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)

McKay PWS: 1070019
ECCFWSD CCN: 11682

McKay Conservation Plan

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

ECCFWSD: McKay Water System Conservation Plan

Table of Content

ECCFWSD MCKAY: CONSERVATION PLAN
PWS: 1070019 / 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.

McKay Water Source
The 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 2.68 cubic feet per second (1,201 gpm). The District also has a contract with the City of Trinidad to purchase 750-acre feet annually. The McKay raw water diversion report of 2022-23 was 215.5-MG. McKay Water Treatment Plant is capable of treating 1,730,000 gallons per day.

McKay Drinking Water System
The Distribution system consists of a 300,000-gallon elevated water tower, (2) ground storage tanks with a combined capacity of 327,000 gallons for a total of 637,000 gallons of water storage capacity (capacities correct). The number of customer's accounts change monthly, in 2023 (June Counts) fiscal year the average customer base for water was 2,289 and 1,206 (water and sewer customers as of 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 Eustace Water Supply, Payne Springs WSC, and Southwest Water Company.

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.

Wastewater System
East Cedar Creek Fresh Water Supply District (ECCFWSD) owns, operates, and provides sewer service to the McKay water customers. The Wastewater Treatment Plant (South WWTP) was built in 1995. The facility is permitted to discharge up to 196,000 gallons per day. The current 5-year average for effluent discharge is 0.091 gallons per day.

Under the 2018 Bond funding, a second wastewater treatment plant was built in 2019 - 2020 next to the first SWWTP to provide redundancy and add a treatment capacity of 0.125 MGD. In November 2022, another Bond was secured to rehab the older plant.

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. All new accounts are provided with a customer packet which promotes 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 as40%. 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. The project stared by replacing 1,500 in 5 subdivisions in the Districts northside. In a 2022 Bond project, 2,500 manual read meters will be replaced in the Districts southside to AMR meters. From there, the District will look to replace 1,000 manual read meters per year until all meters are AMR meters. The AMR meters are 96% accurate at 1/8 gpm flow and 100% accurate at ¼ gpm flow. This should help reduce water loss and help customer's 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 121 gallons/day and the 3 per family GPCD is 40. ECCFWSDs goal is to maintain the current 5-yr water usage of 121 gallons per day per meter. Using the District's meter to population calculation of 3 family members per household, this equates to 40 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 struggled to reduce usage to below the past conservation plan's goal of 121 gallons per day per meter.

10-year Targets and Goals

ECCFWSD's goal is to reduce our maximum water usage from 121 to 115 gallons per day per meter. Using the District's meter to population calculation of 3 family members per household this equates to 38 gallons per capita per day. ECCFWSD also plans to maintain an unaccountable water loss goal of 10%. Addendum: ECCFWSD Annual Customer Unit Report.

McKay 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 McKay Water System.

Addendum Section

Addendum - 1

Total Usage - McKay (South Side) Water System TCEQ PWS: 1070019

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	114	99	14%	2,037	154	133	0	0.0%	6,112	51	44
11-12	136	111	19%	2,042	183	149	5	0.3%	6,127	61	50
12-13	119	96	19%	2,042	160	129	0	0.0%	6,126	53	43
13-14	113	96	15%	2,051	151	128	9	0.5%	6,154	50	43
14-15	115	86	25%	2,048	153	115	-4	-0.2%	6,143	51	38
15-16	117	90	23%	2,059	156	120	11	0.6%	6,177	52	40
16-17	109	87	20%	2,058	145	115	0	0.0%	6,175	48	38
17-18	127	87	31%	2,081	167	115	22	1.1%	6,242	56	38
18-19	127	89	30%	2,105	166	116	25	1.2%	6,316	55	39
19-20	118	88	26%	2,117	153	114	12	0.6%	6,352	51	38
20-21	176	98	44%	2,164	223	124	47	2.2%	6,492	74	41
21-22	190	91	52%	2,211	235	113	47	2.2%	6,634	78	38
22-23	215	115	46%	2,265	260	139	54	2.4%	**6,796**	**93**	**46**
5-yr. Avg	**165**	**96**	**40%**	**2173**	**207**	**121**	**37**	**1.7%**	**6,518**	**70**	**40**

McKay (McKay Side) Water System TCEQ PWS: 1070019

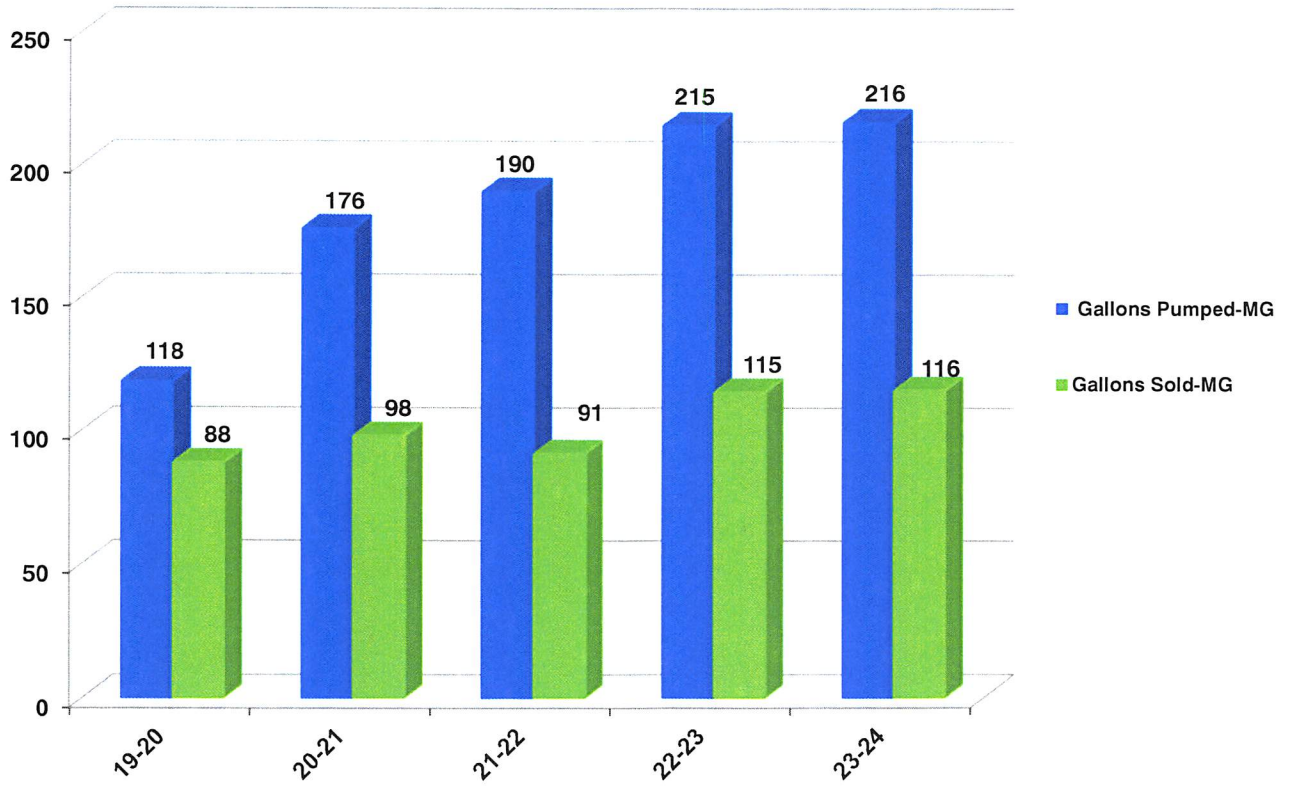
Budget Year	Gallons Pumped-MG	Gallons Sold-MG	Water Loss	Customer Units	Gal Pmp Cap/Day	Gal Sold Cap/Day	Unit + or -	Unit % + or -	Population Meter # x 3	Gal-Pmp. GPCD Pop. 3	Gal-Sold GPCD Pop. 3
% Factor	**1.006**										
23-24	216	116	46%	2,279	260	139	14	0.6%	6,837	95	46
24-25	217	116	46%	2,293	260	139	14	0.6%	6,878	94	46
1.023% Factor	**1.023**										
25-26	222	119	46%	**2,345**	260	139	53	2.3%	7,036	95	46
26-27	227	122	46%	2,399	260	139	54	2.3%	7,198	95	46
27-28	233	124	46%	2,454	260	139	55	2.3%	7,363	95	46
28-29	238	127	46%	2,511	260	139	56	2.3%	7,532	95	46
29-30	243	130	46%	2,569	260	139	58	2.3%	7,706	95	46
30-31	249	133	46%	2,628	260	139	59	2.3%	7,883	95	46
31-32	255	136	46%	2,688	260	139	60	2.3%	8,064	95	46
32-33	261	139	46%	2,750	260	139	62	2.3%	8,250	95	46
33-34	267	143	46%	2,813	260	139	63	2.3%	8,439	95	46
% Factor	**1.016**										
34-35	271	145	46%	**2,858**	260	139	45	1.6%	8,574	109	46
35-36	275	147	46%	2,904	260	139	46	1.6%	8,712	109	46
36-37	280	150	46%	2,950	260	139	46	1.6%	8,851	109	46
37-38	284	152	46%	2,998	260	139	47	1.6%	8,993	109	46
38-39	289	154	46%	3,046	260	139	48	1.6%	9,137	109	46
39-40	293	157	46%	3,094	260	139	49	1.6%	9,283	109	46
40-41	298	159	46%	3,144	260	139	50	1.6%	9,431	109	46
41-42	303	162	46%	3,194	260	139	50	1.6%	9,582	109	46
42-43	307	165	46%	3,245	260	139	51	1.6%	9,735	109	46
43-44	312	167	46%	3,297	260	139	52	1.6%	9,891	109	46
44-45	317	170	46%	3,350	260	139	53	1.6%	10,050	109	46
45-46	322	173	46%	3,403	260	139	54	1.6%	10,210	109	46
% Factor	1.10										
2056	355	190	46%	3,744	260	139	394	11.8%	11,231	109	46
2066	390	209	46%	3,804	281	150	60	1.6%	11,411	117	50

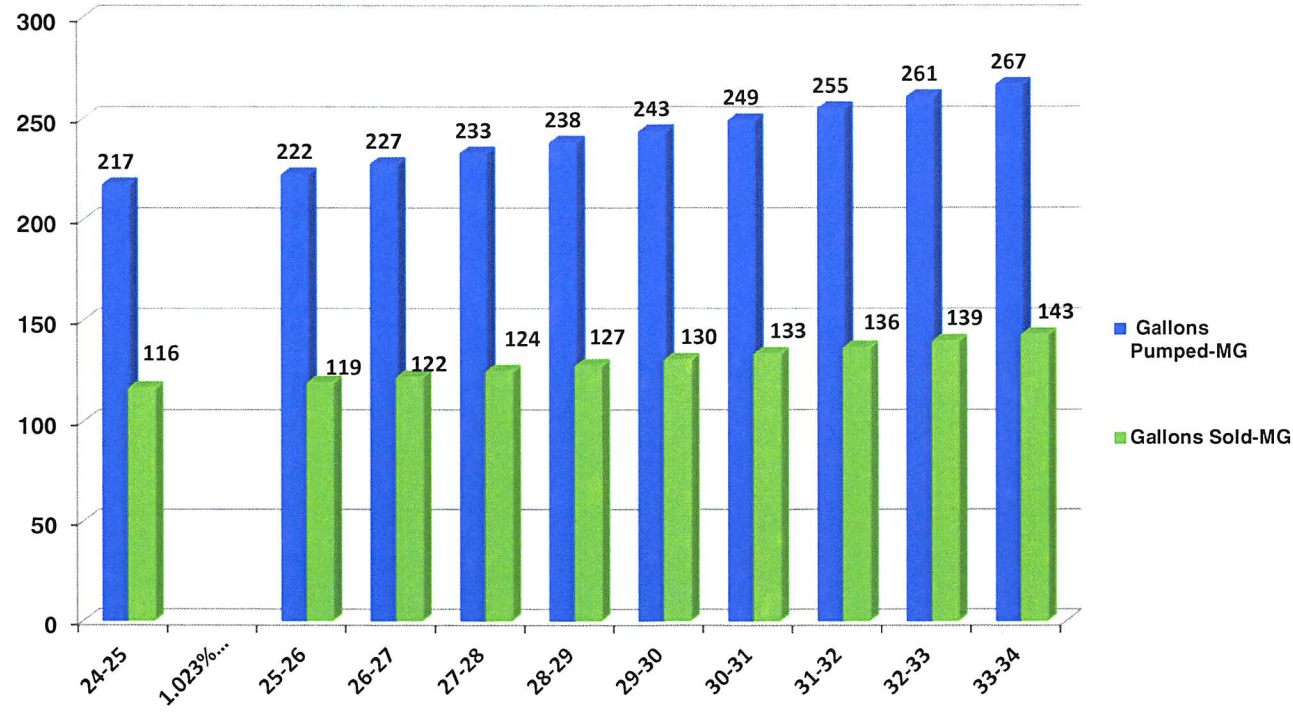
TCEQ Rule	GPM	GPD - MG	MGD Capacity	Yr.> Cap.
.6 Capacity	**1,407**	2,026,289	4.0	**2.03**
.45 Capacity	**1,286**	1,852,088	4.0	**1.85**

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. McKay- Total Water Gal's Pumped vs Total Water Gal's Sold





McKay Total Water Future Growth Projection to 2028

Addendum - 3

Residential - McKay (South Side) Water System TCEQ PWS: 1070019

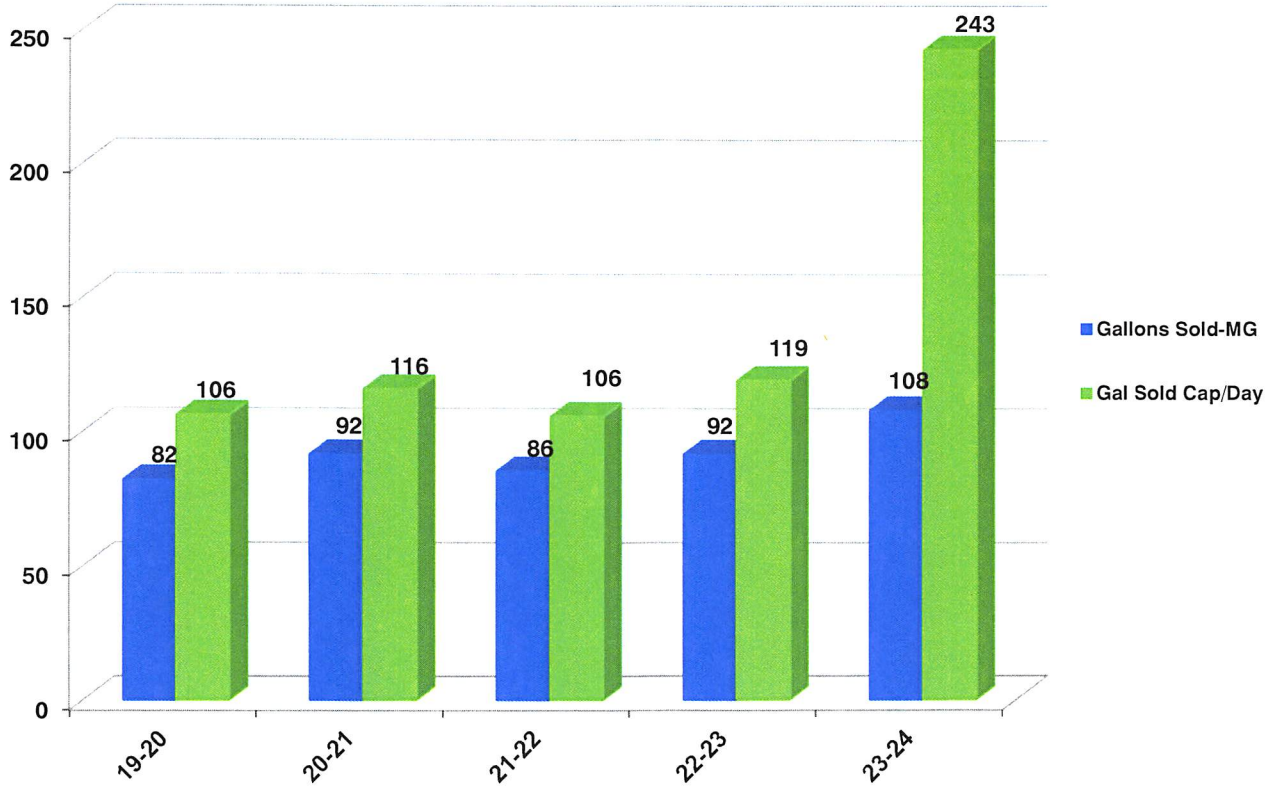
Budget Year	Gallons Sold-MG	Customer Units	Gal Sold Cap/Day	Population Meter # x 3	GPCD Pop. 3
10-11	92	1,905	124	5,714	41
11-12	104	1,910	139	5,729	46
12-13	90	1,909	121	5,728	40
13-14	90	1,918	120	5,754	40
14-15	81	1,914	108	5,743	36
15-16	84	1,925	112	5,775	37
16-17	81	1,925	108	5,774	36
17-18	82	1,945	107	5,836	36
18-19	83	1,968	108	5,905	36
19-20	82	1,962	106	5,885	35
20-21	92	2,005	116	6,015	39
21-22	86	2,049	106	6,146	35
22-23	**92**	2,099	**119**	**6,296**	**40**
5-yr. Avg	**87**	**2016**	**111**	**6,049**	**37**

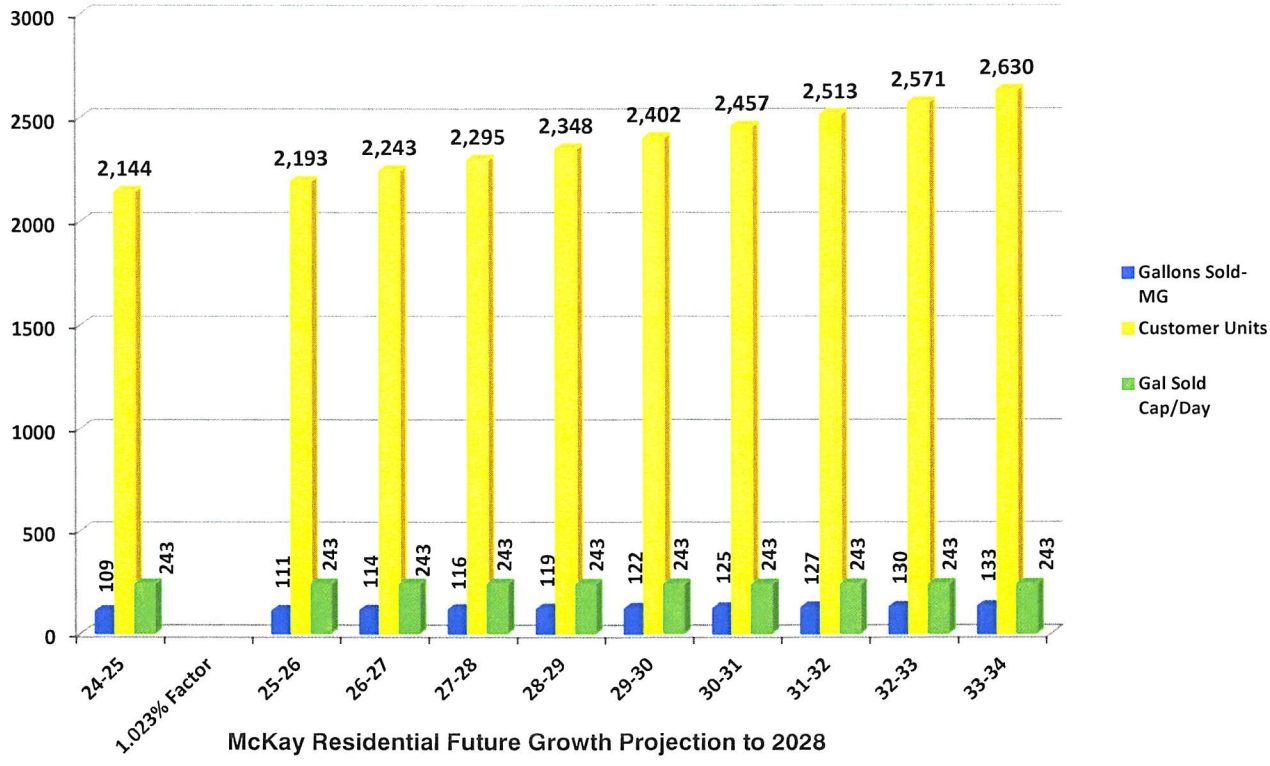
Residential - McKay (South Side) Water System TCEQ PWS: 1070019

Budget Year	Gallons Sold-MG	Customer Units	Gal Sold Cap/Day	Population Meter # x 3	GPCD Pop. 3
23-24	108	2,131	243	6,392	81
24-25	109	2,144	243	6,431	81
1.023% Factor					
25-26	111	2,193	243	6,578	81
26-27	114	2,243	243	6,730	81
27-28	116	2,295	243	6,884	81
28-29	119	2,348	243	7,043	81
29-30	122	2,402	243	7,205	81
30-31	125	2,457	243	7,371	81
31-32	127	2,513	243	7,540	81
32-33	130	2,571	243	7,713	81
33-34	133	2,630	243	7,891	81
% Factor					
28-29	117	2,315	210	6,945	70
29-30	119	2,352	210	7,056	70
30-31	121	2,390	210	7,169	70
31-32	123	2,428	210	7,284	70
32-33	125	2,467	210	7,401	70
33-34	127	2,506	210	7,519	70
34-35	129	2,546	210	7,639	70
35-36	131	2,587	210	7,762	70
36-37	133	2,629	210	7,886	70
37-38	135	2,671	210	8,012	70
38-39	138	2,713	210	8,140	70
39-40	140	2,757	210	8,270	70
2050	154	3,032	210	9,097	70
2060	169	3,081	228	9,243	76

Addendum - 4

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





McKay 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

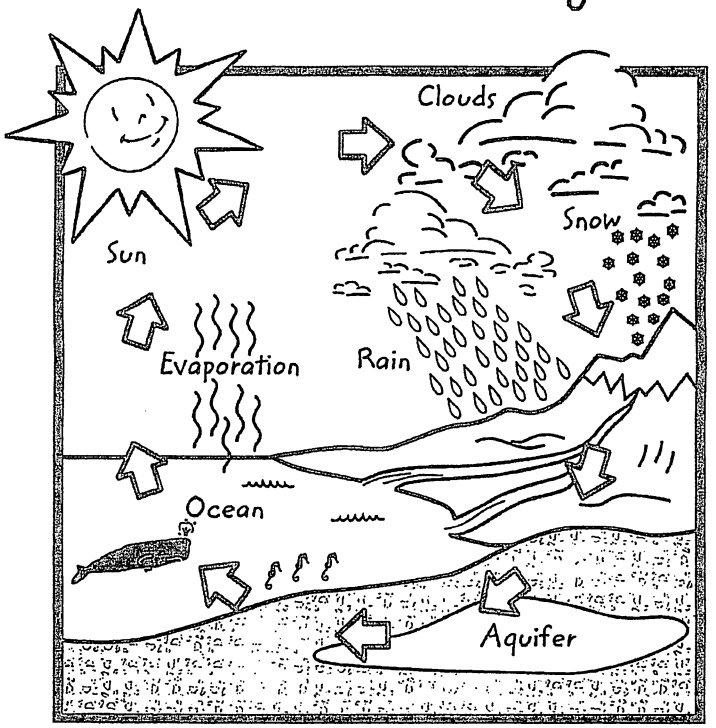
Test your knowledge of water by circling the correct answer to the questions below. Once you have finished, use the key at the bottom of the page to check your answers.

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

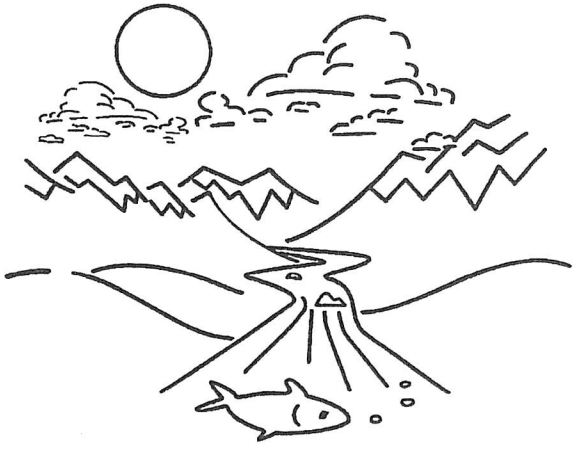
The Water Cycle



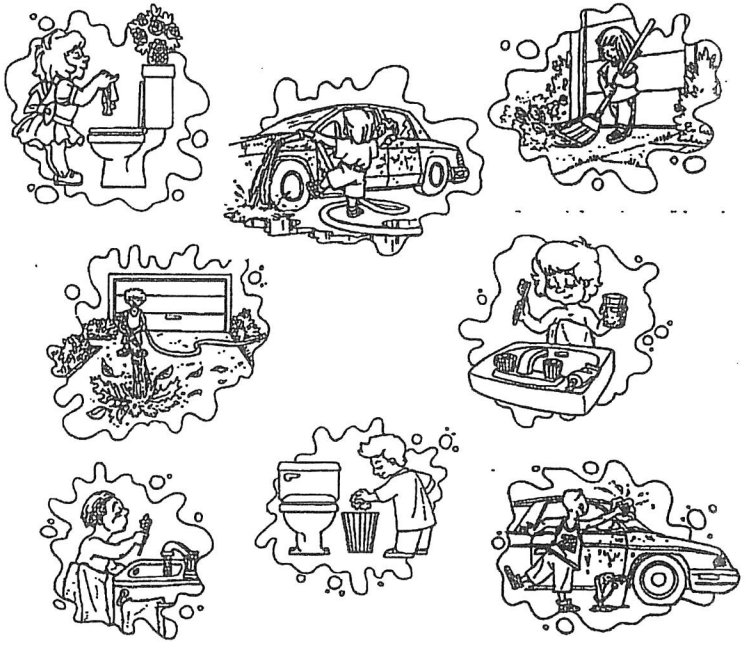
Water moves in a cycle. Color the different parts of the water cycle.

Water and our Environment

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



Who's Conserving Water?



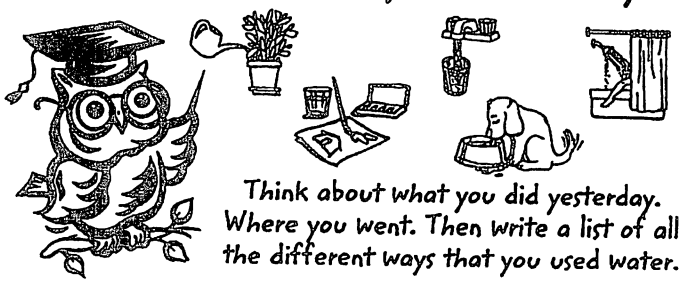
Look carefully at each of these pictures. Cross-out the pictures that show someone wasting water. Circle the pictures that show someone conserving water.

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 9

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.