ☐ Method for tracking the effectiveness of Plan
- ☐ Master meter
- ☐ Universal metering program
- ☐ Measures to determine water loss
- ☐ Leak detection program
- ☐ Education/information program
- ☐ Non-promotional water rate structure
- ☐ Means of implementation and enforcement of Plan
- ☐ Documentation of notification to Regional Water Planning group
- ☐ Official adoption of Plan
- ☐ Drought Contingency Plan
- ☐ Wholesaler Requiring WCP from Customers

- These are the bare minimum requirements for a WCP.
- This checklist can be used as the framework for the creation of a new WCP.
- However, the details are more important.
- Make the plan your own!

Water Conservation Plan

- If you have identified that you must submit a Water Conservation Plan (WCP) then please use all available resources and references to create the best plan possible.

- **This plan is for the benefit of your system. It is a "living" document, NOT a report.**

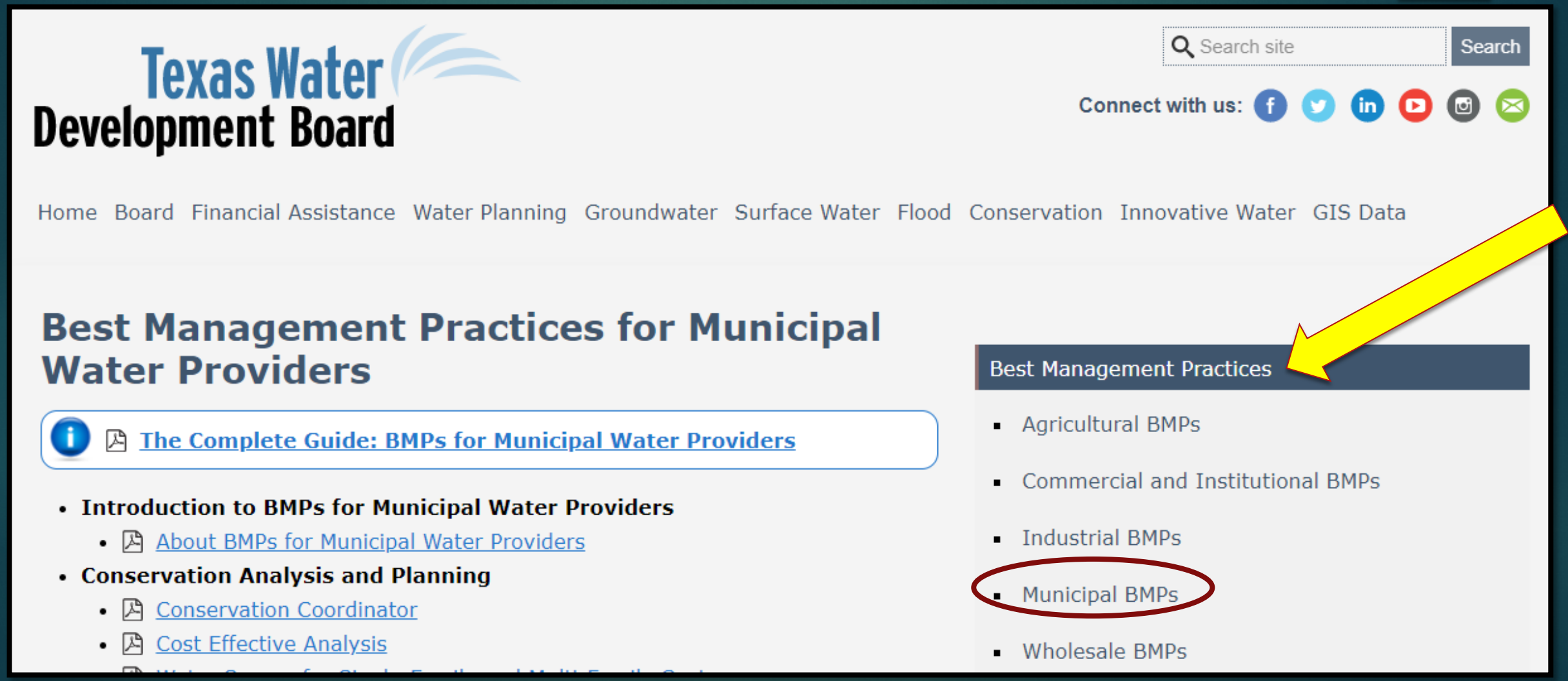
Water Conservation

- BMPs are a great starting place!

For Example:

- Utility Water Audit and Water Loss (Updated 2020)
  - Ensuring the validity of the water loss audit data helps the utility identify cost-effective steps in controlling water loss. They can use their data to guide their water loss control mitigation programs.

Best Management Practices Page



Water Conservation Plan

Helpful tips and information…

1. Water Conservation Plan Checklist
2. WCP Goals Table Form
3. Water Conservation Plan FAQs
4. Refer to your previous plan (2009, 2014, 2019…)
5. Call the TWDB for help

Goals Table Form

Water Conservation Plan Goals Table
TWDB Form No.1964

Title 31 TAC Chapter 363, Rule §363.15 (B)

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

Name: _____

Water Conservation Plan Year: _____

	Historic 5-yr Average	Baseline*	5-yr Goal for year _____	10-yr Goal for year _____
Total (GPCD)[1]				
Residential (GPCD)[2]				
Water Loss (GPCD)[3]				
Water Loss (Percentage)[4]	%	%	%	%

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

GPCD - Gallons Per Capita Per Day

Water Conservation Plan

Most common errors…

1. Goals are NOT represented in Gallons per Capita per Day or **GPCD.**
   - (TOTAL, RESIDENTIAL, and WATER LOSS)

2. Adoption by resolution is NOT included or is unsigned.

3. Using a template WCP that does NOT address the specific(s) needs/problems of the system.

4. Please proof-read your submissions; check for ordinance numbers, signatures, items that are listed in appendices are listed, etc.

Water Conservation Historical Resources

Water Conservation 5-Year and 10-Year GPCD Targets and Goals

Reports

AR GPCD

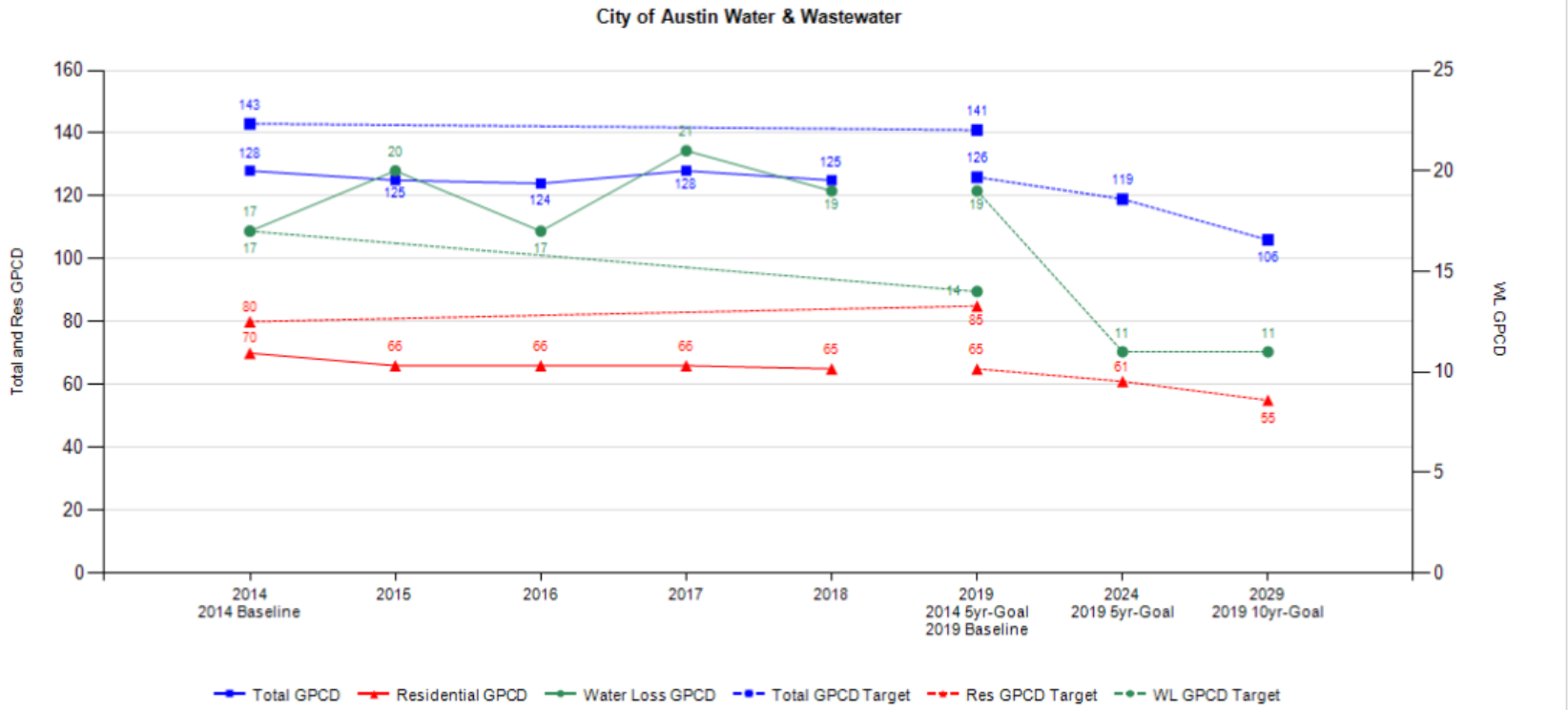
Connections Data

Water Use Data

Targets & Goals

Utility Name:

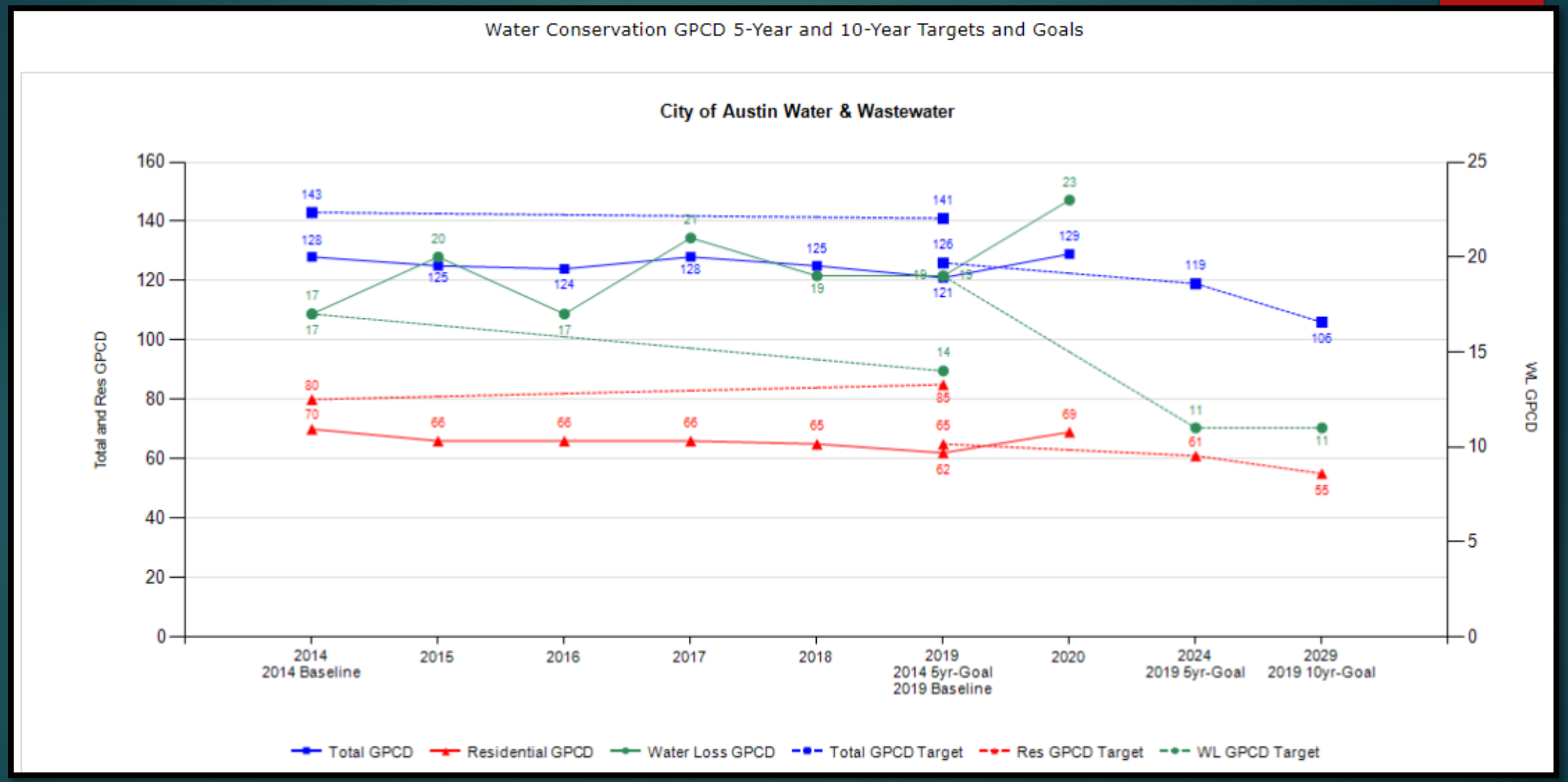
Get Graph Report



Please note that there may be gaps in the graphs displaying the GPCD Targets and/or actual data reported in the Annual Reports. This may signify that the

data was missing due to:

Water Conservation Historical Resources



Conclusion

Contact

- Phone: 512-463-7988
- wcpteam@twdb.texas.gov

POLL

TWDB Financial Assistance Programs

Drinking Water State Revolving Fund (DWSRF)

Clean Water State Revolving Fund (CWSRF)

Texas Water Development Fund (Dfund)

State Water Implementation Fund for Texas (SWIFT)

Financial Assistance Programs

Infrastructure Investment & Jobs Act –

A supplement to the existing CWSRF & DWSRF programs.

Economically Distressed Areas Program

Drinking Water State Revolving Fund (DWSRF)

- Offers below-market fixed interest rates
- Principal forgiveness subsidies for qualifying projects:
  - Disadvantaged
  - Small/Rural Disadvantaged
  - Green
  - Very Small Systems
  - Emergency Preparedness
  - Urgent Need
- Up to 30-year repayment period

Clean Water State Revolving Fund (CWSRF)

- Offers below-market fixed interest rates
- Principal forgiveness subsidies for qualifying projects:
  - Disadvantaged
  - Disadvantaged Small/Rural
  - Emergency Preparedness
  - Green
  - Urgent
- Up to 30-year repayment period

Clean Water State Revolving Fund (CWSRF)

- A wastewater financial assistance program funding water meter replacements?

YES!!! It is eligible as a conservation measure.

- Green Project Reserve Funding

http://www.twdb.texas.gov/financial/programs/green/index.asp

- At least 30% of a project needs to be “green” and of that 30% up to 15% of the costs are eligible for principal forgiveness

- Water meters are 100% green!

Texas Water Development Fund (Dfund)

- TWDB's original financial assistance program
- Flexible, available year-round
- Low rates based on TWDB's cost of funds
- AAA Bond Rating
- Can fund both water/wastewater projects in a single commitment
- Repayment terms up to 40 years

State Water Implementation Fund for Texas (SWIFT)*

- Offers low-interest loans reflecting TWDB's low cost of funds
  - -Rural/Agricultural additional interest rate subsidy
- Up to 30-year repayment
- Flexible financing structures
  - -Low-interest loans
  - -Deferred Loans
  - -Board Participation
- No maximum funding limit

* The SWIFT program includes two funds, the State Water Implementation Fund for Texas (SWIFT) and the State Water Implementation Revenue Fund for Texas (SWIRFT). Bonds for the program are issued through SWIRFT.

Infrastructure Investment & Jobs Act

- Signed into law November 15, 2021
- Supplemental State Revolving Funds
- Offers below market fixed Interest Rates
- Principal forgiveness subsidies
- Infrastructure priorities
  - DWSRF
  - DWSRF Lead Service Line Replacement
  - DWSRF Emerging Contaminants
  - CWSRF
  - CWSRF Emerging Contaminants
  - Water Infrastructure Improvements for the Nation (WIIN) Grants to address emerging contaminants

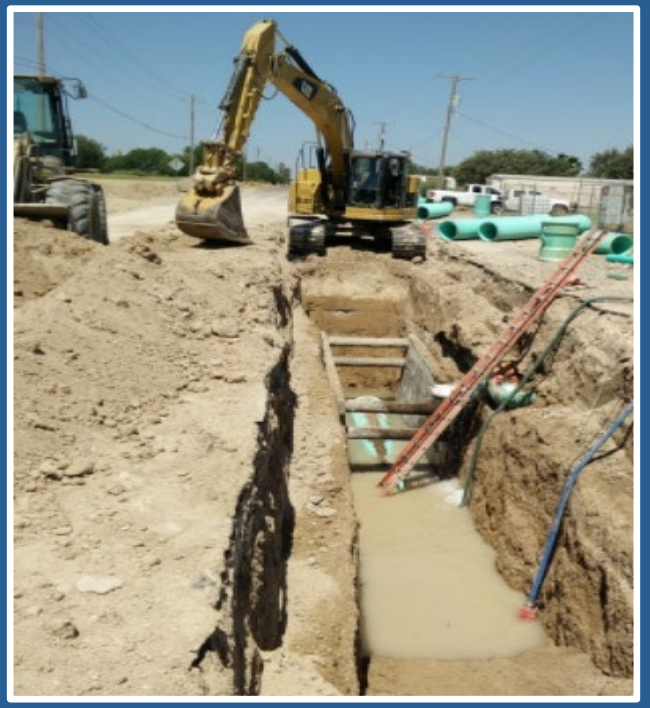
Economically Distressed Areas Program

- Financial assistance provided in form of combination grant and loan.
  - Portion not paid by a grant must be provided as an EDAP loan.

- Maximum of 70% grant per project
  - Grant percentage may not exceed 50% unless a public health nuisance exists, as determined by DSHS or TWDB (see EDAP IUP)
  - Grant also subject to availability of funds (see next slide)

- Long-term loans with low-interest rates based on TWDB's cost of fund

- Prioritization process will determine funding for eligible projects, including criteria for those that address public health and safety concerns and those in areas under enforcement action.



Eligible Applicants

	DWSRF	CWSRF	DFund	SWIFT	EDAP
Political Subdivisions (Cities, Counties, Districts, etc.)	💧	💧	💧	💧	💧
Non-profit WSC's	💧	💧	💧	💧	💧
Investor-owned Utilities	💧	💧			
Private Entities		💧			

Nonpoint Source Pollution Control Projects Only

Eligible Projects

	DWSRF	CWSRF	DFund	SWIFT	EDAP
Water Supply: Current Need	💧		💧	💧	💧
Water Supply: Future Need	💧		💧	💧	
Water Treatment	💧		💧	💧	💧
Water Transmission & Distribution	💧		💧	💧	💧
Potable Reuse		💧	💧	💧	
Wastewater Collection		💧	💧		💧
Wastewater Treatment		💧	💧		💧
Conservation (Meters)	💧	💧	💧	💧	

Program Requirements

Requirement*	DWSRF	CWSRF	DFUND	SWIFT	EDAP
Davis Bacon Wage	💧	💧			
Disadvantaged Business Enterprise (DBE – Equivalency projects)	💧	💧			
American Iron & Steel	💧	💧			
US Iron & Steel	💧	💧	💧	💧	💧
Loan Origination Fee	💧	💧			
Consistent with State Water Plan (SWP)	💧	💧	💧	💧	💧
Recommended Water Management Strategy with capitalized cost in the SWP				💧	
Water Conservation & Drought Contingency Plan for projects > $500K	💧	💧	💧	💧	💧
Review of water loss threshold limits	💧	💧	💧	💧	💧
Project in current DWSRF/CWSRF IUP	💧	💧			

Note: there may be more program requirements than listed; please refer to website for further details.

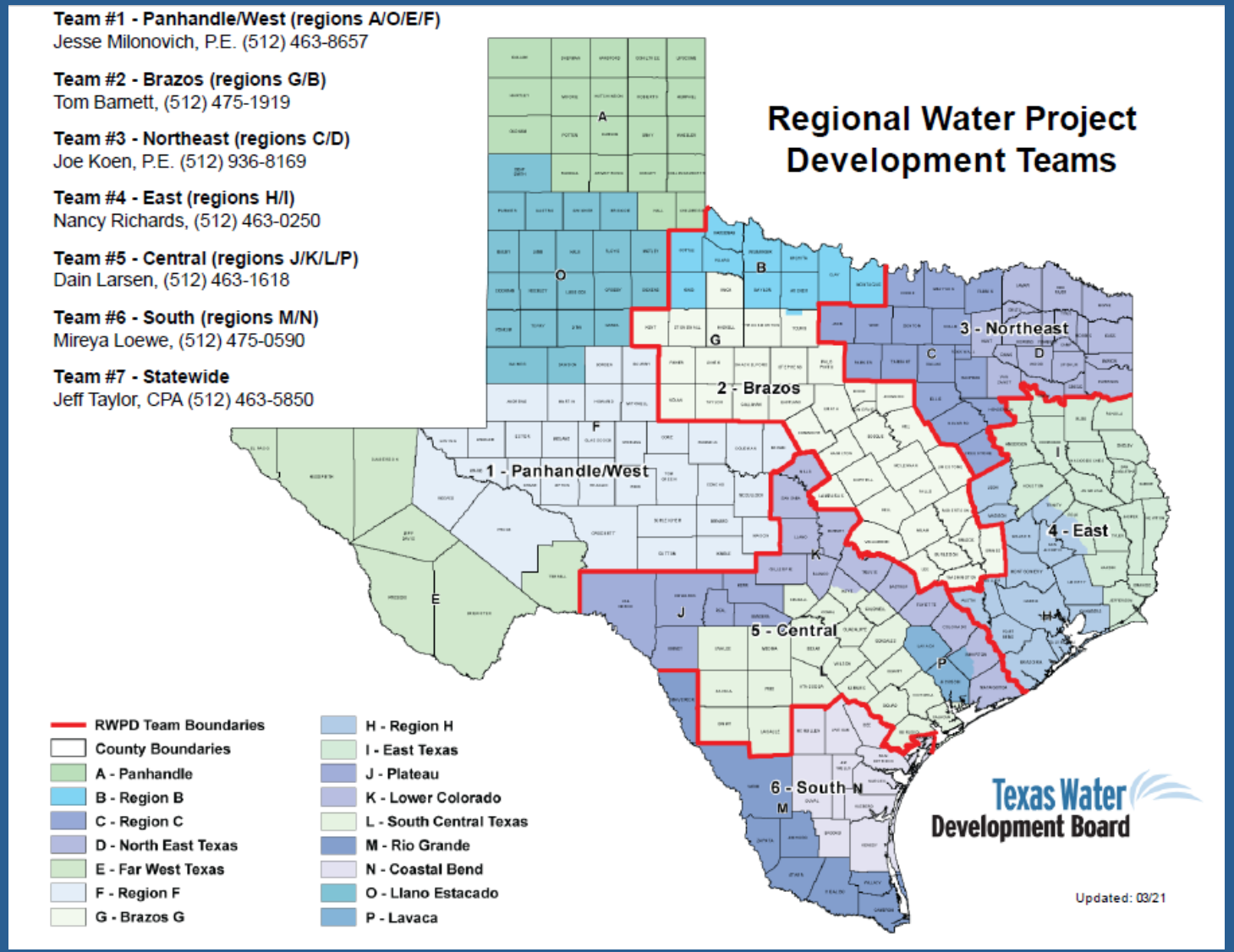
Outreach
Scott Galaway
737-226-3381

Enriqueta “Keta” Caballero
512-435-9071

SRF Coordinator
Alyssa Azari
512-463-5801

DWSRF Coordinator
Heather O’Keefe
512- 475-1835

State Programs
Coordinator
William Alfaro
512-463-4741



financial_assistance@twdb.texas.gov

Financial Assistance Weblinks

Financial Assistance Page:

https://www.twdb.texas.gov/financial/index.asp

Clean Water State Revolving Fund, Drinking Water State Revolving, Texas Water Development Fund:

https://www.twdb.texas.gov/financial/programs/CWSRF/index.asp
https://www.twdb.texas.gov/financial/programs/DWSRF/index.asp
https://www.twdb.texas.gov/financial/programs/TWDF/index.asp

State Water Implementation Fund for Texas:

https://www.twdb.texas.gov/financial/programs/SWIFT/index.asp

For specific questions on SWIFT:
SWIFT@twdb.texas.gov

Financial Assistance Webinars

State Revolving Funds Webinar:

https://www.twdb.texas.gov/financial/programs/DWSRF/index.asp#SRF-2021-02-05

SRF Programs Overview pdf:

https://www.twdb.texas.gov/financial/programs/doc/SRF_OVERVIEW_2022.pdf

SWIFT webinar:

https://www.twdb.texas.gov/financial/programs/SWIFT/index.asp#swift-webinar

FINANCIAL, MANAGERIAL, AND TECHNICAL (FMT) ASSISTANCE PROGRAM

APRIL 12, 2022

TWDB WATER LOSS, USE, AND CONSERVATION WORKSHOP

Texas Commission on Environmental Quality

OUR PROCESS

- When assistance is requested, a referral is sent to TRWA
- TRWA schedules a visit with you; then
- TRWA delivers the assistance (USUALLY this is on-site, but can also offer some assistance virtually)
- If more help is needed, follow-up assistance may be requested

POPULAR FMT ASSISTANCE TASKS

- Water Loss And Conservation
  - Water Loss Tracking
  - Water Loss Audit
  - Water Conservation Plan (WCP)
  - Drought Contingency Plan
  - Leak Detection
- Monitoring Plan
- Nitrification Action Plan
- Capital Improvement Plans And Asset Management
- Funding
  - Funding Information And Sources
  - Funding Application Assistance
- Emergency Planning
  - Emergency Preparedness Plan (EPP)

LEAK DETECTION ASSIGNMENT

HOW TO REQUEST ASSISTANCE

EMAIL: FMT@TCEQ.TEXAS.GOV

PHONE: (512) 239-4691

WEBSITE:

www.tceq.texas.gov/drinkingwater/fmt

Water Loss, Use, and Conservation Workshop

Full Panel

QUESTION and ANSWER

Texas Water Development Board