Attachment 1.

Analysis of GMA-12 Water Budgets

Planning Scenario 4 (PS-4)

Prepared by Environmental Stewardship

Simsboro Aquifer	Lost Pines GCD	Acre-feet per Year*				Net Change over period		
	Description	Calibration Period		DFC Period				
Technical	Layman	1975	1999	2000	2070	Calibration	DFC	Total
Recharge	To(+) aquifer	5,000	25,000	5,000	5,000	20,000	0	20,000
Et	From(-) Evapotranspiration	0	0	0	-2,500	0	-2,500	-2,500
Storage Change	To(-)/from(+) storage	18,000	8,000	8,000	25,000	-10,000	17,000	7,000
Stream leakage	To(-)/from(+) surface waters	-15,000	-4,000	-2,000	12,000	11,000	14,000	25,000
Drains	To(-)/from(+) springs	-2,500	0	0	0	2,500	0	2,500
Verticle Leakage	To(-)/from(+) other aquifers	1,000	3,000	3,000	20,000	2,000	17,000	19,000
Lateral Leakage	To(-)/from(+) POS	-2,000	0	-4,000	-17,000	2,000	-13,000	-11,000
Wells	Pumping	-2,500	-13,000	-22,000	-58,000	-10,500	-36,000	-46,500
Slide # 79	**Net:**	2,000	19,000	-12,000	-15,500	17,000	-3,500	13,500

* All values are extrapolated from graph and are estimates of the actual GAM values

Simsboro Aquifer	Post Oak Savannah GCD	Acre-feet per Year*				Net Change over period		
	Description	Calibration Period		DFC Period				
Technical	Layman	1975	1999	2000	2070	Calibration	DFC	Total
Recharge	To(+) aquifer	13,000	10,000	12,000	12,000	-3,000	0	-3,000
Et	From(-) Evapotranspiration	0	0	0	0	0	0	0
Storage Change	To(-)/from(+) storage	22,000	28,000	30,000	30,000	6,000	0	6,000
Stream leakage	To(-)/from(+) surface waters	-30,000	-12,000	-8,000	10,000	18,000	18,000	36,000
Drains	To(-)/from(+) springs	0	0	0	0	0	0	0
Verticle Leakage	To(-)/from(+) other aquifers	2,000	4,500	4,500	27,000	2,500	22,500	25,000
Lateral Leakage	To(-)/from(+) other districts	-7,000	-11,000	-18,000	-25,000	-4,000	-7,000	-11,000
Wells	Pumping	-2,000	-22,000	-25,000	-71,000	-20,000	-46,000	-66,000
	Net:	-2,000	-2,500	-4,500	-17,000	-500	-12,500	-13,000

* All values are extrapolated from graph and are estimates of the actual GAM values

Simsboro Aquifer	Brazos Valley GCD	Acre-feet per Year*				Net Change over period		
	Description	Calibration Period		DFC Period				
Technical	Layman	1975	1999	2000	2070	Calibration	DFC	Total
Recharge	To(+) aquifer	7,500	4,000	5,000	5,000	-3,500	0	-3,500
Et	From(-) Evapotranspiration	2,000	3,000	0	0	1,000	0	1,000
Storage Change	To(-)/from(+) storage	17,000	17,000	10,000	12,000	0	2,000	2,000
Stream leakage	To(-)/from(+) surface waters	-18,000	-6,000	-6,000	-2,000	12,000	4,000	16,000
Drains	To(-)/from(+) springs	0	0	0	0	0	0	0
Verticle Leakage	To(-)/from(+) other aquifers	6,000	13,000	13,000	33,000	7,000	20,000	27,000
Lateral Leakage	To(-)/from(+) other districts	2,000	7,000	7,000	41,000	5,000	34,000	39,000
Wells	Pumping			-45,000	-111,000	0	-66,000	-66,000
	Net:	16,500	38,000	-16,000	-22,000	21,500	-6,000	15,500

* All values are extrapolated from graph and are estimates of the actual GAM values

Simsboro Aquifer	Fayette County GCD	Acre-feet per Year*				Net Change over period		
	Description	Calibration Period		DFC Period				
Technical	Layman	1975	1999	2000	2070	Calibration	DFC	Total
Recharge	To(+) aquifer	0	0	0	0	0	0	0
Et	From(-) Evapotranspiration	-50	-50	0	0	0	0	0
Storage Change	To(-)/from(+) storage	0	50	50	50	50	0	50
Stream leakage	To(-)/from(+) surface waters	0	0	0	0	0	0	0
Drains	To(-)/from(+) springs	0	0	0	0	0	0	0
Verticle Leakage	To(-)/from(+) other aquifers	200	700	400	4,200	500	3,800	4,300
Lateral Leakage	To(-)/from(+) other districts	-300	-500	-700	-4,500	-200	-3,800	-4,000
Wells	Pumping	0	0	0	0	0	0	0
	Net:	-150	200	-250	-250	350	0	350

* All values are extrapolated from graph and are estimates of the actual GAM values

Simsboro Aquifer	Mid-East Texas GCD	Acre-feet per Year*				Net Change over period		
	Description	Calibration Period		DFC Period				
Technical	Layman	1,975	1,999	2,000	2,070	Calibration	DFC	Total
Recharge	To(+) aquifer	12,000	6,000	10,000	10,000	-6,000	0	-6,000
Et	From(-) Evapotranspiration	-1,000	-1,000	-1,000	-1,000	0	0	0
Storage Change	To(-)/from(+) storage	21,000	4,000	2,500	1,000	-17,000	-1,500	-18,500
Stream leakage	To(-)/from(+) surface waters	-30,000	-8,000	-8,000	-7,000	22,000	1,000	23,000
Drains	To(-)/from(+) springs	0	0	0	0	0	0	0
Verticle Leakage	To(-)/from(+) other aquifers	2,500	4,000	5,500	12,000	1,500	6,500	8,000
Lateral Leakage	To(-)/from(+) other districts	0	1,000	2,000	-11,000	1,000	-13,000	-12,000
Wells	Pumping	-2,000	-3,000	-9,000	-4,000	-1,000	5,000	4,000
	Net:	2,500	3,000	2,000	0	500	-2,000	-1,500

* All values are extrapolated from graph and are estimates of the actual GAM values

Simsboro Aquifer	GCD's Consolidated	Acre-feet per Year*				Net Change over period		
	Description	Calibration Period		DFC Period				
Technical	Layman	1975	1999	2000	2070	Calibration	DFC	Total
Recharge	To(+) aquifer	37,500	45,000	32,000	32,000	7,500	0	7,500
Et	From(-) Evapotranspiration	950	1,950	-1,000	-3,500	1,000	-2,500	-1,500
Storage Change	To(-)/from(+) storage	78,000	57,050	50,550	68,050	-20,950	17,500	-3,450
Stream leakage	To(-)/from(+) surface waters	-93,000	-30,000	-24,000	13,000	63,000	37,000	100,000
Drains	To(-)/from(+) springs	-2,500	0	0	0	2,500	0	2,500
Verticle Leakage	To(-)/from(+) other aquifers	11,700	25,200	26,400	96,200	13,500	69,800	83,300
Lateral Leakage	To(-)/from(+) other districts	-7,300	-3,500	-13,700	-16,500	3,800	-2,800	1,000
Wells	Pumping	-6,500	-38,000	-101,000	-244,000	-31,500	-143,000	-174,500
	Net:	18,850	57,700	-30,750	-54,750	38,850	-24,000	14,850

* All values are extrapolated from graph and are estimates of the actual GAM values

OBSERVATIONS: Lost Pines GCD

1 Outflow to surface water decreased by 11,000 ac-ft/yr during calibration and another 14,000 during DFC; a total of 25,000 ac-ft/yr
2. Outflow to surface water ceases about 2060
3. Storage increased during calibration period and decreases during DFC (drawdown)
4. Verticle leakage into Simsbor increases significantly during DFC period
5. Lateral flow out of Districtt decreased slightly during calibration but increases significantly during DFC period (net outflow from District).
6. Pumping increased during calibration and increases significantly during DFC period (total 2070 pumping is 58,000 ac-ft/yr).

OBSERVATIONS: Post Oak Savannah GCD

1 Outflow to surface water decreased by 18,000 ac-ft/yr during calibration and another 18,000 during DFC; a total of 36,000 ac-ft/yr
2. Outflow to surface water ceases about 2020
3. Storage decreased during calibration period and is neutral during DFC (drawdown)
4. Verticle leakage into Simsbor increases significantly during DFC period
5. Lateral flow out of the District increases during calibration and continues increase significantly during DFC period (net outflow from District).
6. Pumping increased sginificantly during calibration and increases significantly during DFC period (total 2070 pumping is 71,000 ac-ft/yr).

OBSERVATIONS: Brazos Valley GCD

1 Outflow to surface water decreased by 12,000 ac-ft/yr during calibration and another 4,000 during DFC; a total of 16,000 ac-ft/yr
2. Outflow to surface water remains near neutral
3. Storage is neutral during calibration period and decreases slightly during DFC (drawdown)
4. Verticle leakage into Simsbor increases significantly during DFC period
5. Lateral flow into District increases increased during calibration and increases very significantly during DFC period (net inflow to District).
6. Pumping is not recorded during calibration but increases very significantly during DFC period (total 2070 pumping is 111,000 ac-ft/yr).

OBSERVATIONS: Fayette County GCD

1 Outflow to surface water decrease is insignificant
2. Outflow to surface water does not change significantly
3. Storage is neutra during both periods.
4. Verticle leakage into Simsbor increases during DFC period
5. Lateral flow out of District is slight during calibration and increases moderately during DFC period (net outflow from District).
6. Pumping does not occur in Simsboro aquifer.

OBSERVATIONS: **Mid-East Texas GCD**

1 Outflow to surface water decreased by 22,000 ac-ft/yr during calibration and another 1,000 during DFC; a total of 23,000 ac-ft/yr
2. Outflow to surface water continues through both periods
3. Storage increased significantly during calibration period and only slightly during DFC (net increase)
4. Verticle leakage into Simsbor increases during DFC period
5. Lateral flow into District increased slightly during calibration but reverses during DFC period (net outflow from District).
6. Pumping increased slightly during calibration and DFC period (total 2070 pumping is 4,000 ac-ft/yr).

OBSERVATIONS: **GCD's Consolidated**

1 Outflow to surface water decreased by 63,000 ac-ft/yr during calibration and another37,000 during DFC; a total of 100,000 ac-ft/yr
2. Outflow to surface water ceases between 2020 (Post Oak) and 2060 (Lost Pines).
3. Storage increased during calibration period and decreases more significantly during DFC (drawdown)
4. Verticle leakage into Simsbor increases very significantly during DFC period
5. Lateral flow out of districts decreased slightly during calibration and increases slightly during DFC period (net outflow from District).
6. Pumping increased significanly during calibration and DFC period (total 2070 pumping is 244,000 ac-ft/yr).