

5.12 Grimes County Water Supply Plan

Table 5.12-1 lists each water user group in Grimes County and their corresponding surplus or shortage in years 2040 and 2070. A brief summary of the water user groups and the plan for the selected water user are presented in the following subsections.

Table 5.12-1. Grimes County Surplus/(Shortage)

Water User Group	Surplus/(Shortage)		Comment
	2040 (acft/yr)	2070 (acft/yr)	
Dobbin Plantersville WSC	54	67	Projected surplus
G&W WSC	42	59	Projected surplus
City of Navasota	546	403	Projected surplus
TDCJ Luther Units	496	445	Projected surplus
TDCJ W. Pack Unit	178	107	Projected surplus
Wickson Creek SUD			See Brazos County
County-Other	53	122	Projected surplus
Manufacturing	142	213	Projected surplus
Steam-Electric	5,046	5,046	Projected surplus
Mining	(281)	62	Projected shortage - see plan below.
Irrigation	(151)	(151)	Projected shortage - see plan below.
Livestock	0	0	No projected surplus or shortage

5.12.1 Dobbin-Plantersville WSC

Dobbin Plantersville WSC serves customers in Grimes and Montgomery counties. The majority of the demand for the entity is in Montgomery County which is part of Region H. This section will only deal with the supply, demands and strategies that are within the Brazos G Area. Dobbin-Plantersville WSC obtains water supply through groundwater production from the Gulf Coast Aquifer, which is projected to provide 301 acft/yr in available supply. No water supply shortages are projected and no changes in water supply are recommended. Conservation was also considered; however, the entity's usage is below the selected goal of 140 gpcd.

5.12.2 G&W WSC

G&W WSC serves customers in Grimes and Waller counties. The majority of the demand for the entity is in Waller County which is part of Region H. This section will only deal with the supply, demands and strategies that are the Brazos G Area. G & W WSC obtains water supply through groundwater production from the Gulf Coast Aquifer and through purchases of treated surface water from a supplier in in Region H. Total water supply available to G&W WSC is projected to range from 858 acft/yr at the beginning of the planning period to 2,256 acft/yr at the end. No shortages in supply are projected through

the planning period. No changes in water supply are recommended. Conservation was also considered; however, the entity’s usage is below the selected goal of 140 gpcd.

5.12.3 City of Navasota

Description of Supply

The City of Navasota obtains its water supply solely through groundwater production from the Gulf Coast Aquifer, which is projected to provide 2,153 acft/yr of supply. Additionally, the City provides a portion of supply under contract to Grimes County Manufacturing. No shortages are projected for the City through the planning period and no change to supply is recommended.

Water Supply Plan

Working within the planning criteria established by the Brazos G RWPG and TWDB, the following water management strategy is recommended for City of Navasota. Conservation is recommended to reduce usage to a goal of 140 gpcd.

- a. Conservation:
 - Cost Source: Volume II
 - Date to be Implemented: before 2030
 - Annual Cost: maximum of \$135,520
 - Unit Cost: \$560/acft

Table 5.12-2. Recommended Plan Costs by Decade for City of Navasota

Plan Element	2020	2030	2040	2050	2060	2070
<i>Projected Surplus/(Shortage) (acft/yr)</i>	565	553	546	525	474	403
Conservation						
Supply From Plan Element (acft/yr)	—	110	219	236	238	242
Annual Cost (\$/yr)	—	\$61,600	\$122,640	\$132,160	\$133,280	\$135,520
<i>Projected Surplus/(Shortage) after Conservation (acft/yr)</i>	565	663	765	761	712	645

5.12.4 TDCJ - Luther Units

Description of Supply

The Texas Department of Criminal Justice – Luther Units obtains its water supply through groundwater production from the Gulf Coast Aquifer, which is projected to provide 825 acft/yr of supply. No shortages are projected for the WUG through the planning period.

Water Supply Plan

Working within the planning criteria established by the Brazos G RWPG and TWDB, the following water management strategy is recommended for TDCJ – Luther Units. Conservation s recommended to reduce usage to a goal of 140 gpcd.

a. Conservation:

- Cost Source: Volume II
- Date to be Implemented: before 2030
- Annual Cost: maximum \$36,960 in 2070
- Unit Cost: \$560/acft

Table 5.12-3. Recommended Plan Costs by Decade for TDCJ – Luther Units

Plan Element	2020	2030	2040	2050	2060	2070
<i>Projected Surplus/(Shortage) (acft/yr)</i>	536	514	496	477	460	445
Conservation						
Supply From Plan Element (acft/yr)	—	25	54	61	64	66
Annual Cost (\$/yr)	—	\$14,000	\$30,240	\$34,160	\$35,840	\$36,960
<i>Projected Surplus/(Shortage) after Conservation (acft/yr)</i>	536	539	550	538	524	511

5.12.5 TDCJ – W. Pack Unit

Description of Supply

The Texas Department of Criminal Justice – W. Pack Unit obtains its water supply through groundwater production from the Gulf Cost Aquifer, which is projected to provide 631 acft/yr of supply. No shortages are projected for the WUG through the planning period.

Water Supply Plan

Working within the planning criteria established by the Brazos G RWPG and TWDB, the following water management strategy is recommended for TDCJ – W. Pack Unit. Conservation s recommended to reduce usage to a goal of 140 gpcd.

a. Conservation:

- Cost Source: Volume II
- Date to be Implemented: before 2030
- Annual Cost: maximum of \$92,960
- Unit Cost: \$560/acft

Table 5.12-4. Recommended Plan Costs by Decade for TDCJ – W. Pack Unit

Plan Element	2020	2030	2040	2050	2060	2070
<i>Projected Surplus/(Shortage) (acft/yr)</i>	234	202	178	151	127	107
Conservation						
Supply From Plan Element (acft/yr)	—	36	75	116	159	166
Annual Cost (\$/yr)	—	\$20,160	\$42,000	\$64,960	\$89,040	\$92,960
<i>Projected Surplus/(Shortage) after Conservation (acft/yr)</i>	234	238	253	267	286	273

5.12.6 County-Other

Entities comprising Grimes County-Other obtain water supply through groundwater production from the Gulf Coast and Carrizo-Wilcox Aquifers in the county, which when combined is projected to provide 1,251 acft/yr of available supply. County-Other entities are projected to have a supply surplus of supply through planning period and no change to supply is recommended. Conservation was also considered; however, the entity’s usage is below the selected goal of 140 gpcd.

5.12.7 Manufacturing

Manufacturing operations in Grimes County obtain water supply through groundwater production from the Gulf Coast Aquifer and through purchases of groundwater from the City of Navasota and Wickson Creek SUD. No shortages are projected and no change in supply is recommended.

5.12.8 Steam-Electric

Grimes County Steam-Electric obtains water supply primarily through purchases of raw water under from the City of Huntsville and the Brazos River Authority. Groundwater production from the Gulf Coast Aquifer is also used, though the quantity is relatively small compared to the surface water supplies. No supply shortages are projected for Steam-Electric entities and no change in water supply is recommended.

5.12.9 Mining

Description of Supply

Mining operations in Grimes County are supplied by groundwater from the Gulf Coast Aquifer. Demands for Mining are projected to increase resulting in shortages beginning in 2020.

Water Supply Plan

Working within the planning criteria established by the Brazos G RWPG and TWDB, the following water management strategies are recommended to meet water needs for Grimes County-Mining. Conservation is recommended.

- a. Conservation
 - Cost Source: Volume II
 - Date to be Implemented: before 2030
 - Annual Cost: not determined
- b. Gulf Coast Aquifer Groundwater Development
 - Cost Source: Volume II
 - Date to be Implemented: before 2030
 - Project Cost: \$744,000
 - Unit Cost: maximum of \$168/acft

Table 5.12-5. Recommended Plan Costs by Decade for Grimes County – Mining

Plan Element	2020	2030	2040	2050	2060	2070
<i>Projected Surplus/(Shortage) (acft/yr)</i>	(133)	(412)	(281)	(150)	(19)	62
Conservation						
Supply From Plan Element (acft/yr)	10	30	33	24	15	9
Annual Cost (\$/yr)	ND	ND	ND	ND	ND	ND
<i>Projected Surplus/(Shortage) after Conservation (acft/yr)</i>	(123)	(382)	(248)	(126)	(4)	71
Groundwater Development – Gulf Coast Aquifer						
Supply From Plan Element (acft/yr)	382	382	382	382	382	382
Annual Cost (\$/yr)	\$64,000	\$64,000	\$12,000	\$12,000	\$12,000	\$12,000
Unit Cost (\$/acft)	\$168	\$168	\$31	\$31	\$31	\$31

ND – Not determined. Costs to implement industrial conservation technologies will vary based on each location

5.12.10 Irrigation

Description of Supply

Irrigation in Grimes County is supplied through groundwater production from the Gulf Coast, Brazos River Alluvium, and Navasota River Alluvium Aquifers. Water supply shortages are projected in each decade of the planning period for Irrigation.

Water Supply Plan

Working within the planning criteria established by the Brazos G RWPG and TWDB, the following water management strategies are recommended to meet water needs for Grimes County-Irrigation.

- a. Conservation
 - Cost Source: Volume II
 - Date to be Implemented: before 2030
 - Annual Cost: maximum of \$64,357
 - Unit Cost: \$1,376/acft
- b. Gulf Coast Aquifer Groundwater Development
 - Cost Source: Volume II
 - Date to be Implemented: before 2030
 - Project Cost: \$623,000
 - Unit Cost: maximum of \$382/acft

Table 5.12-6. Recommended Plan Costs by Decade for Grimes County – Irrigation

Plan Element	2020	2030	2040	2050	2060	2070
<i>Projected Surplus/(Shortage) (acft/yr)</i>	(151)	(151)	(151)	(151)	(151)	(151)
Conservation						
Supply From Plan Element (acft/yr)	20	33	47	47	47	47
Annual Cost (\$/yr)	\$27,582	\$45,970	\$64,357	\$64,357	\$64,357	\$64,357
<i>Projected Surplus/(Shortage) after Conservation (acft/yr)</i>	(131)	(118)	(104)	(104)	(104)	(104)
Groundwater Development – Gulf Coast Aquifer						
Supply From Plan Element (acft/yr)	131	131	131	131	131	131
Annual Cost (\$/yr)	\$50,000	\$50,000	\$6,000	\$6,000	\$6,000	\$6,000
Unit Cost (\$/acft)	\$382	\$382	\$46	\$46	\$46	\$46

5.12.11 Livestock

Livestock in Grimes County is supplied through local stock surface water impoundments. No shortage is projected during the planning period and no change in water supply is recommended.