RESOLUTION 2023-004

A RESOLUTION OF THE BOARD OF DIRECTORS OF THE EAST CEDAR CREEK FRESH WATER SUPPLY DISTRICT ADOPTING A WATER CONSERVATON PLAN.

WHEREAS, on May 23, 2006, the Board of Directors approved resolution 2006-004 approving the Conservation / Drought contingency plan and adopted as the official policy of the East Cedar Creek FWSD; and

WHEREAS, the Board of Directors has reviewed the July 2023 Conservation Plan and Utility Profile, hereto respectively as Exhibit "A" Brookshire Conservation Plan and Exhibit "B" McKay Conservation Plan, and incorporated herein by reference, and finds it is in the best interest of the District to adopt the same.

NOW, THEREFORE BE IT RESOLVED by the Board of Directors of East Cedar Creek Fresh Water Supply District;

Section 1. The Board of Directors hereby approves and adopts the July 2023 Conservation Plan and Utility Profile, hereto respectively as Exhibit "A" Brookshire Conservation Plan and Exhibit "B" McKay Conservation Plan made part hereto for all purposes be, and the same is hereby, adopted as the official policy of the East Cedar Creek FWSD. That the Conservation Plan approved by resolution 2006-004, amended by resolution 2009-005 and by resolution 2014-001 and approved by resolution 2018-003 hereto as Exhibit "A" Brookshire Conservation Plan and Exhibit "B" McKay Conservation Plan.

Section 2. That the General Manager is hereby directed to be the District's Conservation Coordinator to implement the Conservation Plan.

Section 3. That this resolution shall take effect immediately upon passage.

PASSED AND APPROVED THIS 19th day of July 2023.

William D. Pohlen

Vice-President, Board of Directors
East Cedar Creek Fresh Water Supply District

Attest:

Ted H. Bayless

Treasurer, Board of Directors
East Cedar Creek Fresh Water Supply District

East Cedar Creek Fresh Water Supply District (ECCFWSD)

Brookshire PWS: 1070167
ECCFWSD CCN: 11682

Brookshire Conservation Plan

Approved by Resolution 2023-004
Date: 07/19/2023

ECCFWSD: Brookshire Water System Conservation Plan

Table of Content

ECCFWSD BROOKSHIRE: CONSERVATION PLAN
PWS: 1070167 / CCN: 11682

Section I: Introduction & Utility Profile

Creation

East Cedar Creek Fresh Water Supply District (ECCFWSD) is a local governmental entity created by the 65th Texas Legislature on June 25, 1977. The District's CCN covers approximately 20 square miles in northwest Henderson County, adjacent to the north and east banks of Cedar Creek Reservoir.

Brookshire Water Source

Water supply source for the District's water treatment plant production of potable water comes from the Cedar Creek Lake managed by Tarrant Regional Water District (TRWD). The TRWD raw water allocation is based upon a 5-year annual running average not to exceed 6.23 cubic feet per second (2,796-gpm). The District also has a contract with the City of Trinidad to purchase 750-acre feet annually. The Brookshire raw water diversion report of 2022-23 was 414.9-MG. Brookshire Water Treatment Plant is capable of treating 4,000,000 gallons per day.

Brookshire Drinking Water System

The Distribution system consists of two (2) elevated water towers, a 500,000 gallon and a 300,000 gallon, and two (2) 500,000-gallon ground storage tanks. The number of customer's accounts change monthly, in 2023 (June Counts) fiscal year the average customer base for water was 4,916 and 4,511 (water and sewer customers as of the June 2023 Board packet) sewer customers. Much of the District's service area consists of municipal and rural residential subdivisions that were developed in the mid to late 1960s and early 1970s following construction of the reservoir. ECCFWSD's CCN is limited to growth on three boundary borders; City of Mabank Water Supply, City of Eustace Water Supply, Payne Springs WSC and West Cedar Creek MUD.

Henderson County and the District's average customer base growth rate for the past several years (2020 – 2023) is an average of 1.80%. The expected growth rate for the next 5-years (2023 – 2027) is anticipated to be 2.25% and the growth for the next 5 years (2028 - 2032) after that are projected to be at 1.65%. The District has seen an increase in growth and development since Covid (2020) and more customers working from home and/or staying in the area.

In 2015, the District secured a bond for $3.2 million to increase approximately 10-miles of pipe to larger diameter pipe to provide capacity for growth. In 2018, the District secured a bond for $4.5 million to build a 300,000 EST and upgrade the raw water pump station to help provide capacity for growth. In 2022, the District secured a bond for $9.3 million to develop a Master Plan for the Northside. The Master Plan will provide the District a path to plan for its facilities and future projects.

Wastewater System

East Cedar Creek Fresh Water Supply District (ECCFWSD) owns, operates, and provides sewer service to the Brookshire water customers. The North Wastewater Treatment Plant (NWWTP) was built in 1979. The facility has had several renovations including a new tertiary clarifier from bond funds to reduce phosphorous level to below 1.0 mg/l as required by the revised TCEQ NPDES Permit issued in 2012. Through additional bond funding the district purchased a Belt Press to dewater sludge for more

economic sludge removal to be hauled to a local landfill. Funds are set aside annually to ensure funds are available for other major equipment refurbishing. The permitted capacity for the facility is .750 MGD with a surge capacity of 1.3 MGD for a period not to exceed two hours and currently is at 70% to 75% capacity of the NWWTP TCEQ Permit. The District's NWWTP's effluent discharge enters into the Prairie Creek Cove of Cedar Creek Lake. The effluent water meets or is below the NPDES Permit's water quality parameters.

The North WWTP has undergone several upgrades over the years. In 2022, the District secured a bond for $9.3 million. One of the projects is to develop a Master Plan for the Northside. This plan will provide the District with a plan to follow for the next 10 to 20 years. The plan also provides various upgrades/updates needed throughout the collection system and/or the treatment plant as growth and changes continue.

Section II: Conservation Goals and Objectives

Public Education

ECCFWSD advocates a positive public education program. The District's Website www.eastcedarcreek.net provides the reader with tips on conserving water and solving common household leaks under the Public Info tab. During National Water Week in May the District promotes selected kid and adult pamphlets which support the water Cycle and Conservation. Customer billing concerns are addressed in a manner to encourage conservation.

Through best practice management, rate structures and education it is ECCFWSDs goal to at least maintain TCEQ's 0.6 gpm per connection but we are working to reinstate a variance of 0.45 gpm per connection which would represent a 25% overall system reduction of water usage.

During water week the district holds a customer education awareness week and presents to grade school students the importance of conservation and protecting our water resources. On ECCFWSD's web site educational and promotional material are available for the customer education such as district design and capacity information, water rates design for conservation and links to federal and state educational web sites for additional research and reading.

Water Usage Accountability

ECCFWSD has implemented a customer meter change out and meter accuracy program.
All customers are metered including ECCFWSD facilities. Meter change-out is determine by three criteria's; 1) Acceptable standards of the meter industry of 20-yrs of age or 1-million gallons, 2) Investigate meter reader records for no usage and or irregular registering of an active account, 3) Customer request for a meter accuracy test, if inaccurate more that 2% meter is changed. Employees maintain monthly records for water flushed, treatment process usage and other such usages which warrant validity.

Water Loss

ECCFWSD is striving to reduce the amount of water loss by conducting water leak surveys and promoting to our customers the value of reporting suspicious water ponding and small leaks. Infrastructure repairs are targeted toward long-term infrastructure improvements instead of fast repairs. The master water meters at the water treatment plant are tested for accuracy annually.

The 5-year averaged Water Loss from 2019 to 2023 is recorded as 23%. ECCFWSD employees strive to expedite repairs in the distribution system to prevent the waste of treated water. The district takes into account all unbillable water for district use at plants, office, line-flushing and fire dept. usage. Water Main Repair Crews use water leak calculator for determining water loss from water main repairs.

The district sums the billed metered, billed un-metered and authorized consumption usage plus the accounted for water loss of water leaks and subtracts that from the distribution master meter. This process quantifies all accounted for water and presents a total revenue loss. Each category is inserted as a line item and can be independently valued as retail or production monetary loss. The remainder of water is considered unaccounted for water loss. This may be due to unidentified seeping leaks, rubber gasket/joint leaks and aged district / customer meters.

In the 2018 Bonds, the District included a project to start replacing manual read meters with AMR meters. In 2023, 1,500 manual read meters were replaced with AMR meters in several subdivisions. In 2022, another bond project was secured to replace 2,500 manual read meters with AMR meters in the Districts southern section. From there, the District will look to replace 1,000 manual read meters with AMR meters per year until all meters are AMR meters. The AMR meters are 96% accurate at 1/8 gpm flow and are 100% accurate at ¼ gpm flow. This should help reduce water loss and help customers conserve water.

Evaluation process

All the above programs are monitored monthly and recorded electronically on the computer for evaluation and measuring the effectiveness of each program. Executive summary reports are generated for projections and as a measuring tool for staff and management.

Water Conservation Targets and Goals

ECCFWSD is dedicated toward water conservation and promoting the protection of water quality within the Cedar Creek Watershed area. The District has been a stakeholder to the Cedar Creek Water Protection Plan since the plan's inception. The District will continue the 5-year goal for promoting water conservation and to decrease the District's un-accountable water percentage through best management practices mentioned above, while maintaining an active role as stewards and promoters of the adopted watershed plan. The District provides water conservation hand-out material in the office lobby and promotes conservation tips on the District's website.

5-year Target and Goals

The district's 5-year usage history reflects the average Meter per Day is 151 gallons/day and the 3 per family GPCD is50. ECCFWSD goal is to maintain the current 5-yr water usage of 151 gallons per day per meter. Using the District's meter to population calculation of 3 family members per household this equates to 50 gallons per capita per day. These calculated figures will vary from year to year due to changes caused by the El-Nino and El-Nina events. However, in the past 5-years, Texas has experienced some of both effects and within that 5-year period customers have reduced usage to below the past conservation plan's goal of 157 gallons per day per meter.

10-year Targets and Goals
ECCFWSD's goal is to reduce our maximum water usage from 151 to 136 gallons per day per meter. Using the District's meter to population calculation of 3 family members per household this equates to 45 gallons per capita per day. ECCFWSD also plans to maintain an unaccountable water loss goal of 10%. Addendum: ECCFWSD Annual Customer Unit Report.

Brookshire Record Keeping Process The district maintains detailed spreadsheets that record each fiscal year's distribution water pumped and customer meter usage. The addendums accompanying the Conservation Plan date from 2010 – 2011 to the current fiscal year end of 2023-2024. The district feels that the past 5 years of history are the most relevant for projecting current and future projections.

Section III: Declaration of Policy, Purpose, and Intent
In order to conserve the available water supply and protect the integrity of water supply facilities, with particular regard for domestic water use, sanitation, assisting fire protection, protect and preserve public health, welfare, and safety and minimize the adverse impacts of water supply shortage or other water supply emergency conditions, East Cedar Creek Fresh Water Supply District Board of Directors hereby adopts by resolution this 2023-24 Conservation Plan for the ECCFWSD Brookshire Water System.

Addendum Section

Addendum - 1

Total Usage - Brookshire (North Side) Water System TCEQ PWS: 1070167

Budget Year	Gallons Pumped-MG	Gallons Sold-MG	Water Loss	Customer Units	Gal Pmp Cap/Day	Gal Sold Cap/Day	Unit + or -	Unit % + or -	Population Meter # x 3	Gal-Pmp. GPCD Pop. 3	Gal-Sold GPCD Pop. 3
10-11	261	212	19%	3,512	204	166	-10	-0.3%	10,536	68	55
11-12	289	254	12%	3,751	211	186	239	6.8%	11,254	70	62
12-13	308	260	16%	4,255	198	167	504	13.4%	12,765	66	56
13-14	316	260	18%	4,275	202	166	20	0.5%	12,824	67	55
14-15	308	231	25%	4,320	195	147	45	1.1%	12,960	65	49
15-16	319	246	23%	4,339	201	155	19	0.4%	13,018	67	52
16-17	302	235	22%	4,358	190	148	19	0.4%	13,074	63	49
17-18	298	237	20%	4,377	186	149	19	0.4%	13,132	62	50
18-19	306	247	19%	4,424	190	153	47	1.1%	13,272	63	51
19-20	288	233	19%	4,445	178	143	21	0.5%	13,334	59	48
20-21	353	255	28%	4,548	212	153	103	2.3%	13,644	71	51
21-22	339	245	28%	4,694	198	143	146	3.2%	14,083	66	48
22-23	361	289	20%	4,832	204	164	138	2.9%	**14,496**	**74**	**55**
5-yr. Avg	**329**	**254**	**23%**	**4588**	**196**	**151**	**91**	**2.0%**	**13,765**	**67**	**50**

Brookshire (North Side) Water System TCEQ PWS: 1070167

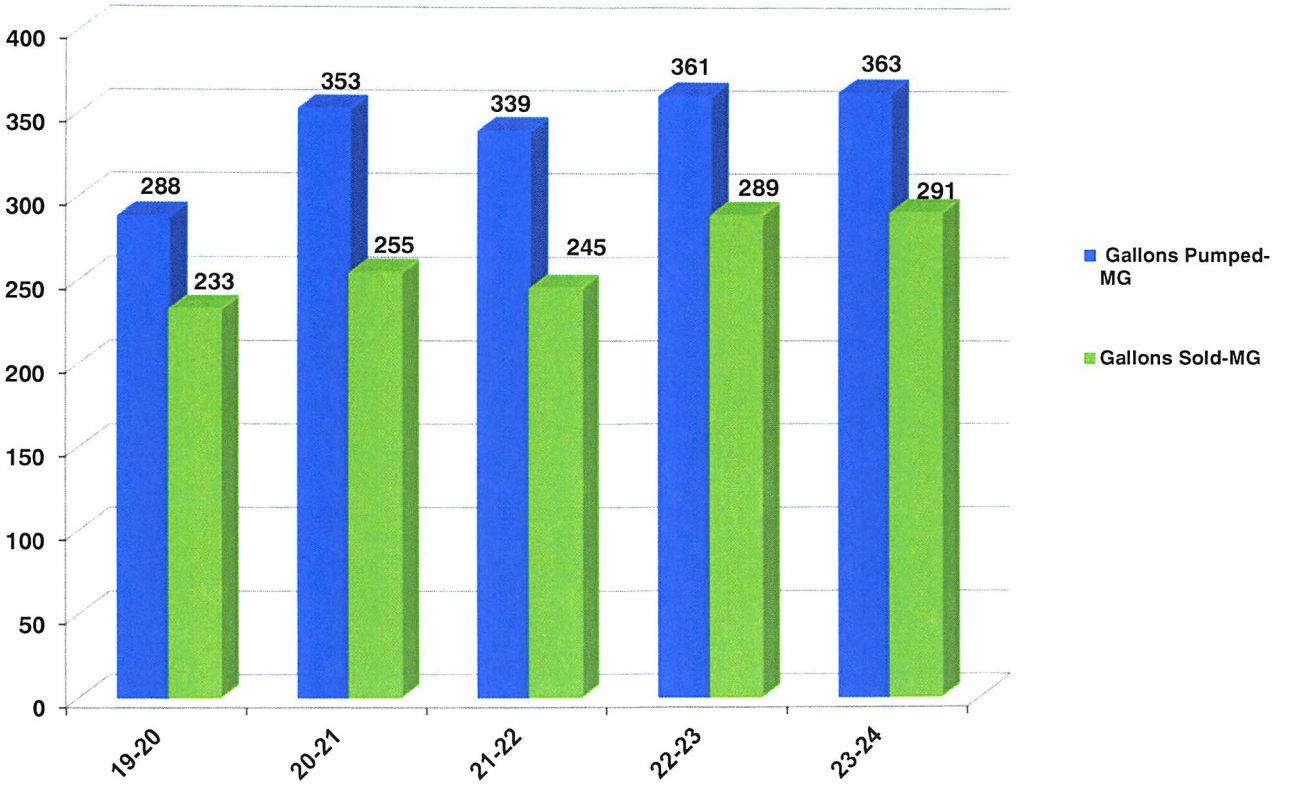
Budget Year	Gallons Pumped-MG	Gallons Sold-MG	Water Loss	Customer Units	Gal Pmp Cap/Day	Gal Sold Cap/Day	Unit + or -	Unit % + or -	Population Meter # x 3	Gal-Pmp. GPCD Pop. 3	Gal-Sold GPCD Pop. 3
% Factor	**1.006**										
23-24	363	291	20%	4,861	204	164	29	0.6%	14,582	74	55
24-25	365	293	20%	4,890	204	164	29	0.6%	14,670	74	55
1.023% Factor	**1.023**										
25-26	373	299	20%	**5,002**	204	164	112	2.3%	15,007	75	55
26-27	382	306	20%	5,118	204	164	115	2.3%	15,353	75	55
27-28	391	313	20%	5,235	204	164	118	2.3%	15,706	75	55
28-29	400	321	20%	5,356	204	164	120	2.3%	16,067	75	55
29-30	409	328	20%	5,479	204	164	123	2.3%	16,436	75	55
30-31	418	335	20%	5,605	204	164	126	2.3%	16,814	75	55
31-32	428	343	20%	5,734	204	164	129	2.3%	17,201	75	55
32-33	438	351	20%	5,866	204	164	132	2.3%	17,597	75	55
33-34	448	359	20%	6,001	204	164	135	2.3%	18,002	75	55
% Factor	**1.016**										
34-35	455	365	20%	**6,097**	204	164	96	1.6%	18,290	85	55
35-36	462	371	20%	6,194	204	164	98	1.6%	18,582	85	55
36-37	470	377	20%	6,293	204	164	99	1.6%	18,880	85	55
37-38	477	383	20%	6,394	204	164	101	1.6%	19,182	85	55
38-39	485	389	20%	6,496	204	164	102	1.6%	19,488	85	55
39-40	492	395	20%	6,600	204	164	104	1.6%	19,800	85	55
40-41	500	401	20%	6,706	204	164	106	1.6%	20,117	85	55
41-42	508	408	20%	6,813	204	164	107	1.6%	20,439	85	55
42-43	516	414	20%	6,922	204	164	109	1.6%	20,766	85	55
43-44	525	421	20%	7,033	204	164	111	1.6%	21,098	85	55
44-45	533	428	20%	7,145	204	164	113	1.6%	21,436	85	55
45-46	542	434	20%	7,260	204	164	114	1.6%	21,779	85	55
% Factor	1.10										
2056	596	478	20%	7,986	204	164	840	11.8%	23,957	85	55
2066	655	526	20%	8,113	221	178	128	1.6%	24,340	93	59

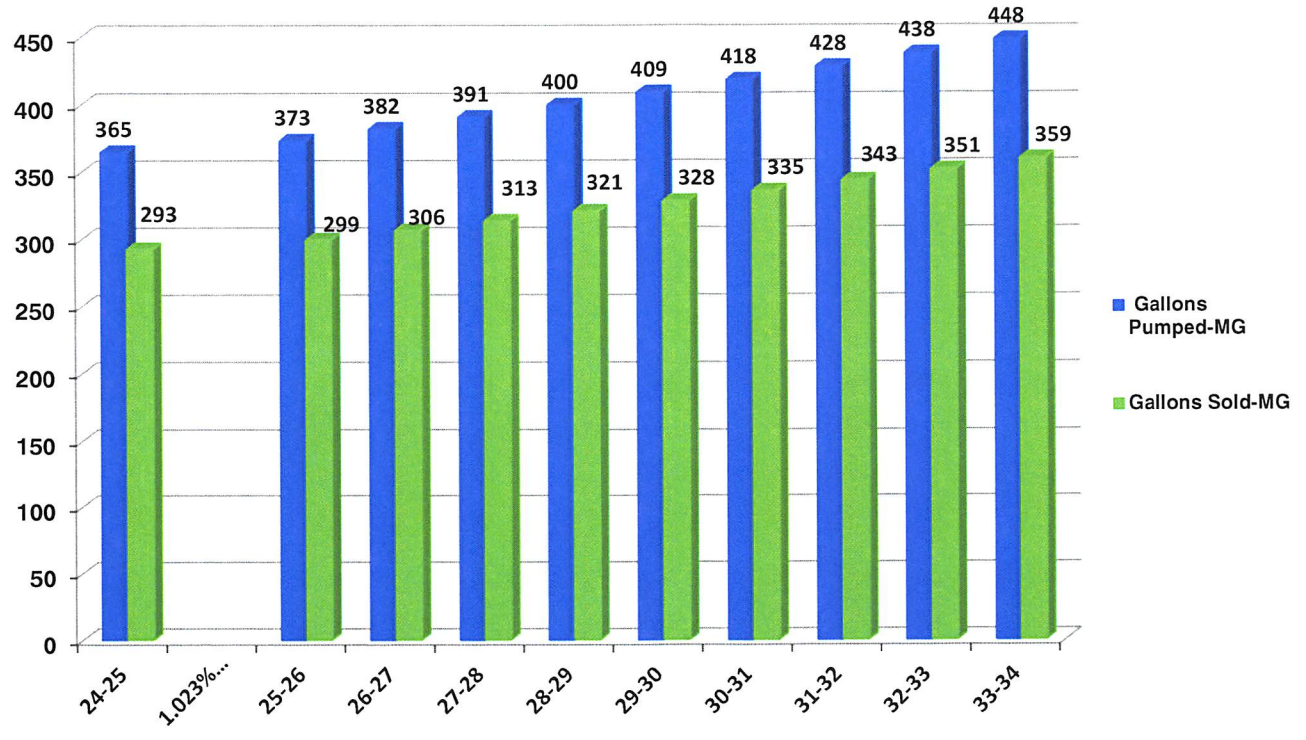
TCEQ Rule	GPM	GPD - MG	MGD Capacity	Yr.> Cap.
.6 Capacity	**3,001**	4,322,125	4.0	**4.32**
.45 Capacity	**2,743**	3,950,548	4.0	**3.95**

ECCFWSD has been approved by TCEQ to reduce the .6 gal / meter capacity rule to .45 gal / meter - ECCFWSD is working with TCEQ to reinstate variance

Addendum - 2

5- Yr. Brookshire- Total Water Gal's Pumped vs Total Water Gal's Sold





Brookshire Total Water Future Growth Projection to 2028

Addendum - 3

Residential - Brookshire (North Side) Water System TCEQ PWS: 1070167

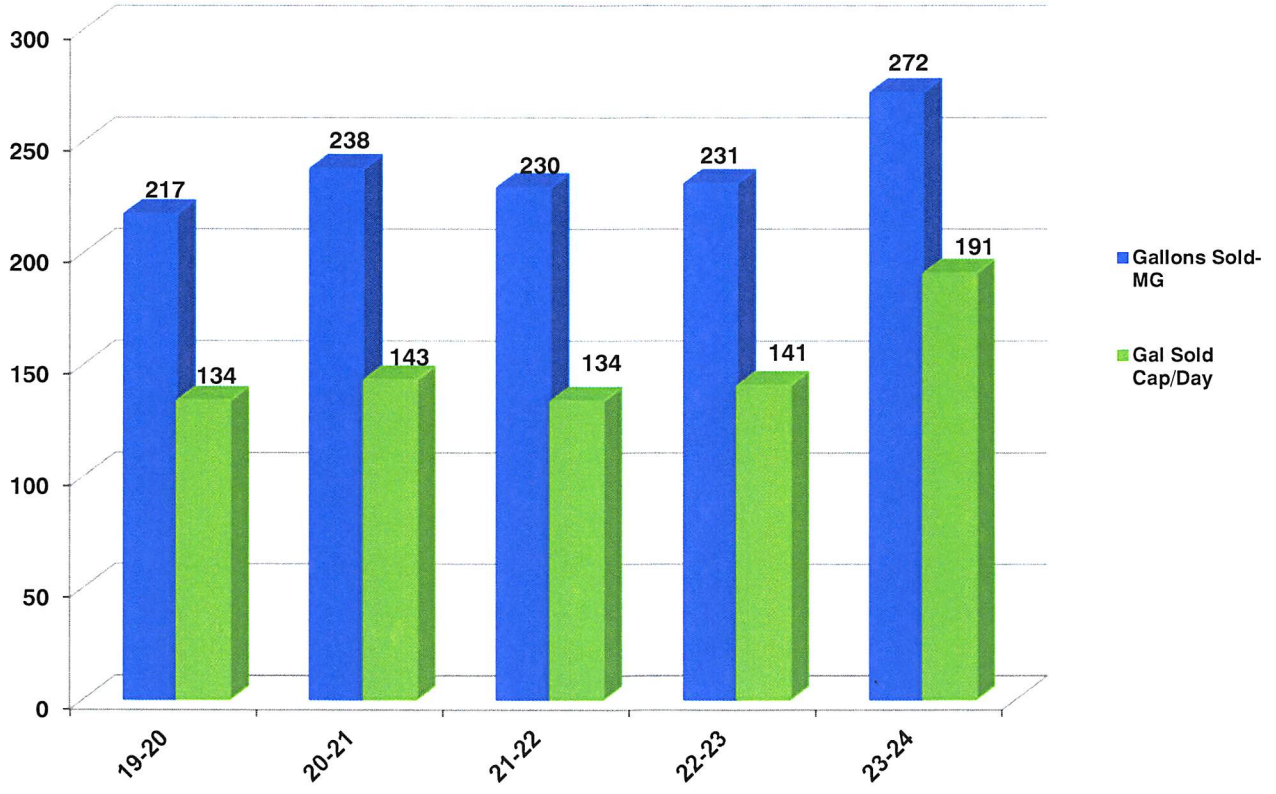
Budget Year	Gallons Sold-MG	Customer Units	Gal Sold Cap/Day	Population Meter # x 3	GPCD Pop. 3
10-11	198	3,284	155	9,851	52
11-12	238	3,507	174	10,522	58
12-13	243	3,978	157	11,935	52
13-14	243	3,997	156	11,991	52
14-15	216	4,039	137	12,117	46
15-16	230	4,057	145	12,172	48
16-17	220	4,075	138	12,224	46
17-18	222	4,093	139	12,278	46
18-19	231	4,136	143	12,409	48
19-20	217	4,118	134	12,354	45
20-21	238	4,214	143	12,641	48
21-22	230	4,349	134	13,047	45
22-23	**231**	4,477	**141**	**13,430**	**47**
5-yr. Avg	**229**	**4259**	**139**	**12,776**	**46**

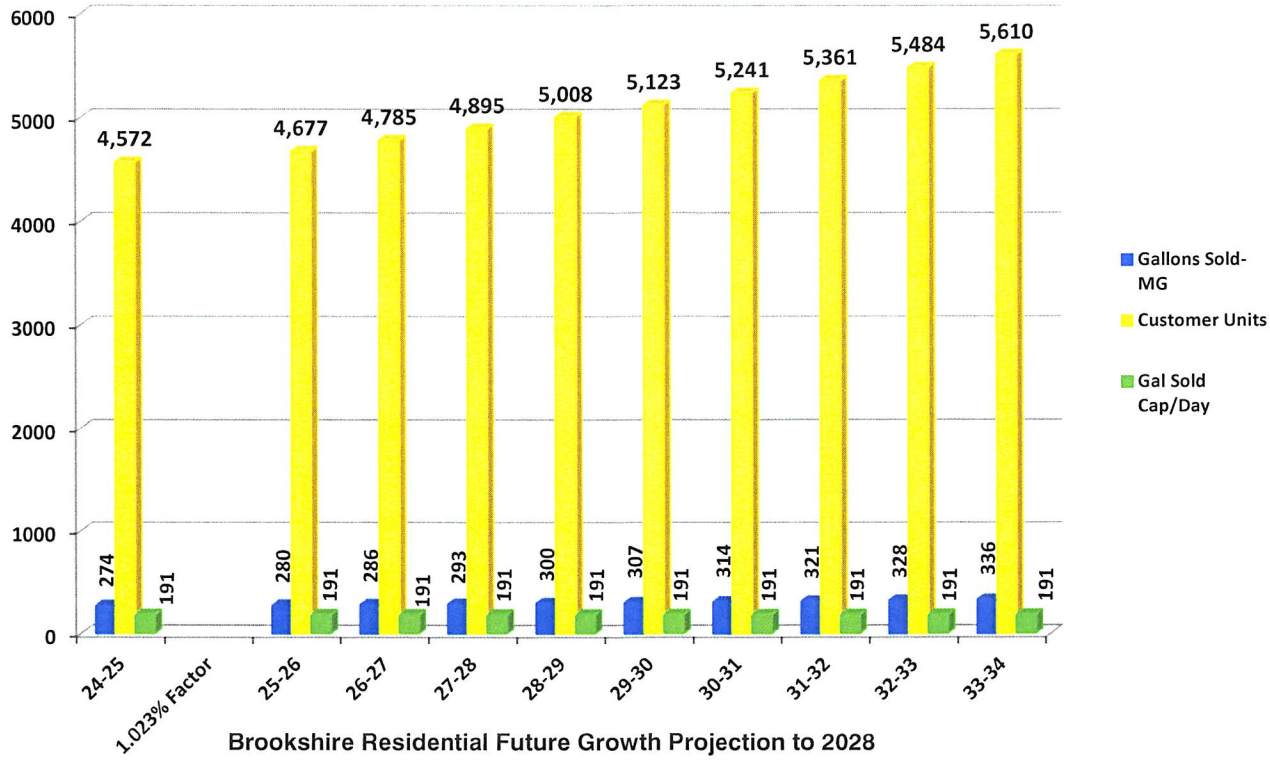
Residential - Brookshire (North Side) Water System TCEQ PWS: 1070167

Budget Year	Gallons Sold-MG	Customer Units	Gal Sold Cap/Day	Population Meter # x 3	GPCD Pop. 3
23-24	272	4,545	191	13,635	64
24-25	274	4,572	191	13,716	64
1.023% Factor					
25-26	280	4,677	191	14,032	64
26-27	286	4,785	191	14,355	64
27-28	293	4,895	191	14,685	64
28-29	300	5,008	191	15,023	64
29-30	307	5,123	191	15,368	64
30-31	314	5,241	191	15,722	64
31-32	321	5,361	191	16,083	64
32-33	328	5,484	191	16,453	64
33-34	336	5,610	191	16,831	64
% Factor					
28-29	296	4,938	166	14,815	55
29-30	300	5,017	166	15,052	55
30-31	305	5,097	166	15,292	55
31-32	310	5,179	166	15,537	55
32-33	315	5,262	166	15,786	55
33-34	320	5,346	166	16,038	55
34-35	325	5,432	166	16,295	55
35-36	330	5,519	166	16,556	55
36-37	336	5,607	166	16,820	55
37-38	341	5,697	166	17,090	55
38-39	346	5,788	166	17,363	55
39-40	352	5,880	166	17,641	55
2050	387	6,468	166	19,405	55
2060	426	6,572	179	19,715	60

Addendum - 4

5-Yr. Brookshire Residential Gal's Sold vs Gal's Sold Cap/Day





Brookshire Residential Future Growth Projection to 2028

Addendum 6

Activity Book
East Cedar Creek
Fresh Water Supply District
ECC FWSD
Water for Life
H2O for Life

Water Facts Quiz

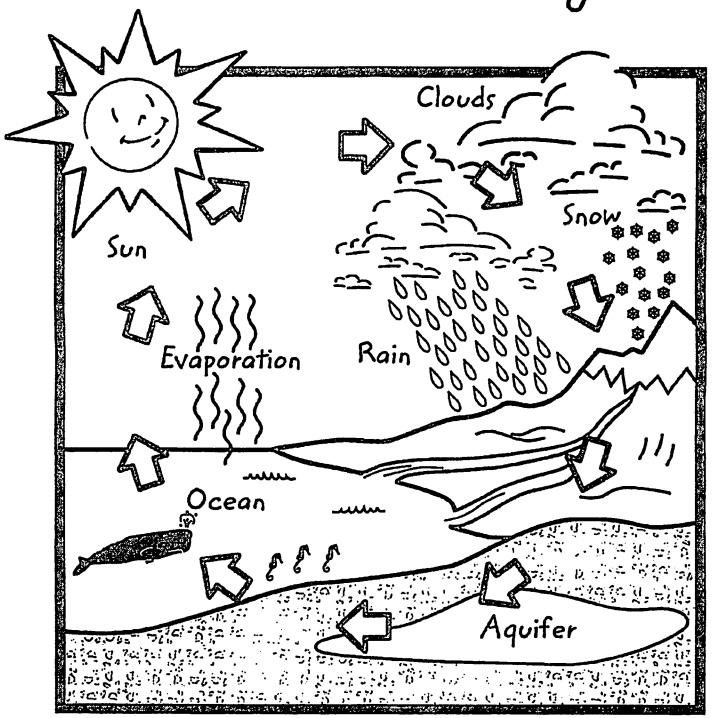
Test your knowledge of water by circling the correct answer to the questions below. Once you have finished, use the key at the bottom of the page to check your answers.

It takes 1 gallon of water to process a quarter pound of hamburger. How much water does it take to produce one serving of french fries?	A. 9 gallons B. 4 gallons C. 6 gallons D. 3 gallons
It takes 4-7 gallons of water to flush a toilet. How much water is used to take a shower?	A. 15-25 gallons B. 9-12 gallons C. 28-72 gallons D. 2-4 gallons
How much water is used to brush your teeth?	A. 5 gallons B. Less than 1 gallon C. 3 gallons D. 1 gallon
We use water in many ways. How much water does one person use daily?	A. 200 gallons B. 100 gallons C. 45 gallons D. 123 gallons
Water covers 80% of the earth's surface. How much of that water is suitable to drink?	A. 10% B. 25% C. 1% D. 5%
Water makes up roughly two-thirds (66%) of the human body. How much of a chicken is water?	A. 90% B. 64% C. 75% D. 87%

Now that you are a water expert, share your knowledge with your family and friends!

1-C, 2-B, 3-D, 4-D, 5-C, 6-C

The Water Cycle

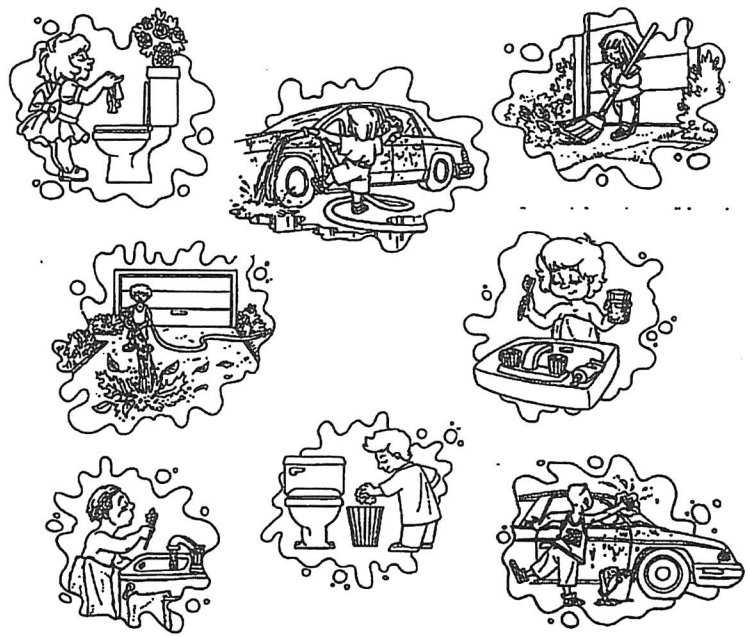


Water moves in a cycle. Color the different parts of the water cycle.

Water and our Environment

Professor Monte says, "Water Quality Starts at the Source. Help Protect Our Rivers and Streams."

Who's Conserving Water?



Look carefully at each of these pictures. Cross-out the pictures that show someone wasting water. Circle the pictures that show someone conserving water.

Conservation

② Color in the girl brushing her teeth.

H_2O for Life

Water is used in many different ways!

Think about what you did yesterday. Where you went. Then write a list of all the different ways that you used water.

⑧ Now count the many different ways you used water yesterday and put the total in the drop.

Addendum 10

DRINKING WATER WEEK

AMERICAN WATER WORKS ASSOCIATION EXPLAINS THE HISTORY OF DRINKING WATER WEEK

History

In 1988, AWWA brought Drinking Water Week to the attention of the U.S. Government and formed a coalition along with the League of Women Voters, the Association of State Drinking Water Administrators and the US Environmental Protection Agency.

Rep. Robert Roe and Sen. Dennis DeConcini subsequently sponsored a resolution to name the first week of May as Drinking Water Week, and the week-long observance was declared in a joint congressional resolution signed by then President Ronald Reagan.

Addendum 11

Drinking Water Week 2023
May 7-13, 2023

1. Turn off the faucet while brushing your teeth.
2. Only run the washing machine and dishwasher when you have a full load.
3. Use a low flow shower head and faucet aerators.
4. Fix leaks.
5. Install a dual flush or low flow toilet or put a conversion kit on your existing toilet.
6. Don't overwater your lawn or water during peak periods and install rain sensors on irrigation systems.
7. Install a rain barrel for outdoor watering.
8. Plant a rain garden for catching stormwater runoff from your roof, driveway, and other hard surfaces.
9. Monitor your water usage on your water bill and ask your local government about a home water audit.
10. Share your knowledge about saving water through conservation and efficiency with your neighbors.