5.16 Hood County Water Supply Plan

Table 5.16-1 lists each water user group in Hood 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 5.16-1. Hood County Surplus/(Shortage)

Water User Group	Surplus/(Shortage)		Comment
	2040 (acft/yr)	2070 (acft/yr)	
Acton MUD	(1,126)	(4,203)	Projected shortage - see plan below
City of Granbury	144	(342)	Projected shortage - see plan below
City of Lipan	33	9	Projected surplus
Santo SUD			See Palo Pinto County
City of Tolar	41	4	Projected surplus
County-Other	(759)	924	Projected surplus
Manufacturing	10,008	10,008	Projected surplus
Steam-Electric	0	0	No projected surplus or shortage
Mining	(821)	(656)	Projected shortage - see plan below
Irrigation	417	417	Projected surplus
Livestock	0	0	No projected surplus or shortage

5.16.1 Acton MUD

Description of Supply

The Acton MUD service area includes portions of Hood and Johnson Counties. Acton MUD obtains its water supply from groundwater from the Trinity Aquifer and a contract with the Brazos River Authority for water from Lake Granbury. Treated surface water is constrained by the SWATS plant capacity, co-owned with Johnson County SUD through the Brazos Regional Public Utility Agency. The surpluses and shortages shown in Table 5.16-2 represent the cumulative totals for Acton MUD in Hood and Johnson Counties.

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 the projected water shortage for Acton MUD. Conservation was considered; however, the entity's usage is below the selected goal of 140 gpcd.

a. Groundwater Development – Trinity Aquifer

- Cost Source: Volume II
- Date to be implemented: by 2030

- Project Cost: $965,000
- Annual Cost: $89,000

b. Increase WTP Capacity (SWATS):

- Cost Source: Volume II
- Date to be Implemented: by 2040
- Project Cost: $23,934,000 (Acton MUD portion)
- Annual Cost: $2,611,000

c. Trinity Johnson County ASR

- Cost Source: Volume II
- Date to be Implemented: by 2020
- Project Cost: $17,296,000 (Acton MUD portion)
- Unit Cost: $662/acft

Table 5.16-2. Recommended Plan Costs by Decade for Acton MUD

Plan Element	2020	2030	2040	2050	2060	2070
Projected Surplus/(Shortage) (acft/yr)	*1,546*	*(50)*	*(1,126)*	*(1,708)*	*(2,933)*	*(4,203)*
Conservation						
Supply From Plan Element (acft/yr)	—	—	—	—	—	—
Annual Cost ($/yr)	—	—	—	—	—	—
Projected Surplus/(Shortage) after Conservation (acft/yr)	*1,546*	*(50)*	*(1,126)*	*(1,708)*	*(2,933)*	*(4,203)*
Groundwater Development – Trinity Aquifer (Hood and Johnson Counties)						
Supply From Plan Element (acft/yr)	—	51	51	51	51	451
Annual Cost ($/yr)	—	$89,000	$89,000	$21,000	$21,000	$185,812
Unit Cost ($/acft)	—	$1,745	$1,745	$412	$412	$412
Increase WTP Capacity (SWATS)						
Supply From Plan Element (acft/yr)	—	—	3,752	3,752	3,752	3,752
Annual Cost ($/yr)	—	—	$2,611,400	$2,611,400	$1,091,800	$1,091,800
Unit Cost ($/acft)	—	—	$696	$696	$291	$291
Alternative: Johnson County ASR						
Supply From Plan Element (acft/yr)	2,526	2,526	2,526	2,526	2,526	2,526
Annual Cost ($/yr)	$1,672,212	$1,672,212	$454,680	$454,680	$454,680	$454,680
Unit Cost ($/acft)	$662	$662	$180	$180	$180	$180

5.16.2 City of Granbury

Description of Supply

The City of Granbury obtains its water supply from groundwater from the Trinity Aquifer and a contract with the Brazos River Authority for water from Lake Granbury. There is a water treatment plant constraint on the surface water from Lake Granbury, and a water supply shortage is projected beginning in 2050.

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 the projected water shortage for Granbury. Conservation was considered; however, the entity's usage is below the selected goal of 140 gpcd.

a. Granbury North Water Treatment Plant:

- Cost Source: Volume II
- Date to be Implemented: by 2030
- Project Cost: $45,500,000
- Annual Cost: $7,155,000 (maximum of phased costs)

Table 5.16-3. Recommended Plan Costs by Decade for the City of Granbury

Plan Element	2020	2030	2040	2050	2060	2070
Projected Surplus/(Shortage) (acft/yr)	*673*	*365*	*144*	*(55)*	*(216)*	*(342)*
Conservation						
Supply From Plan Element (acft/yr)	—	—	—	—	—	—
Annual Cost ($/yr)	—	—	—	—	—	—
Projected Surplus/(Shortage) after Conservation (acft/yr)	*673*	*365*	*144*	*(55)*	*(216)*	*(342)*
Granbury North Water Treatment Plant						
Supply From Plan Element (acft/yr)	—	2,800	2,800	2,800	2,800	2,800
Annual Cost ($/yr)	—	$7,155,000	$7,155,000	$3,954,000	$3,954,000	$3,954,000
Unit Cost ($/acft)	—	$2,555	$2,555	$1,412	$1,412	$1,412

5.16.3 City of Lipan

The City of Lipan receives supply from the Trinity Aquifer. There is a surplus projected for the City throughout the planning period and no changes in water supply are recommended. Conservation was considered; however, the entity's usage is below the selected goal of 140 gpcd.

5.16.4 City of Tolar

The City of Lipan receives supply from the Trinity Aquifer. There is a surplus projected for the City throughout the planning period and no changes in water supply are recommended. Conservation was considered; however, the entity's usage is below the selected goal of 140 gpcd.

5.16.5 County-Other

Description of Supply

Entities in Hood County-Other receive groundwater from the Trinity Aquifer and surface water supplies through contracts with Acton MUD. Future population in County-Other is expected to decrease over time as those people begin to be served by retail water utilities. Shortages are projected from 2020 through 2050.

Water Supply Plan

Working within the planning criteria established by the Brazos G RWPG and TWDB, the following water management strategy is recommended to meet water needs for County-Other entities. Conservation was considered; however, the entity's usage is below the selected goal of 140 gpcd.

a. Trinity Aquifer Development

- Cost Source: Volume II
- Date to be Implemented: before 2030
- Project Cost: $6,210,000
- Unit Cost: $435/acft

Table 5.16-4. Plan Costs by Decade for Hood County – Other

Plan Element	2020	2030	2040	2050	2060	2070
Projected Surplus/(Shortage) (acft/yr)	*(1,845)*	*(1,135)*	*(759)*	*(687)*	*77*	*924*
Conservation						
Supply From Plan Element (acft/yr)	—	—	—	—	—	—
Annual Cost ($/yr)	—	—	—	—	—	—
Projected Surplus/(Shortage) after Conservation (acft/yr)	*(1,845)*	*(1,135)*	*(759)*	*(687)*	*77*	*924*
Trinity Aquifer Development						
Supply From Plan Element (acft/yr)	1,845	1,845	1,845	1,845	1,845	1,845
Annual Cost ($/yr)	$803,000	$803,000	$366,000	$366,000	$366,000	$366,000
Unit Cost ($/acft)	$435	$435	$198	$198	$198	$198

5.16.6 Manufacturing

Hood County Manufacturing obtains treated water from the Trinity Aquifer untreated surface water from the BRA. Hood County Manufacturing is projected to have a surplus of water through the year 2070 and no changes in water supply are recommended.

5.16.7 Steam-Electric

Steam-Electric operations in Hood County are supplied by water from Lake Granbury. No shortages are projected and no change in water supply is recommended.

5.16.8 Mining

Description of Supply

Mining operations in Hood County are supplied by Trinity Groundwater. Demands for Mining are projected to increase significantly, resulting in shortages beginning in 2020.

Recommended Strategy

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 Hood County-Mining. Conservation is recommended.

a. Conservation
   - Cost Source: Volume II
   - Date to be Implemented: before 2030
   - Annual Cost: not determined

b. Groundwater Development – Trinity Aquifer
   - Cost Source: Volume II
   - Date to be Implemented: before 2030
   - Project Cost: $1,027,000
   - Unit Cost: Max of $112/acft

Table 5.16-5. Recommended Plan Costs by Decade for Hood County – Mining

Plan Element	2020	2030	2040	2050	2060	2070
Projected Surplus/(Shortage) (acft/yr)	*(677)*	*(1,035)*	*(821)*	*(732)*	*(642)*	*(656)*
Conservation						
Supply From Plan Element (acft/yr)	62	122	156	149	143	144
Annual Cost ($/yr)	ND	ND	ND	ND	ND	ND
Projected Surplus/(Shortage) after Conservation (acft/yr)	*(615)*	*(913)*	*(665)*	*(583)*	*(499)*	*(512)*
Groundwater Well Development – Trinity Aquifer						
Supply From Plan Element (acft/yr)	913	913	913	913	913	913
Annual Cost ($/yr)	$102,000	$102,000	$30,000	$30,000	$30,000	$30,000
Unit Cost ($/acft)	$112	$112	$33	$33	$33	$33

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

5.16.9 Irrigation

Hood County Irrigation is projected to have a surplus of 417 acft/yr through 2070. No changes in water supply are recommended.

Table 5.16-6. Recommended Plan Costs by Decade for Hood County – Irrigation

Plan Element	2020	2030	2040	2050	2060	2070
Projected Surplus/(Shortage)	417	417	417	417	417	417
BRA System Operation Surplus						
Supply from Plan Element (acft/yr)	774	774	774	774	774	774
Annual Cost ($/yr)	$58,824	$58,824	$58,824	$58,824	$58,824	$58,824
Unit Cost ($/acft)	$76	$76	$76	$76	$76	$76

5.16.10 Livestock

Livestock water supply is projected to meet demands through 2070 and no changes in water supply are recommended.