Brandon-Irene Water Supply Corporation

Water Conservation Plan

March 3, 2025

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Water Conservation Plan

Adopted: March 3, 2025

I. Introduction

The Brandon-Irene Water Supply Corporation provides treated groundwater and purchased water for 3 pressure planes. Treated groundwater and purchased water is pumped and delivered via approximately 165 miles of distribution lines ranging in different sizes from 8 inch to 1-inch diameter pipeline. The system has three Trinity Aquifer wells and purchases water from the Aquilla Water Supply District in Hill County.

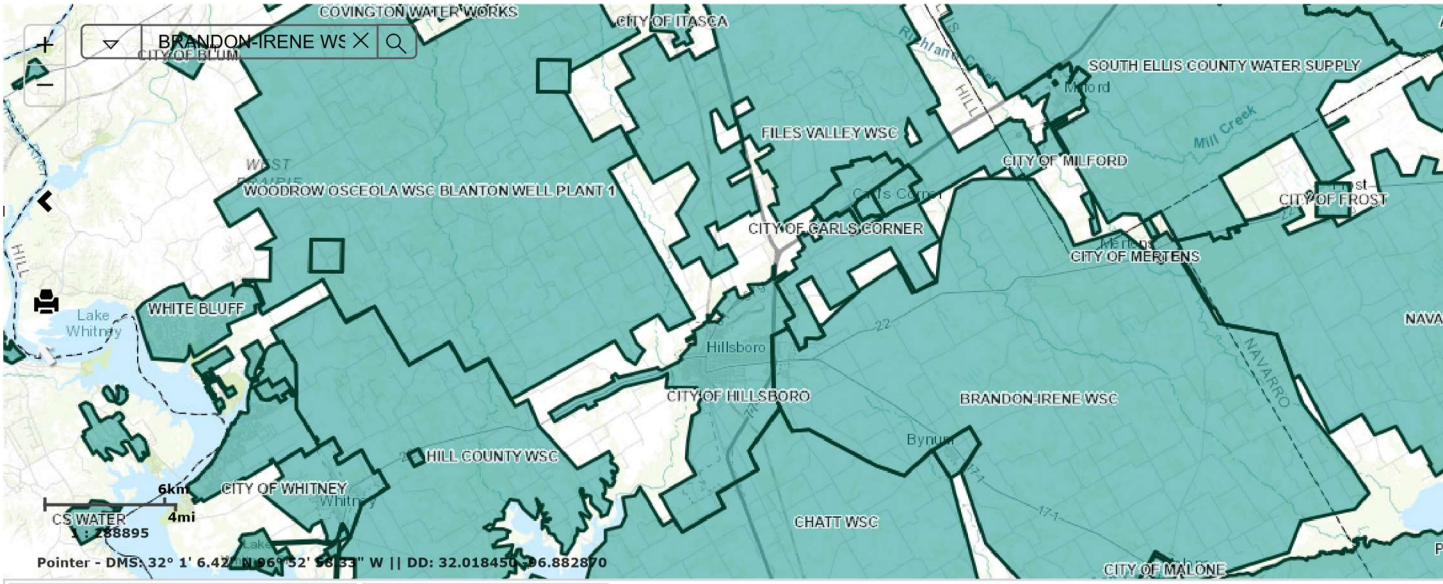
The Brandon-Irene Water Supply Corporation recognizes the need for efficient use of existing water supplies. The Texas Commission on Environmental Quality has developed guidelines and requirements for developing water conservation and drought contingency plans. The objectives of the water conservation and drought plan are the following:

1. To reduce water consumption
2. To reduce the loss and waste of water
3. To reduce summertime peak demand
4. To improve efficiency in water use
5. To extend the life of current water supplies

The Brandon-Irene WSC has adopted this water conservation plan pursuant to TAC Title 30, Part 1, Chapter 288.

Conservation Coordinator, Shelley Brown, will be responsible for implementing the water conservation plan. Shelley will make recommendations to the BIWSC board with regard to implementation and enforcement of this water conservation plan. In addition, Shelley Brown will be responsible for preparing the annual report on the utility profile for TWDB-1965. Shelley will be responsible for the annual updates of the conservation plan. As conservation coordinator, Shelley will coordinate water utility staff, gather data from various departments and other resources as necessary for the purpose of developing, implementing, and evaluating the effectiveness of the utility's water conservation plan. Her other duties will include responsibility for drought contingency plans and the preparation and submittal of annual conservation status reports to TCEQ and the Texas Water Development Board. Additionally, Shelley will prepare the annual conservation budget and promote the value of water conservation programs both within the utility and throughout the utility's service area.

II. Population and Service Area



Service Areas **4599** Download | Service Area Selections

PWS ID	PWS Name	PWS Review Date	Area (sq
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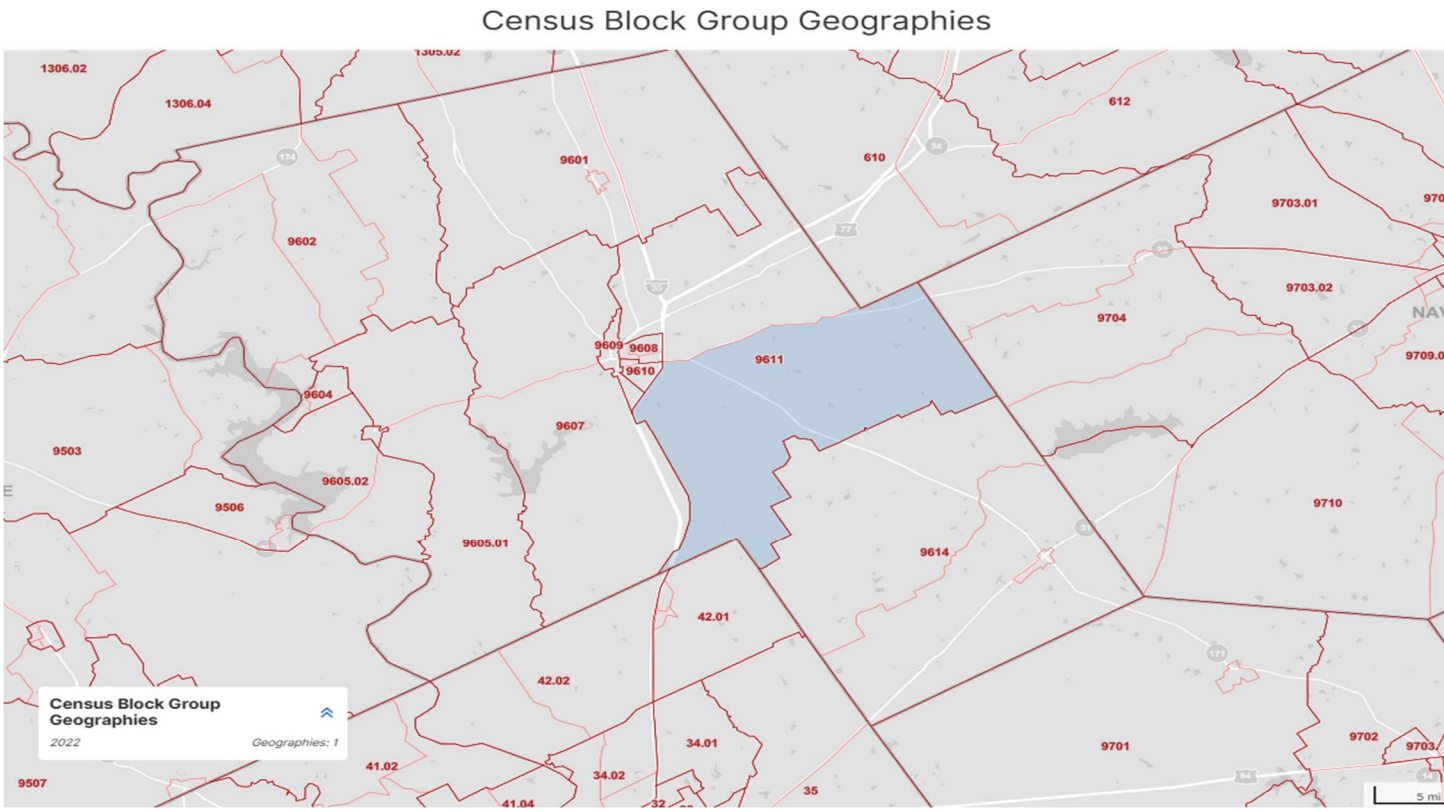
TX1090018	BRANDON-IRENE WSC	1/23/2025	127.345
TX1010887	BRANDYWINE OAKS	4/10/2024	0.035
TX1011219	BRANDYWINE PINES	4/10/2024	0.067
TX1120010	BRASHEAR WSC	5/4/2020	29.652
TX0790597	BRAZORIA - FORT BEND COUNTIES MUD 3	4/8/2024	0.935
TX0200025	BRAZORIA COUNTY FWSD 1 DAMON	2/11/2025	2.817
TX0200386	BRAZORIA COUNTY MUD 2	2/27/2024	0.970
TX0200610	BRAZORIA COUNTY MUD 21	1/27/2025	0.958
TX0200706	BRAZORIA COUNTY MUD 22	1/27/2025	0.954



Map Note 1:

The boundaries , roads, and hydrography shown on the map are from the Census Bureau's MAF/TIGER database .

1. Area in square miles: 127,345
2. Current population: 2196

3. Population served for the previous four years:

Year	Population
2024	2196
2023	2196
2022	2157
2021	2157

4. Projected population for service area in the following decades:

Year	Population
2030	2380
2040	2400
2050	2425
2060	2450

III. **Customer Data:**

1. Five and ten-year goals for water savings:

		5 years	10 years
Current GPCD	575	550	525
Water Loss GPCD	354	175	30
Water Loss Percentage	62%	25%	10%

2. Current number of active connections

Treated Water Users	Metered	Non-metered	Totals
Residential Single Family	741	0	741
Residential Multi-family	1	0	1
Commercial	18	0	18
Industrial	0	0	0
Institutional	10	0	10
Agriculture	9	0	9
Other	1	0	1

3. The number of new connections per year for the past three years:

2024	2023	2022
4	9	0

4. Annual water use for the six highest volume customers in 2024:

Customer	Number of gallons	Treated Water or Raw
City of Bynum	7,414,700	Treated Water
Estrada Ready Mix	3,098,600	Treated Water
Huse Processing	1,000,900	Treated Water
Fuchs Cattle	286,800	Treated Water
Young Animal Hospital	159,600	Treated Water
Hill College	518,500	Treated Water

IV. Water Use Data for Service Area

1. The previous five years' gallons of treated water provided to retail customers:

Month	2024	2023	2022	2021	2020
January	5,991,800	5,412,700	7,236,200	3,490,400	3,829,000
February	4,866,400	4,914,0004	6,280,400	7,843,600	4,286,600
March	4,810,400	4,158.400	7,494,300	3,292,100	4,601,200
April	7,522,300	7,780,900	9,429,400	5,064,500	6,383,600
May	4,448,900	4,144,600	6,799,400	4,625,800	4,740,800
June	5,063,800	5,829,000	25,638,100	4,309,600	6,907,600
July	5,986,500	6,852,400	24,535,300	5,041,800	6,301,600
August	7,796,800	10,026,400	16,009,900	9,516,000	10,088,300

September	6,965,300	7,609,100	8,867,100	8,663,400	7,374,600
October	5,130,700	6,021,400	16,213,800	7,747,900	5,095,800
November	6,061,700	4,979,000	4,585,500	8,777,100	5,548,400
December	3,720,100	6,261,500	4,616,800	4,616,800	4,152,600
Total	68,364,700	73,989,400	137,706,200	72,989,000	69,310,300

2. Amount of water delivered for the previous four years by account type:

Year	Residential Single Family	Residential Multi-family	Industrial	Commercial	Institutional	Agricultural	City of Bynum
2024	48,500,830	925,600	0	5,245,570	1,512,900	765,000	7,414,700
2023	68,192,500	166,700	0	2,440,800	640,400	4,022,100	6,362,000
2022	55,583,000	533,000	0	3,190,300	712,800	2,513,300	5,591,000
2021	68,192,500	466,700	0	2,440,800	640,400	4,022,100	6,777,900

3. Water loss data for the previous five years:

Year	Water loss in gallons	Water loss in GPCD	Water loss in GCD	Water Loss Percentage
2024	106,441,415	133	374.3	62%
2023	120,713,800	257	725	54%
2022	115,770,000	144	144	54%
2021	76,864,912	95	270	36%
2020	111,933,457	139	393	63%
Average	123,455,659	154	381	54%

V. Water Supply System Data

A. Water Supply Sources

1. Water supply source and amount for the previous three years:

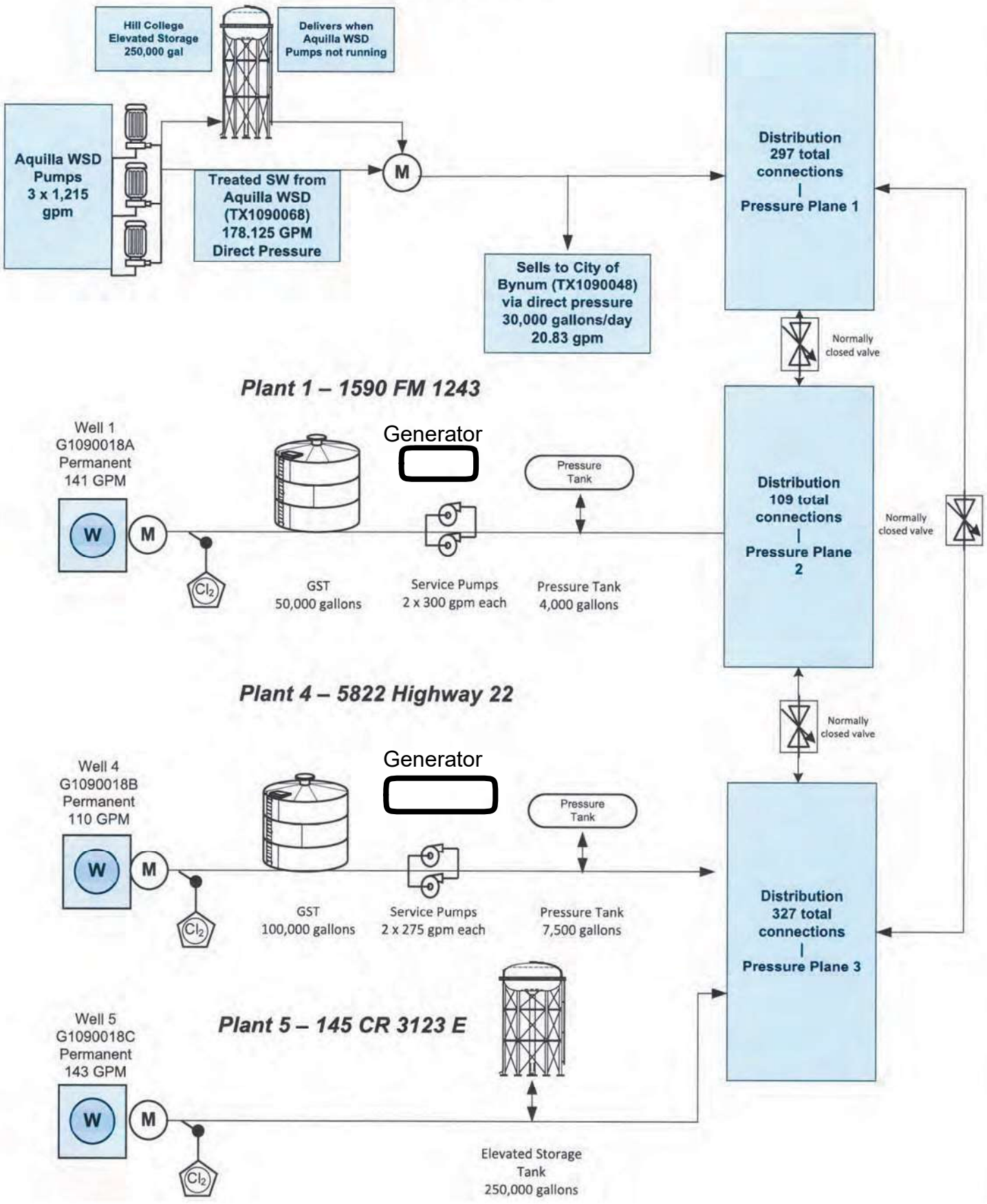
Year	Water produced from wells	Purchased water from Aquilla Water Supply
2024	52,380,700	117,555,000
2023	162,717,300	60,070,000
2022	152,537,300	60,070,000

B. Treatment and Distribution System for Brandon-Irene Water Supply Corporation, CCN # 10745

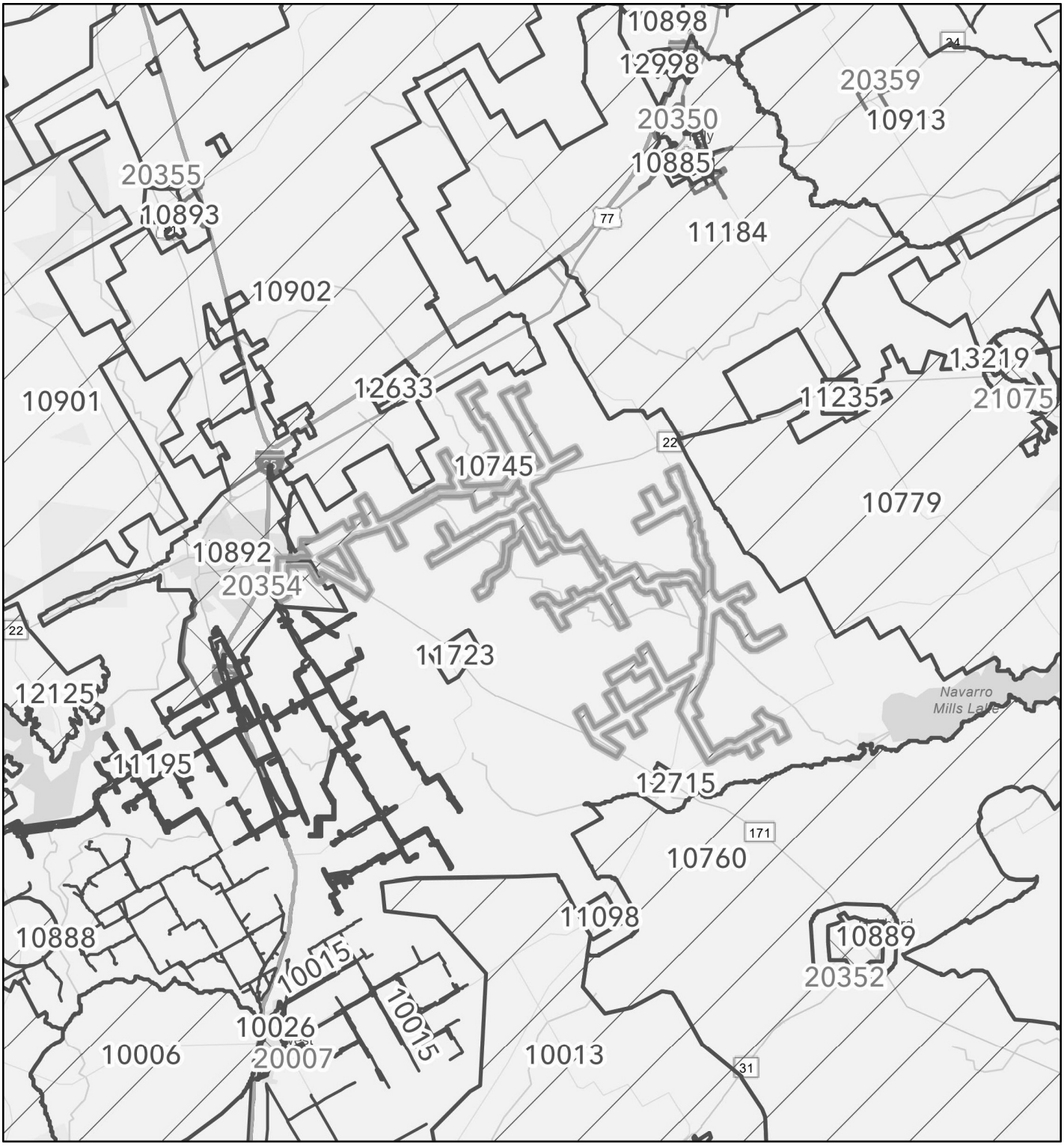
1. Storage Capacity
   a. 50,000 gallon ground storage tank
   b. 150,000 gallon ground storage tank
   c. 250,000 gallon elevated storage tank

On the following two pages are illustrations of the three treatment plants, water storage tanks, and the distribution lines. The distribution lines map is included from the website of the Public Utility Commission of Texas.

Brandon-Irene WSC PWS | Hill County
PWS ID No. 1090018
02/15/2022
Ross M. Luedtke



ArcGIS Web Map



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1:311,596

0 2.25 4.5 9 mi

0 3.5 7 14 km

Water CCN Facility Lines

Water CCN Service Areas

VI. Water Conservation Data

A. Record Management System

Brandon-Irene Water Supply Corporation uses a record management system that classifies water sales into subcategories that include residential (single family and multifamily), commercial, institutional, agricultural , and wholesale. These reports are reported to the board at monthly meetings and on an annual basis.

B. Five and Ten-Year Water Loss Targets

5. Five and ten-year goals for water savings:

	5 years	10 years
Current GPCD	575	550	525
Water Loss GPCD	354	175	30
Water Loss Percentage	62%	25%	10%

C. Measuring and Accounting for Diversions

Accuracy of meters within a plus or minus 5% and fail rates will be continually monitored and appropriate adjustments will be made to the replacement program. This will assist with discovery of water loss within the system.

D. Metering

Brandon-Irene Water Supply Corporation has 3 master meters for well production and 1 master meter for purchased water. BIWSC follows TECQ guidelines for meter testing, repair, and replacement.

E. Measures to Determine and Control Water Loss

Water conservation measures are in place with BIWSC. The employees conduct regular inspections of the waterlines and maintain accurate water leak and repair records. Annual audits determine overall water loos and monthly tracking is conducted through flushing logs, work orders, and water loss reports.

F. Continuing Public Education and Information

Brandon-Irene Water Supply Corporation encourages water conservation and provides information about water conservation on its website https://www.brandonirenewsc.com. Information is updated on a regular basis by the office manager. Also, water conservation literature is provided to new customers when they apply for service. The board uses the annual meeting of all corporation members to educate water customers about the overall picture of the well-producing capacity of the water supply and the need to buy water from the Aquilla Water Supply District. The goal is to educate customers on the importance of conservation and its impact on individual bills.

G. Brandon-Irene Water Supply Corporation's water rate structure is cost-based and does not encourage water use that is excessive or wasteful. The increasing rate, which is based on the quantity of water used, encourages water conservation. The price of water increases at specific tiers of consumption.

Water Use	Rate
1-10,000 gallons	$8.00/per thousand
10,000-19,999 gallons	$9.50/per thousand
20,000-29,999 gallons	$10.00/thousand
30,000-40,000 gallons	$11.00/thousand
More than 40,000 gallons	$12.00/thousand

The monthly minimum base rate for all meters, including meters that are inactive, is $94.95. The board approved the last rate hike on February 13, 2025, resulting in the above rates.

H. Reservoir Systems Operations Plan

Brandon-Irene Water Supply Corporation is not required to have a reservoir systems operations plan.

I. Enforcement Procedures and Plan Adoption

The enforcement procedures are listed in the Drought Contingency Plan.

J. Coordination with the Regional Water Planning Group

Brandon-Irene WSC is within the Brazos G Regional Planning area. Board member Janet Walters has received information and guidance from Tom Barnett, Brazos G Manager, as the BIWSC board is working on the documents required by the Texas Water Development Board to apply for financial assistance to replace faulty water lines and reduce water loss.

K. Plan Review and Update

The water conservation plan will be reviewed and updated every five years.

L. Leak Detection and Repair

Brandon-Irene Water Supply Corporation has a proactive leak detection program in place. Field technicians monitor for water leaks on a daily basis at the water storage sites and the distribution system. Water loss is tracked through monthly reports to identify trends and areas of leak concern. The public is encouraged to report any evidence of a leak to the water office. Also, a phone number is posted on the website that the public can use to report evidence of a leak 24 hours/7 days a week. A field technician responds to the phone number. The water supply is using leak detection equipment to find leaks that don't show ground surface evidence. Repair crews respond quickly to repair leaks reported by the public. There are four areas, comprising 9.5 miles that Childress Engineers of Cleburne, has identified as the locations where BIWSC is experiencing most of its water loss. BIWSC is applying for financial assistance to replace those lines from the Texas Water Development

Board on March 7, 2025. More information about the financial assistance application follows in section V., M.

M. The following strategies are in place for monitoring and improving the effectiveness and efficiency of water conservation at Brandon-Irene Water Supply Corporation.

- BIWSC will continue maintaining accurate records of leaks, repairs, and flushing logs.
- BIWSC will continue monitoring the meters regularly and compare to metered consumption to determine distribution loss. Records regarding meter replacement will be maintained and examined annually. Meter replacement needs will be considered as field technicians and office staff issue and complete the need to re-read any particular meter. BIWSC will work diligently to make sure the most accurate meter for each type of connection is in place.
- Field technicians will monitor for leaks on a daily basis at water storage locations and distribution lines.
- Broken water lines will be repaired as quickly as possible. At least one field technician will be responsible for answering calls 24/7. A reduction of water pressure will be used to reduce the water loss if the repair cannot be achieved in a timely manner.
- Water loss accounting will be evaluated by the board on a monthly basis, and office personnel will complete reports, such as the Annual Water Loss Audit required by the Texas Water Development Board, and will present the data to the board on an annual basis.
- Leak detection and repair will be recorded and a cumulative report will be created by office personnel and presented to the board on a monthly and annual basis. The report will include the number of leaks, locations, estimated loss of water, and estimated loss due to flushing.
- The board will continue to evaluate the cost of water production and the water rate for retail customers and will make adjustments as needed.
- Public education about conservation will updated on a regular basis on the website.
- Drinking Water State Revolving Fund application: March 7, 2025

Brandon-Irene Water Supply Corporation has prepared an application that will be submitted to the Texas Water Development Board, requesting financial assistance in the amount of $4,106,843,000. The money will be used to replace 9.6 miles of water lines where the water supply is experiencing a severe water loss, resulting in an approximate 65% water loss to the system and an approximate financial loss of over $500,000 annually. The project includes four construction sites where water mains need to be replaced to reduce water loss due to leaks. The project will 21,000 LF of 8" PVC water main, 10,900 LF of 6" PVC water main, and 19,450 LF of 4" water main. The project will require multiple tie-in, gate valves, driveway bores, driveway gravel replacements, flush valves, and meter service reconnects. Childress Engineers, LLC, of Cleburne, Texas, has prepared the scope and description of work and the cost of the project. Following are the plans provided by Ben Shanklin, a professional engineer with Childress Engineers.

#5 - FM 1243 and HCR 3138N 2/8/2025

Engineer's Opinion of Probable Construction Cost

	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL PRICE
1	6" PVC CL200 Water Main	3,600		$55.00	$198,000.00
2	4" PVC CL 200 Water Main	15,400		$50.00	$770,000.00
3	6" x 4" Tie-ins	6		$2,500.00	$15,000.00
6	6" Gate Valves	2		$2,900.00	$5,800.00
7	4" Gate Valves	8		$2,400.00	$19,200.00
8	8" Casing by Boring	90		$160.00	$14,400.00
9	4" Driveway Bore Only	20		$90.00	$1 ,800.oo
10	Gravel Drive Replacement	300		$40.00	$12,000.00
12	1 " Air Valves	5		$2,850.00	$14,250.00

13	Meter Service Reconnects	14		$1 ,100.00	$15,400.00
	CONSTRUCTION SUBTOTAL				**$1,065,850.00**
	CONTINGENCY				$106,585.oo
	CONSTRUCTION TOTAL				**$1,172,435.00**
	ENGINEERING & SURVEYING				$95,927.00
	RIGHT OF WAY				$7,700.00
	ESTIMATED TOTAL PROJECT COST				**$1,276,062.00**

This document is released for the purpose of providing a preliminary budget construction cost estimate and agreement for engineering services under the authority of Benjamin S. Shanklin, P.E. 58726 on February 8, 2025. It is not to be used for construction, bidding or permitting purposes.

2/8/25

Benjamin S. Shankiin, P.E. Date

#8 HCR 3406 6" I

Engineer s Opinion of Probable Construction Cost

	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL PRICE
1	6" PVC CL 200 Water Main	7,200		$55.00	$396,000.00
2	6" x 4" Tie-Ins	2		$2,500.00	$5,000.00
4	6" Gate Valves	2		$2,900.00	$5,800.00
5	4" Gate Valves	1		$2,400.00	$2,400.00
6	6" Directional Bore	200		$90.00	$18,000.00
7	Gravel Drive Replacement	45		$40.00	$1 ,800.oo
8	1 II Air Valves	2		$2,850.00	$5,700.00
9	Meter Service Reconnects	3		$1 ,100.00	$3,300.00

CONSTRUCTION SUBTOTAL	$438,000.00
10% CONTINGENCY	$43,800.00
CONSTRUCTION TOTAL	$481 ,800.oo
ENGINEERING & SURVEYING	$39,420.00
RIGHT OF WAY	$7,200.00
ESTIMATED TOTAL PROJECT COST	$528,420.00

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Benjamin S. Shankiin, P.E.

Date

#12 Hwy 22 8"

Engineer's Opinion of Probable Construction Cost

Benjamin S. Shanklin, P.E. Date

	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL PRICE
1	8" PVC CL200 Water Main	21 ,ooo		$72.00	$1,512,000.00
2	6" PVC CL 200 Water Main	100		$55.00	$5,500.00

3	8" x 6" Tie-ins	1		$3,000.00	$3,000.00
4	8" x 4" Tie-Ins	2		$2,500.00	$5,000.00
5	8" Gate Valves	6		$4,500.00	$27,000.00
6	6" Gate Valves	1		$2,900.00	$2,900.00
7	4" Gate Valves	3		$2,400.00	$7,200.00
8	14" Casing by Boring	140		$250.00	$35,000.00
9	8" Driveway Bore Only	60		$120.00	$7,200.00
10	Gravel Drive Replacement	300		$40.00	$12,000.00
11	2' Flush Valves	1		$2,000.00	$2,000.00
12	1" Air Valves	3		$2,850.00	$8,550.00
13	Meter Service Reconnects	19		$1 , 100.00	$20,900.00
	CONSTRUCTION SUBTOTAL				**$1,648,250.00**
	10% CONTINGENCY				$164,825.00
	CONSTRUCTION TOTAL				**$1,813,075.00**
	ENGINEERING & SURVEYING				$148,343.00
	EASEMENTS/RIGHT OF WAY				$12,500.00
	ESTIMATED TOTAL PROJECT COST				**$1,973,918.00**

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#14 HCR 3402 4"

Engineer's Opinion of Probable Construction Cost

	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL PRICE
1	4" PRV and Concrete Vault	1	LF	$35,000.00	$35,000.00
2	4" PVC CL 200 Water Main	4,050		$50.00	$202,500.00
3	4" x 8" Tie-ins			$3,000.00	$3,000.00
4	4" Gate Valves	2		$2,400.00	$4,800.00
5	8" Casing by Boring	120		$160.00	$19,200.00
6	Gravel Drive Replacement	50		$40.00	$2,000.00
7	2" Flush Valves	1		$2,000.00	$2,000.00
8	Meter Service Reconnects	3		$1 , 100.00	$3,300.00
	CONSTRUCTION SUBTOTAL				$271 ,800.oo
	10% CONTINGENCY				$27,180.00
	CONSTRUCTION TOTAL				$298,980.00
	ENGINEERING & SURVEYING				$24,462.00
	EASEMENTS/RIGHT OF WAY				$5,000.00
	ESTIMATED TOTAL PROJECT COST				$328,442.00

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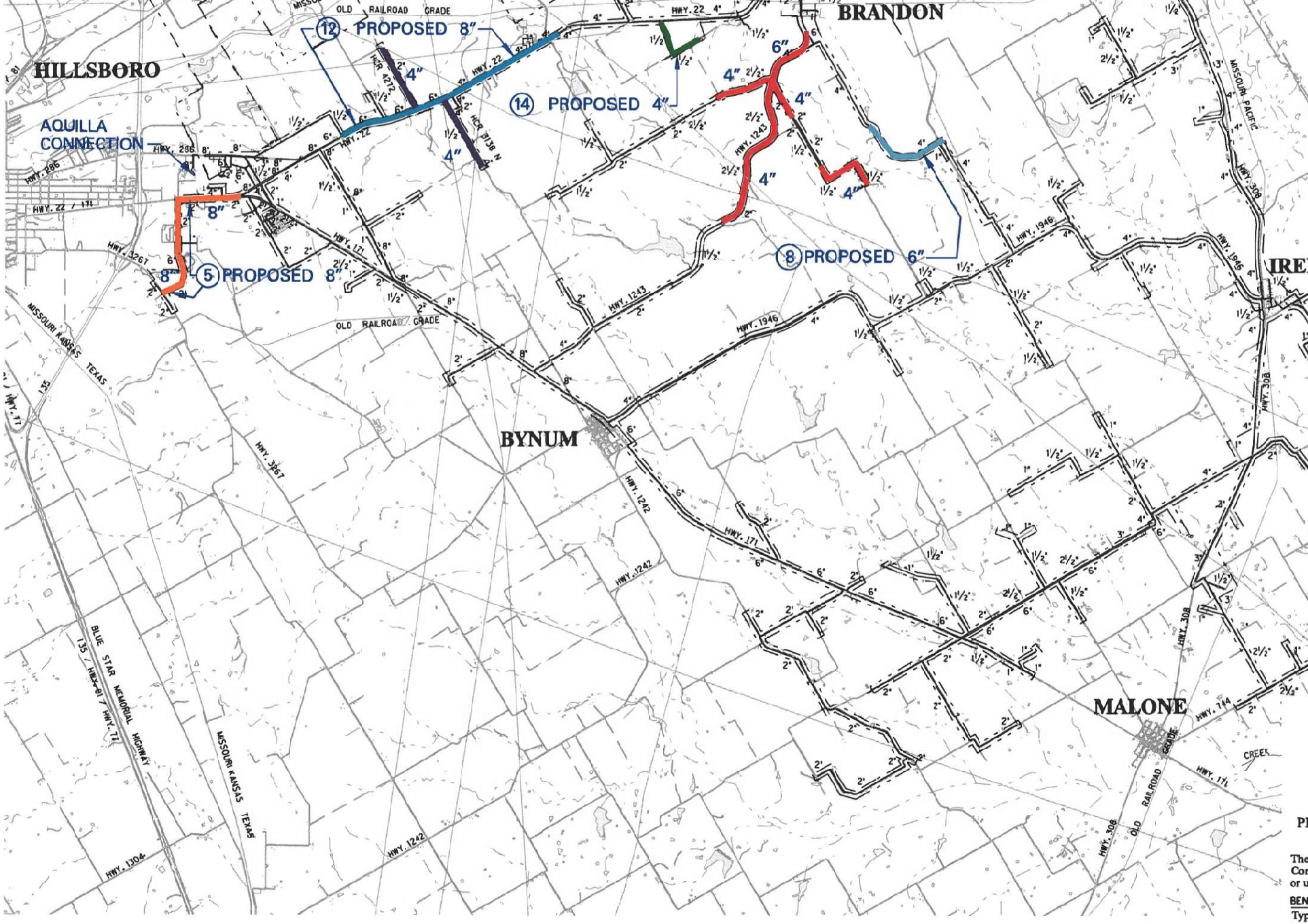
Benjamin S. Shanklin, P.E. 2/8/25

Benjamin S. Shanklin, P.E. Date


HILLSBORO
BRANDON
BYNUM
MALONE
AQUILLA CONNECTION
12 PROPOSED 8"
14 PROPOSED 4"
5 PROPOSED 8"
8 PROPOSED 6"
HWY. 22
HWY. 286
HWY. 171
HWY. 1243
HWY. 1946
HWY. 3267
HWY. 1242
HWY. 308
HWY. 744
HWY. 1304
OLD RAILROAD GRADE
MISSOURI KANSAS TEXAS
MISSOURI PACIFIC
BLUE STAR MEMORIAL HIGHWAY
135 / HWY-81 / HWY. 77