

**Automated Check Structures and Control Systems in the Garwood Irrigation District, Cost Schedule**

<u>Strategy Category</u>	Volume of Water Available (acre-feet per year)	Suggested Conservation Charge	Net Present Value	Net Present Value per Total Water Delivered (\$)
Long Term, Phased (Base Case)	12,000	27.0%	\$7,664,411	\$17
Long Term, Expedited	12,000	44.0%	\$10,596,003	\$23
Short Term, With a Supplementary Well	1,900	32.0%	\$2,831,604	\$378
Short Term, Without a Supplementary Well	1,900	29.0%	\$2,617,483	\$349

General Notes:

The conservation charge is computed based on Williamson County reserving all 25,000 acre-feet, as per the Agreement. Additionally, the recommended conservation charge is the lowest percentage of the payment to LCRA that ensures the balance of the Ag fund is never negative.

**Automated Check Structures and Control Systems in the Garwood Irrigation District, Phased**

**Projected Water Usage of HB 1437 Alliance Water**

Note: Projections made for LCRA use in "No Net Loss" evaluations. All values are in acre-feet per year.

Entity (amount of Alliance Water contract)	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
CTSUD (3472 acft/yr)	-	-	-	-	-	600	760	920	1,080	1,240	1,400	1,560	1,720
Georgetown (6944 acft/yr)	-	-	-	-	-	-	-	-	-	-	-	-	-
Liberty Hill (600 acft/yr)	-	-	-	-	-	-	100	200	300	400	500	520	540
Round Rock (11,444 acft/yr)	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	-	-	-	-	-	<b>600</b>	<b>860</b>	<b>1,120</b>	<b>1,380</b>	<b>1,640</b>	<b>1,900</b>	<b>2,080</b>	<b>2,260</b>

Source of Water Demand: D.Wheelock, 4/19/04; Williamson Co Water Facilities Plan; personal correspondence.

<b>Cost Creep</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>
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Maximum Acre feet	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000
Normal Rate	\$105.00	\$105.00	\$105.00	\$105.00	\$105.00	\$115.00	\$115.00	\$115.00	\$115.00	\$115.00	\$115.00	\$115.00	\$115.00
Inverted Block Rate	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00
Reserve Charge Rate %	50.00%												
Conservation Charge %	27.00%	27.00%	27.00%	27.00%	27.00%	27.00%	27.00%	27.00%	27.00%	27.00%	27.00%	27.00%	27.00%

Check for Lowest Ag Fund Balance: 139,912

Reserve Charge Volume						24,400	24,140	23,880	23,620	23,360	23,100	22,920	22,740
Total Volume for Conservation Charge - Normal	-	-	-	-	-	600	860	1,120	1,380	1,640	1,900	2,080	2,260

Reserve Charge	\$0	\$0	\$0	\$0	\$1,403,000	\$1,388,050	\$1,373,100	\$1,358,150	\$1,343,200	\$1,328,250	\$1,317,900	\$1,307,550
Normal Usage Charge	\$0	\$0	\$0	\$0	\$69,000	\$98,900	\$128,800	\$158,700	\$188,600	\$218,500	\$239,200	\$259,900
<b>Water Charge to go to LCRA</b>	\$0	\$0	\$0	\$0	\$1,472,000	\$1,486,950	\$1,501,900	\$1,516,850	\$1,531,800	\$1,546,750	\$1,557,100	\$1,567,450
Reserve Charge to Conservation Charge (\$/1000 GAL) based on reserve volume	\$0	\$0	\$0	\$0	\$378,810	\$374,774	\$370,737	\$366,701	\$362,664	\$358,628	\$355,833	\$353,039
(\$/1000 GAL) based on demand					\$0.048	\$0.048	\$0.048	\$0.048	\$0.048	\$0.048	\$0.048	\$0.048
					\$1.938	\$1.337	\$1.016	\$0.816	\$0.679	\$0.579	\$0.525	\$0.479
Normal Usage Charge to Conservation Charge (\$/1000 GAL) based on demand	\$0	\$0	\$0	\$0	\$18,630	\$26,703	\$34,776	\$42,849	\$50,922	\$58,995	\$64,584	\$70,173
					\$0.095	\$0.095	\$0.095	\$0.095	\$0.095	\$0.095	\$0.095	\$0.095
<b>Conservation Charge to go to Ag Fund</b>	\$0	\$0	\$0	\$0	\$397,440	\$401,477	\$405,513	\$409,550	\$413,586	\$417,623	\$420,417	\$423,212

Management Cost Component	\$ 25,000
Monitoring Cost Component	\$ 25,000

**Automated Check Structures and Control Sys**  
**Projected Water Usage of HB 1437 Alliance W**  
 Note: Projections made for LCRA use in "No Net

Entity (amount of Alliance Water contract)	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
CTSUD (3472 acft/yr)	1,880	2,040	2,200	2,454	2,709	2,963	3,218	3,472	3,472	3,472	3,472	3,472	3,472		
Georgetown (6944 acft/yr)	-	-	-	-	-	-	-	-	-	-	-	-	-		
Liberty Hill (600 acft/yr)	560	580	600	600	600	600	600	600	600	600	600	600	600		
Round Rock (11,444 acft/yr)	2,051	4,266	6,658	9,241	11,444	11,444	11,444	11,444	11,444	11,444	11,444	11,444	11,444		
<b>Total</b>	<b>4,491</b>	<b>6,886</b>	<b>9,458</b>	<b>12,296</b>	<b>14,753</b>	<b>15,007</b>	<b>15,262</b>	<b>15,516</b>	15,832	16,148	16,464	16,781	<b>17,097</b>	17,413	17,729

0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
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Maximum Acre feet	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000
Normal Rate	\$115.00	\$115.00	\$115.00	\$115.00	\$115.00	\$115.00	\$115.00	\$115.00	\$115.00	\$115.00	\$115.00	\$115.00	\$115.00	\$115.00	\$115.00
Inverted Block Rate	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00
Reserve Charge Rate %	27.00%	27.00%	27.00%	27.00%	27.00%	27.00%	27.00%	27.00%	27.00%	27.00%	27.00%	27.00%	27.00%	27.00%	27.00%
Conservation Charge %	27.00%	27.00%	27.00%	27.00%	27.00%	27.00%	27.00%	27.00%	27.00%	27.00%	27.00%	27.00%	27.00%	27.00%	27.00%

Reserve Charge Volume	20,509	18,114	15,542	13,000	13,000	13,000	13,000	13,000	13,000	13,000	13,000	13,000	13,000	13,000	13,000
Total Volume for Conservation Charge - Normal	4,491	6,886	9,458	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000

Reserve Charge	\$1,179,275	\$1,041,565	\$893,667	\$747,500	\$747,500	\$747,500	\$747,500	\$747,500	\$747,500	\$747,500	\$747,500	\$747,500	\$747,500	\$747,500	\$747,500
Normal Usage Charge	\$516,451	\$791,870	\$1,087,666	\$1,380,000	\$1,380,000	\$1,380,000	\$1,380,000	\$1,380,000	\$1,380,000	\$1,380,000	\$1,380,000	\$1,380,000	\$1,380,000	\$1,380,000	\$1,380,000
<b>Water Charge to go to LCRA</b>	<b>\$1,695,725</b>	<b>\$1,833,435</b>	<b>\$1,981,333</b>	<b>\$2,127,500</b>	<b>\$2,127,500</b>	<b>\$2,127,500</b>	<b>\$2,127,500</b>	<b>\$2,127,500</b>	<b>\$2,127,500</b>	<b>\$2,127,500</b>	<b>\$2,127,500</b>	<b>\$2,127,500</b>	<b>\$2,127,500</b>	<b>\$2,127,500</b>	<b>\$2,127,500</b>
Reserve Charge to Conservation Charge (\$/1000 GAL) based on reserve volume	\$318,404	\$281,223	\$241,290	\$201,825	\$201,825	\$201,825	\$201,825	\$201,825	\$201,825	\$201,825	\$201,825	\$201,825	\$201,825	\$201,825	\$201,825
(\$/1000 GAL) based on demand	\$0.048	\$0.048	\$0.048	\$0.048	\$0.048	\$0.048	\$0.048	\$0.048	\$0.048	\$0.048	\$0.048	\$0.048	\$0.048	\$0.048	\$0.048
Normal Usage Charge to Conservation Charge (\$/1000 GAL) based on demand	\$0.218	\$0.125	\$0.078	\$0.052	\$0.052	\$0.052	\$0.052	\$0.052	\$0.052	\$0.052	\$0.052	\$0.052	\$0.052	\$0.052	\$0.052
Normal Usage Charge to Conservation Charge (\$/1000 GAL) based on demand	\$139,442	\$213,805	\$293,670	\$372,600	\$372,600	\$372,600	\$372,600	\$372,600	\$372,600	\$372,600	\$372,600	\$372,600	\$372,600	\$372,600	\$372,600
(\$/1000 GAL) based on demand	\$0.095	\$0.095	\$0.095	\$0.095	\$0.095	\$0.095	\$0.095	\$0.095	\$0.095	\$0.095	\$0.095	\$0.095	\$0.095	\$0.095	\$0.095
<b>Conservation Charge to go to Ag Fund</b>	<b>\$457,846</b>	<b>\$495,027</b>	<b>\$534,960</b>	<b>\$574,425</b>	<b>\$574,425</b>	<b>\$574,425</b>	<b>\$574,425</b>	<b>\$574,425</b>	<b>\$574,425</b>	<b>\$574,425</b>	<b>\$574,425</b>	<b>\$574,425</b>	<b>\$574,425</b>	<b>\$574,425</b>	<b>\$574,425</b>

**Automated Check Structures and Control Sys**  
**Projected Water Usage of HB 1437 Alliance W**  
 Note: Projections made for LCRA use in "No Net

Entity (amount of Alliance Water contract)	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
CTSUD (3472 acft/yr)															
Georgetown (6944 acft/yr)															
Liberty Hill (600 acft/yr)															
Round Rock (11,444 acft/yr)															
<b>Total</b>	18,045	18,361	18,677	18,993	19,310	19,626	19,942	20,258	20,574	20,890	21,206	21,523	21,839	22,155	22,471

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Maximum Acre feet	25000	25000	25000	25000	25000	25000	25000	25000	25000	25000	25000	25000	25000	25000	25000
Normal Rate	\$115.00	\$115.00	\$115.00	\$115.00	\$115.00	\$115.00	\$115.00	\$115.00	\$115.00	\$115.00	\$115.00	\$115.00	\$115.00	\$115.00	\$115.00
Inverted Block Rate	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00
Reserve Charge Rate %	27.00%	27.00%	27.00%	27.00%	27.00%	27.00%	27.00%	27.00%	27.00%	27.00%	27.00%	27.00%	27.00%	27.00%	27.00%
Conservation Charge %	27.00%	27.00%	27.00%	27.00%	27.00%	27.00%	27.00%	27.00%	27.00%	27.00%	27.00%	27.00%	27.00%	27.00%	27.00%

Reserve Charge Volume	13,000	13,000	13,000	13,000	13,000	13,000	13,000	13,000	13,000	13,000	13,000	13,000	13,000	13,000	13,000
Total Volume for Conservation Charge - Normal	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000

Reserve Charge	\$747,500	\$747,500	\$747,500	\$747,500	\$747,500	\$747,500	\$747,500	\$747,500	\$747,500	\$747,500	\$747,500	\$747,500	\$747,500	\$747,500	\$747,500
Normal Usage Charge	\$1,380,000	\$1,380,000	\$1,380,000	\$1,380,000	\$1,380,000	\$1,380,000	\$1,380,000	\$1,380,000	\$1,380,000	\$1,380,000	\$1,380,000	\$1,380,000	\$1,380,000	\$1,380,000	\$1,380,000
<b>Water Charge to go to LCRA</b>	<b>\$2,127,500</b>	<b>\$2,127,500</b>	<b>\$2,127,500</b>	<b>\$2,127,500</b>	<b>\$2,127,500</b>	<b>\$2,127,500</b>	<b>\$2,127,500</b>	<b>\$2,127,500</b>	<b>\$2,127,500</b>	<b>\$2,127,500</b>	<b>\$2,127,500</b>	<b>\$2,127,500</b>	<b>\$2,127,500</b>	<b>\$2,127,500</b>	<b>\$2,127,500</b>

Reserve Charge to Conservation Charge (\$/1000 GAL) based on reserve volume	\$201,825	\$201,825	\$201,825	\$201,825	\$201,825	\$201,825	\$201,825	\$201,825	\$201,825	\$201,825	\$201,825	\$201,825	\$201,825	\$201,825	\$201,825
(\$/1000 GAL) based on demand	\$0.048	\$0.048	\$0.048	\$0.048	\$0.048	\$0.048	\$0.048	\$0.048	\$0.048	\$0.048	\$0.048	\$0.048	\$0.048	\$0.048	\$0.048
	\$0.052	\$0.052	\$0.052	\$0.052	\$0.052	\$0.052	\$0.052	\$0.052	\$0.052	\$0.052	\$0.052	\$0.052	\$0.052	\$0.052	\$0.052

Normal Usage Charge to Conservation Charge (\$/1000 GAL) based on demand	\$372,600	\$372,600	\$372,600	\$372,600	\$372,600	\$372,600	\$372,600	\$372,600	\$372,600	\$372,600	\$372,600	\$372,600	\$372,600	\$372,600	\$372,600
	\$0.095	\$0.095	\$0.095	\$0.095	\$0.095	\$0.095	\$0.095	\$0.095	\$0.095	\$0.095	\$0.095	\$0.095	\$0.095	\$0.095	\$0.095

<b>Conservation Charge to go to Ag Fund</b>	<b>\$574,425</b>	<b>\$574,425</b>	<b>\$574,425</b>	<b>\$574,425</b>	<b>\$574,425</b>	<b>\$574,425</b>	<b>\$574,425</b>	<b>\$574,425</b>	<b>\$574,425</b>	<b>\$574,425</b>	<b>\$574,425</b>	<b>\$574,425</b>	<b>\$574,425</b>	<b>\$574,425</b>	<b>\$574,425</b>
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**Automated Check Structures and Control Sys**  
**Projected Water Usage of HB 1437 Alliance W**  
 Note: Projections made for LCRA use in "No Net

Entity (amount of Alliance Water contract)	2043	2044	2045	2046	2047	2048	2049	2050
CTSUD (3472 acft/yr)								
Georgetown (6944 acft/yr)								
Liberty Hill (600 acft/yr)								
Round Rock (11,444 acft/yr)								
<b>Total</b>	22,787	23,103	23,419	23,735	24,052	24,368	24,684	25,000

0%	0%	0%	0%	0%	0%	0%	0%	0%
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Maximum Acre feet	25000	25000	25000	25000	25000	25000	25000	25000
Normal Rate	\$115.00	\$115.00	\$115.00	\$115.00	\$115.00	\$115.00	\$115.00	\$115.00
Inverted Block Rate	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00
Reserve Charge Rate %								
Conservation Charge %	27.00%	27.00%	27.00%	27.00%	27.00%	27.00%	27.00%	27.00%

Reserve Charge Volume	13,000	13,000	13,000	13,000	13,000	13,000	13,000	13,000
Total Volume for Conservation Charge - Normal	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000

Reserve Charge	\$747,500	\$747,500	\$747,500	\$747,500	\$747,500	\$747,500	\$747,500	\$747,500
Normal Usage Charge	\$1,380,000	\$1,380,000	\$1,380,000	\$1,380,000	\$1,380,000	\$1,380,000	\$1,380,000	\$1,380,000
<b>Water Charge to go to LCRA</b>	<b>\$2,127,500</b>	<b>\$2,127,500</b>	<b>\$2,127,500</b>	<b>\$2,127,500</b>	<b>\$2,127,500</b>	<b>\$2,127,500</b>	<b>\$2,127,500</b>	<b>\$2,127,500</b>

Reserve Charge to Conservation Charge (\$/1000 GAL) based on reserve volume	\$201,825	\$201,825	\$201,825	\$201,825	\$201,825	\$201,825	\$201,825	\$201,825
(\$/1000 GAL) based on demand	\$0.048	\$0.048	\$0.048	\$0.048	\$0.048	\$0.048	\$0.048	\$0.048
	\$0.052	\$0.052	\$0.052	\$0.052	\$0.052	\$0.052	\$0.052	\$0.052

Normal Usage Charge to Conservation Charge (\$/1000 GAL) based on demand	\$372,600	\$372,600	\$372,600	\$372,600	\$372,600	\$372,600	\$372,600	\$372,600
	\$0.095	\$0.095	\$0.095	\$0.095	\$0.095	\$0.095	\$0.095	\$0.095

<b>Conservation Charge to go to Ag Fund</b>	<b>\$574,425</b>	<b>\$574,425</b>	<b>\$574,425</b>	<b>\$574,425</b>	<b>\$574,425</b>	<b>\$574,425</b>	<b>\$574,425</b>	<b>\$574,425</b>
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**Automated Check Structures and Control Systems in the Garwood Irrigation District, Phased**

Capital Cost	\$ 7,074,216
Annual O&M	\$ 176,855
Rate	6.00%
Useful Life (Debt Term)	30 years
Annualized Capital Cost	\$513,934
Interest Accrued on - balances:	6%
Interest Accrued on + balances:	4%
Net Present Value Percentage	6.0%
Net Present Value	\$7,664,411
Cumulative Total Acre-feet	452,675
Total \$ per Total Acre-feet	\$ 16.93

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
<b>Beginning Balance</b>				\$ 544,125	\$ 544,125	\$ 720,846	\$ 908,672	\$ 1,108,047	\$ 1,319,434	\$ 1,543,314	\$ 1,780,184	\$ 2,029,324
<b>Deposited to Ag Fund</b>					\$ 397,440	\$ 401,477	\$ 405,513	\$ 409,550	\$ 413,586	\$ 417,623	\$ 420,417	\$ 423,212
<b>Used to Implement Strategy</b>					\$ 242,484	\$ 242,484	\$ 242,484	\$ 242,484	\$ 242,484	\$ 242,484	\$ 242,484	\$ 242,484
<b>Interest Accrued on Balance</b>					\$ 21,765	\$ 28,834	\$ 36,347	\$ 44,322	\$ 52,777	\$ 61,733	\$ 71,207	\$ 81,173
<b>Balance</b>				\$ 544,125	\$ 720,846	\$ 908,672	\$ 1,108,047	\$ 1,319,434	\$ 1,543,314	\$ 1,780,184	\$ 2,029,324	\$ 2,291,225

Automated Check Structures a

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
<b>Beginning Balance</b>	\$2,291,225	\$2,349,083	\$2,446,436	\$2,338,464	\$2,265,638	\$2,189,899	\$2,111,131	\$2,029,212	\$1,944,016	\$1,855,412	\$1,763,264	\$1,667,430	\$1,567,762
<b>Deposited to Ag Fund</b>	\$457,846	\$495,027	\$534,960	\$574,425	\$574,425	\$574,425	\$574,425	\$574,425	\$574,425	\$574,425	\$574,425	\$574,425	\$574,425
<b>Used to Implement Strategy</b>	\$491,637	\$491,637	\$740,789	\$740,789	\$740,789	\$740,789	\$740,789	\$740,789	\$740,789	\$740,789	\$740,789	\$740,789	\$740,789
<b>Interest Accrued on Balance</b>	\$91,649	\$93,963	\$97,857	\$93,539	\$90,626	\$87,596	\$84,445	\$81,168	\$77,761	\$74,216	\$70,531	\$66,697	\$62,710
<b>Balance</b>	\$2,349,083	\$2,446,436	\$2,338,464	\$2,265,638	\$2,189,899	\$2,111,131	\$2,029,212	\$1,944,016	\$1,855,412	\$1,763,264	\$1,667,430	\$1,567,762	\$1,464,109

Automated Check Structures a

	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
<b>Beginning Balance</b>	\$1,464,109	\$1,356,308	\$1,244,196	\$1,127,600	\$1,006,339	\$880,228	\$749,073	\$612,671	\$470,814	\$323,282	\$303,381	\$282,684	\$261,159	\$238,774	\$215,493
<b>Deposited to Ag Fund</b>	\$574,425	\$574,425	\$574,425	\$574,425	\$574,425	\$574,425	\$574,425	\$574,425	\$574,425	\$574,425	\$574,425	\$574,425	\$574,425	\$574,425	\$574,425
<b>Used to Implement Strategy</b>	\$740,789	\$740,789	\$740,789	\$740,789	\$740,789	\$740,789	\$740,789	\$740,789	\$740,789	\$740,789	\$607,257	\$607,257	\$607,257	\$607,257	\$607,257
<b>Interest Accrued on Balance</b>	\$58,564	\$54,252	\$49,768	\$45,104	\$40,254	\$35,209	\$29,963	\$24,507	\$18,833	\$12,931	\$12,135	\$11,307	\$10,446	\$9,551	\$8,620
<b>Balance</b>	\$1,356,308	\$1,244,196	\$1,127,600	\$1,006,339	\$880,228	\$749,073	\$612,671	\$470,814	\$323,282	\$303,381	\$282,684	\$261,159	\$238,774	\$215,493	\$191,280

Automated Check Structures a

	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
<b>Beginning Balance</b>	\$191,280	\$166,100	\$139,912	\$302,877	\$472,361	\$838,825	\$1,219,947	\$1,616,315	\$2,028,537	\$2,457,248
<b>Deposited to Ag Fund</b>	\$574,425	\$574,425	\$574,425	\$574,425	\$574,425	\$574,425	\$574,425	\$574,425	\$574,425	\$574,425
<b>Used to Implement Strategy</b>	\$607,257	\$607,257	\$417,056	\$417,056	\$226,855	\$226,855	\$226,855	\$226,855	\$226,855	\$226,855
<b>Interest Accrued on Balance</b>	\$7,651	\$6,644	\$5,596	\$12,115	\$18,894	\$33,553	\$48,798	\$64,653	\$81,141	\$98,290
<b>Balance</b>	\$166,100	\$139,912	\$302,877	\$472,361	\$838,825	\$1,219,947	\$1,616,315	\$2,028,537	\$2,457,248	\$2,903,108

**Automated Check Structures and Control Systems in the Garwood Irrigation District, Phased**

	<b>Capital Cost</b>	<b>Water Savings</b>
Entire System	\$ 7,074,216	12,000 ac-ft
First Increment	\$ 1,838,052	4,000 ac-ft
Second and Third Increment	\$2,618,082	4,000 ac-ft (each)

\*See 'Check Costs' for cost details regarding this option.

Annual O&M per 1/3 \$ 58,952

Interest Rate on Capital 6.00%  
Useful Life (Debt Term) 30

years

Amortized Capital Cost of First Increment \$133,532

Amortized Capital Cost of 2nd/3rd Increment \$190,201

Year	Demand	Total Number of Segments		Capital	Annual		Annual Cost	
		Constructed			Capital	O&M		
2004	-	0						
2005	600	1	\$133,532		\$133,532	108,951.80	\$242,484	
2006	860	1	\$133,532		\$133,532	108,951.80	\$242,484	
2007	1,120	1	\$133,532		\$133,532	108,951.80	\$242,484	
2008	1,380	1	\$133,532		\$133,532	108,951.80	\$242,484	
2009	1,640	1	\$133,532		\$133,532	108,951.80	\$242,484	
2010	1,900	1	\$133,532		\$133,532	108,951.80	\$242,484	
2011	2,080	1	\$133,532		\$133,532	108,951.80	\$242,484	
2012	2,260	1	\$133,532		\$133,532	108,951.80	\$242,484	
2013	4,491	2	\$133,532	\$190,201	\$323,733	167,903.60	\$491,637	
2014	6,886	2	\$133,532	\$190,201	\$323,733	167,903.60	\$491,637	
2015	9,458	3	\$133,532	\$190,201	\$190,201	\$513,934	226,855.40	\$740,789
2016	12,296	3	\$133,532	\$190,201	\$190,201	\$513,934	226,855.40	\$740,789
2017	14,753	3	\$133,532	\$190,201	\$190,201	\$513,934	226,855.40	\$740,789
2018	15,007	3	\$133,532	\$190,201	\$190,201	\$513,934	226,855.40	\$740,789
2019	15,262	3	\$133,532	\$190,201	\$190,201	\$513,934	226,855.40	\$740,789
2020	15,516	3	\$133,532	\$190,201	\$190,201	\$513,934	226,855.40	\$740,789
2021	15,832	3	\$133,532	\$190,201	\$190,201	\$513,934	226,855.40	\$740,789
2022	16,148	3	\$133,532	\$190,201	\$190,201	\$513,934	226,855.40	\$740,789
2023	16,464	3	\$133,532	\$190,201	\$190,201	\$513,934	226,855.40	\$740,789
2024	16,781	3	\$133,532	\$190,201	\$190,201	\$513,934	226,855.40	\$740,789
2025	17,097	3	\$133,532	\$190,201	\$190,201	\$513,934	226,855.40	\$740,789
2026	17,413	3	\$133,532	\$190,201	\$190,201	\$513,934	226,855.40	\$740,789
2027	17,729	3	\$133,532	\$190,201	\$190,201	\$513,934	226,855.40	\$740,789
2028	18,045	3	\$133,532	\$190,201	\$190,201	\$513,934	226,855.40	\$740,789
2029	18,361	3	\$133,532	\$190,201	\$190,201	\$513,934	226,855.40	\$740,789
2030	18,677	3	\$133,532	\$190,201	\$190,201	\$513,934	226,855.40	\$740,789
2031	18,993	3	\$133,532	\$190,201	\$190,201	\$513,934	226,855.40	\$740,789
2032	19,310	3	\$133,532	\$190,201	\$190,201	\$513,934	226,855.40	\$740,789
2033	19,626	3	\$133,532	\$190,201	\$190,201	\$513,934	226,855.40	\$740,789
2034	19,942	3	\$133,532	\$190,201	\$190,201	\$513,934	226,855.40	\$740,789
2035	20,258	3		\$190,201	\$190,201	\$380,402	226,855.40	\$607,257
2036	20,574	3		\$190,201	\$190,201	\$380,402	226,855.40	\$607,257
2037	20,890	3		\$190,201	\$190,201	\$380,402	226,855.40	\$607,257
2038	21,206	3		\$190,201	\$190,201	\$380,402	226,855.40	\$607,257
2039	21,523	3		\$190,201	\$190,201	\$380,402	226,855.40	\$607,257
2040	21,839	3		\$190,201	\$190,201	\$380,402	226,855.40	\$607,257
2041	22,155	3		\$190,201	\$190,201	\$380,402	226,855.40	\$607,257
2042	22,471	3		\$190,201	\$190,201	\$380,402	226,855.40	\$607,257
2043	22,787	3			\$190,201	\$190,201	226,855.40	\$417,056
2044	23,103	3			\$190,201	\$190,201	226,855.40	\$417,056
2045	23,419	3				\$0	226,855.40	\$226,855
2046	23,735	3				\$0	226,855.40	\$226,855
2047	24,052	3				\$0	226,855.40	\$226,855
2048	24,368	3				\$0	226,855.40	\$226,855
2049	24,684	3				\$0	226,855.40	\$226,855
2050	25,000	3				\$0	226,855.40	\$226,855

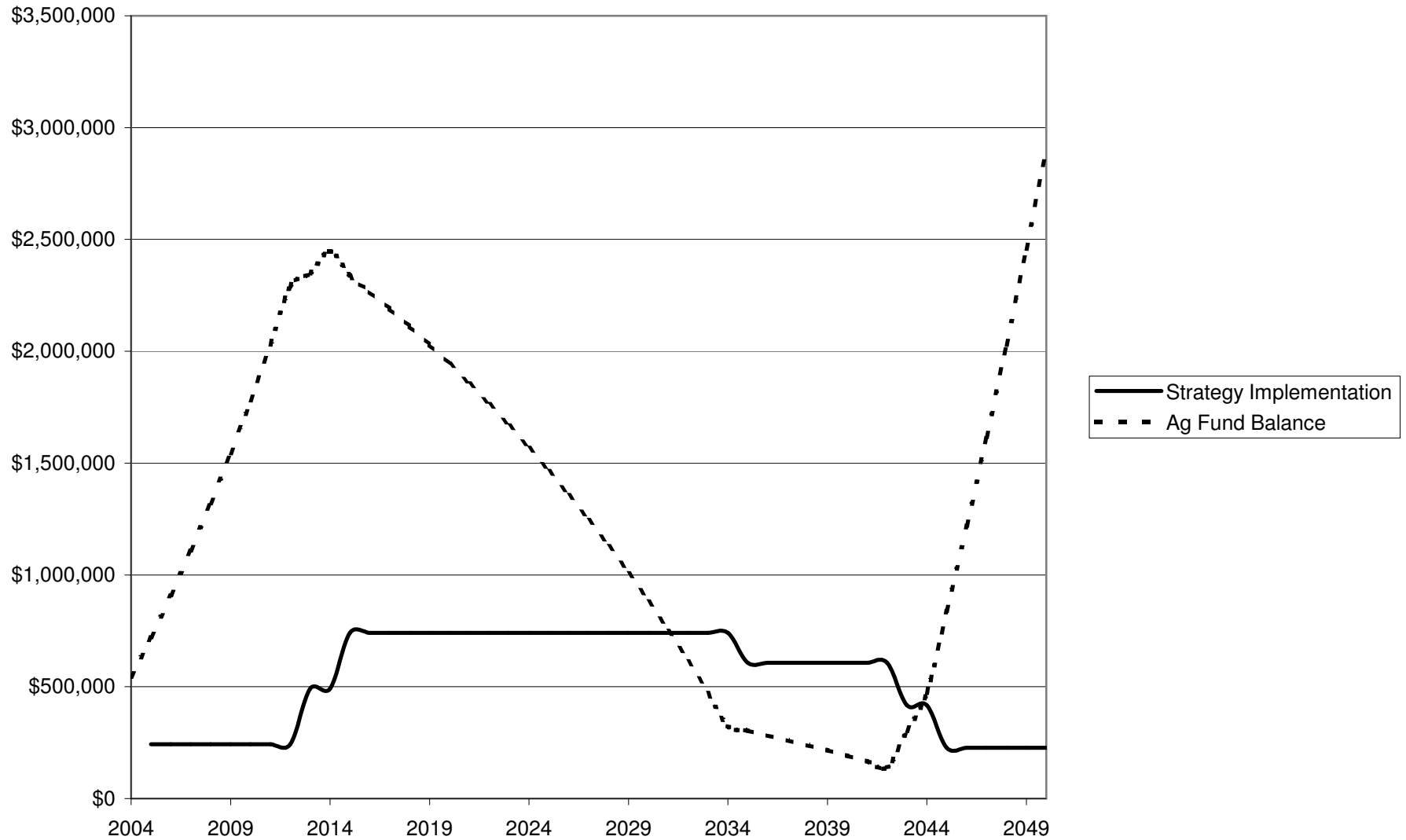
**Automated Check Structures and Control Systems in the Garwood Irrigation District, Phased**

The Garwood Dist. Currently has 34 check structures in operation. 3 of these have motorized operators already installed. All other structures have screw type gates installed on the downstream face of a bridge/culvert which functions as the check structure.

Full Implementation				Initial implementation		
<b>Control Stations</b>						
Item	Quantity	unit cost	total			
Water level sensors	2	\$ 1,500	\$ 3,000			
Controller	1	\$ 1,000	\$ 1,000			
Radio	1	\$ 1,500	\$ 1,500			
Antenna	1	\$ 1,200	\$ 1,200			
Fabrication/testing	1	\$ 5,000	\$ 5,000			
Field installation/testing	1	\$ 4,000	\$ 4,000			
Solar Panel with batteries	1	\$ 5,000	\$ 5,000			
Programming	1	\$ 2,000	\$ 2,000			
Design	1	\$ 5,000	\$ 5,000			
Subtotal per station			\$ 27,700	34 locations		8 locations
Subtotal for all stations			\$ 941,800		\$ 221,600	
<b>Gate Operators</b>						
Gate Operators	2	\$ 5,000	\$ 10,000			
Valve Positioner	2	\$ 1,000	\$ 2,000			
Power Supply	1	\$ 10,000	\$ 10,000			
Gate Operator Installation	2	\$ 5,000	\$ 10,000			
Subtotal per station			\$ 32,000	31 locations		5 locations
Subtotal Operators			\$ 992,000		\$ 160,000	
<b>New Gates/Structures</b>						
Gates	2	\$ 12,000	\$ 24,000			
Installation	2	\$ 10,000	\$ 20,000			
Canal Structure	1	\$ 30,000	\$ 30,000			
Structure Design	1	\$ 10,000	\$ 10,000			
Subtotal per structure			\$ 84,000	20 locations		0 locations
Subtotal all structures			\$ 1,680,000	(estimated)	\$ -	
<b>Central Control</b>						
MTU	1	\$ 2,000	\$ 2,000			
Radio	1	\$ 3,000	\$ 3,000			
Antenna	1	\$ 3,000	\$ 3,000			
Programming	1	\$ 15,000	\$ 15,000			
Remote Pump Control	1	\$ 200,000	\$ 200,000			
Connection to LCRA Trunk Ra	1	\$ 15,000	\$ 15,000			
SCADA	1	\$ 15,000	\$ 15,000			1 location
Subtotal for system			\$ 253,000	1 location	\$ 253,000	
<b>System Design</b>	1	\$ 500,000	\$ 500,000		\$ 500,000	
Total System Cost			\$ 4,366,800		\$ 1,134,600	
Contractor Mob, Demob, Bonding, Insurar		5%	\$ 218,340		\$ 56,730	
Contractor Overhead and Profit		15%	\$ 655,020		\$ 170,190	
Subtotal		\$0	\$ 5,240,160		\$ 1,361,520	
E, A, L, F, B, C		35%	\$ 1,834,056		\$ 476,532	
Total Capital Cost			\$ 7,074,216		\$ 1,838,052	First Increment
					\$2,618,082	Second and Third Incre

ements

## Automated Check Structures and Control Systems in the Garwood Irrigation District, Phased



**Automated Check Structures and Control Systems in the Garwood Irrigation District, Expedited**

**Projected Water Usage of HB 1437 Alliance Water**

Note: Projections made for LCRA use in "No Net Loss" evaluations. All values are in acre-feet per year.

Entity (amount of Alliance Water contract)	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
CTSUD (3472 acft/yr)	-	-	-	-	-	600	760	920	1,080	1,240	1,400	1,560	1,720
Georgetown (6944 acft/yr)	-	-	-	-	-	-	-	-	-	-	-	-	-
Liberty Hill (600 acft/yr)	-	-	-	-	-	-	100	200	300	400	500	520	540
Round Rock (11,444 acft/yr)	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	-	-	-	-	-	<b>600</b>	<b>860</b>	<b>1,120</b>	<b>1,380</b>	<b>1,640</b>	<b>1,900</b>	<b>2,080</b>	<b>2,260</b>

Source: D. Wheelock, 4/19/04; Williamson Co Water Facilities Plan; personal correspondence.

<b>Cost Creep</b>	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
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Maximum Acre feet	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000
Normal Rate	\$105.00	\$105.00	\$105.00	\$105.00	\$105.00	\$115.00	\$115.00	\$115.00	\$115.00	\$115.00	\$115.00	\$115.00	\$115.00
Inverted Block Rate	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00
Reserve Charge Rate %	50.00%												
Conservation Charge %	44.00%	44.00%	44.00%	44.00%	44.00%	44.00%	44.00%	44.00%	44.00%	44.00%	44.00%	44.00%	44.00%

Check for Lowest Ag Fund Balance: 80,267

Reserve Charge Volume						24,400	24,140	23,880	23,620	23,360	23,100	22,920	22,740
Total Volume for Conservation Charge - Normal	-	-	-	-	-	600	860	1,120	1,380	1,640	1,900	2,080	2,260

Reserve Charge	\$0	\$0	\$0	\$0	\$1,403,000	\$1,388,050	\$1,373,100	\$1,358,150	\$1,343,200	\$1,328,250	\$1,317,900	\$1,307,550
Normal Usage Charge	\$0	\$0	\$0	\$0	\$69,000	\$98,900	\$128,800	\$158,700	\$188,600	\$218,500	\$239,200	\$259,900
<b>Water Charge to go to LCRA</b>	\$0	\$0	\$0	\$0	\$1,472,000	\$1,486,950	\$1,501,900	\$1,516,850	\$1,531,800	\$1,546,750	\$1,557,100	\$1,567,450
Reserve Charge to Conservation Charge (\$/1000 GAL) based on reserve volume	\$0	\$0	\$0	\$0	\$617,320	\$610,742	\$604,164	\$597,586	\$591,008	\$584,430	\$579,876	\$575,322
(\$/1000 GAL) based on demand					\$0.078	\$0.078	\$0.078	\$0.078	\$0.078	\$0.078	\$0.078	\$0.078
					\$3.158	\$2.180	\$1.656	\$1.329	\$1.106	\$0.944	\$0.856	\$0.781
Normal Usage Charge to Conservation Charge (\$/1000 GAL) based on demand	\$0	\$0	\$0	\$0	\$30,360	\$43,516	\$56,672	\$69,828	\$82,984	\$96,140	\$105,248	\$114,356
					\$0.155	\$0.155	\$0.155	\$0.155	\$0.155	\$0.155	\$0.155	\$0.155
<b>Conservation Charge to go to Ag Fund</b>	\$0	\$0	\$0	\$0	\$647,680	\$654,258	\$660,836	\$667,414	\$673,992	\$680,570	\$685,124	\$689,678

Management Cost Component	\$ 25,000
Monitoring Cost Component	\$ 25,000

**Automated Check Structures and Control Sys**  
**Projected Water Usage of HB 1437 Alliance Wa**  
 Note: Projections made for LCRA use in "No Net I

Entity (amount of Alliance Water contract)	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
CTSUD (3472 acft/yr)	1,880	2,040	2,200	2,454	2,709	2,963	3,218	3,472	3,472	3,472	3,472	3,472	3,472		
Georgetown (6944 acft/yr)	-	-	-	-	-	-	-	-	-	-	-	-	-		
Liberty Hill (600 acft/yr)	560	580	600	600	600	600	600	600	600	600	600	600	600		
Round Rock (11,444 acft/yr)	2,051	4,266	6,658	9,241	11,444	11,444	11,444	11,444	11,444	11,444	11,444	11,444	11,444		
<b>Total</b>	<b>4,491</b>	<b>6,886</b>	<b>9,458</b>	<b>12,296</b>	<b>14,753</b>	<b>15,007</b>	<b>15,262</b>	<b>15,516</b>	15,832	16,148	16,464	16,781	<b>17,097</b>	17,413	17,729

0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
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Maximum Acre feet	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000
Normal Rate	\$115.00	\$115.00	\$115.00	\$115.00	\$115.00	\$115.00	\$115.00	\$115.00	\$115.00	\$115.00	\$115.00	\$115.00	\$115.00	\$115.00	\$115.00
Inverted Block Rate	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00
Reserve Charge Rate %	44.00%	44.00%	44.00%	44.00%	44.00%	44.00%	44.00%	44.00%	44.00%	44.00%	44.00%	44.00%	44.00%	44.00%	44.00%
Conservation Charge %	44.00%	44.00%	44.00%	44.00%	44.00%	44.00%	44.00%	44.00%	44.00%	44.00%	44.00%	44.00%	44.00%	44.00%	44.00%

Reserve Charge Volume	20,509	18,114	15,542	13,000	13,000	13,000	13,000	13,000	13,000	13,000	13,000	13,000	13,000	13,000	13,000
Total Volume for Conservation Charge - Normal	4,491	6,886	9,458	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000

Reserve Charge	\$1,179,275	\$1,041,565	\$893,667	\$747,500	\$747,500	\$747,500	\$747,500	\$747,500	\$747,500	\$747,500	\$747,500	\$747,500	\$747,500	\$747,500	\$747,500
Normal Usage Charge	\$516,451	\$791,870	\$1,087,666	\$1,380,000	\$1,380,000	\$1,380,000	\$1,380,000	\$1,380,000	\$1,380,000	\$1,380,000	\$1,380,000	\$1,380,000	\$1,380,000	\$1,380,000	\$1,380,000
<b>Water Charge to go to LCRA</b>	<b>\$1,695,725</b>	<b>\$1,833,435</b>	<b>\$1,981,333</b>	<b>\$2,127,500</b>	<b>\$2,127,500</b>	<b>\$2,127,500</b>	<b>\$2,127,500</b>	<b>\$2,127,500</b>	<b>\$2,127,500</b>	<b>\$2,127,500</b>	<b>\$2,127,500</b>	<b>\$2,127,500</b>	<b>\$2,127,500</b>	<b>\$2,127,500</b>	<b>\$2,127,500</b>
Reserve Charge to Conservation Charge (\$/1000 GAL) based on reserve volume	\$518,881	\$458,289	\$393,213	\$328,900	\$328,900	\$328,900	\$328,900	\$328,900	\$328,900	\$328,900	\$328,900	\$328,900	\$328,900	\$328,900	\$328,900
(\$/1000 GAL) based on demand	\$0.078	\$0.078	\$0.078	\$0.078	\$0.078	\$0.078	\$0.078	\$0.078	\$0.078	\$0.078	\$0.078	\$0.078	\$0.078	\$0.078	\$0.078
Normal Usage Charge to Conservation Charge (\$/1000 GAL) based on demand	\$0.355	\$0.204	\$0.128	\$0.084	\$0.084	\$0.084	\$0.084	\$0.084	\$0.084	\$0.084	\$0.084	\$0.084	\$0.084	\$0.084	\$0.084
Normal Usage Charge to Conservation Charge (\$/1000 GAL) based on demand	\$227,238	\$348,423	\$478,573	\$607,200	\$607,200	\$607,200	\$607,200	\$607,200	\$607,200	\$607,200	\$607,200	\$607,200	\$607,200	\$607,200	\$607,200
Conservation Charge to go to Ag Fund	\$0.155	\$0.155	\$0.155	\$0.155	\$0.155	\$0.155	\$0.155	\$0.155	\$0.155	\$0.155	\$0.155	\$0.155	\$0.155	\$0.155	\$0.155
<b>Conservation Charge to go to Ag Fund</b>	<b>\$746,119</b>	<b>\$806,711</b>	<b>\$871,787</b>	<b>\$936,100</b>	<b>\$936,100</b>	<b>\$936,100</b>	<b>\$936,100</b>	<b>\$936,100</b>	<b>\$936,100</b>	<b>\$936,100</b>	<b>\$936,100</b>	<b>\$936,100</b>	<b>\$936,100</b>	<b>\$936,100</b>	<b>\$936,100</b>

**Automated Check Structures and Control Sys**  
**Projected Water Usage of HB 1437 Alliance Wa**  
 Note: Projections made for LCRA use in "No Net I

Entity (amount of Alliance Water contract)	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
CTSUD (3472 acft/yr)															
Georgetown (6944 acft/yr)															
Liberty Hill (600 acft/yr)															
Round Rock (11,444 acft/yr)															
<b>Total</b>	18,045	18,361	18,677	18,993	19,310	19,626	19,942	20,258	20,574	20,890	21,206	21,523	21,839	22,155	22,471

0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
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Maximum Acre feet	25000	25000	25000	25000	25000	25000	25000	25000	25000	25000	25000	25000	25000	25000	25000
Normal Rate	\$115.00	\$115.00	\$115.00	\$115.00	\$115.00	\$115.00	\$115.00	\$115.00	\$115.00	\$115.00	\$115.00	\$115.00	\$115.00	\$115.00	\$115.00
Inverted Block Rate	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00
Reserve Charge Rate %	44.00%	44.00%	44.00%	44.00%	44.00%	44.00%	44.00%	44.00%	44.00%	44.00%	44.00%	44.00%	44.00%	44.00%	44.00%
Conservation Charge %	44.00%	44.00%	44.00%	44.00%	44.00%	44.00%	44.00%	44.00%	44.00%	44.00%	44.00%	44.00%	44.00%	44.00%	44.00%

Reserve Charge Volume	13,000	13,000	13,000	13,000	13,000	13,000	13,000	13,000	13,000	13,000	13,000	13,000	13,000	13,000	13,000
Total Volume for Conservation Charge - Normal	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000

Reserve Charge	\$747,500	\$747,500	\$747,500	\$747,500	\$747,500	\$747,500	\$747,500	\$747,500	\$747,500	\$747,500	\$747,500	\$747,500	\$747,500	\$747,500	\$747,500
Normal Usage Charge	\$1,380,000	\$1,380,000	\$1,380,000	\$1,380,000	\$1,380,000	\$1,380,000	\$1,380,000	\$1,380,000	\$1,380,000	\$1,380,000	\$1,380,000	\$1,380,000	\$1,380,000	\$1,380,000	\$1,380,000
<b>Water Charge to go to LCRA</b>	<b>\$2,127,500</b>	<b>\$2,127,500</b>	<b>\$2,127,500</b>	<b>\$2,127,500</b>	<b>\$2,127,500</b>	<b>\$2,127,500</b>	<b>\$2,127,500</b>	<b>\$2,127,500</b>	<b>\$2,127,500</b>	<b>\$2,127,500</b>	<b>\$2,127,500</b>	<b>\$2,127,500</b>	<b>\$2,127,500</b>	<b>\$2,127,500</b>	<b>\$2,127,500</b>

Reserve Charge to Conservation Charge (\$/1000 GAL) based on reserve volume	\$0.078	\$0.078	\$0.078	\$0.078	\$0.078	\$0.078	\$0.078	\$0.078	\$0.078	\$0.078	\$0.078	\$0.078	\$0.078	\$0.078	\$0.078
(\$/1000 GAL) based on demand	\$0.084	\$0.084	\$0.084	\$0.084	\$0.084	\$0.084	\$0.084	\$0.084	\$0.084	\$0.084	\$0.084	\$0.084	\$0.084	\$0.084	\$0.084

Normal Usage Charge to Conservation Charge (\$/1000 GAL) based on demand	\$0.155	\$0.155	\$0.155	\$0.155	\$0.155	\$0.155	\$0.155	\$0.155	\$0.155	\$0.155	\$0.155	\$0.155	\$0.155	\$0.155	\$0.155
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<b>Conservation Charge to go to Ag Fund</b>	<b>\$936,100</b>	<b>\$936,100</b>	<b>\$936,100</b>	<b>\$936,100</b>	<b>\$936,100</b>	<b>\$936,100</b>	<b>\$936,100</b>	<b>\$936,100</b>	<b>\$936,100</b>	<b>\$936,100</b>	<b>\$936,100</b>	<b>\$936,100</b>	<b>\$936,100</b>	<b>\$936,100</b>	<b>\$936,100</b>
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**Automated Check Structures and Control Sys**  
**Projected Water Usage of HB 1437 Alliance Wa**  
 Note: Projections made for LCRA use in "No Net I

Entity (amount of Alliance Water contract)	2043	2044	2045	2046	2047	2048	2049	2050
CTSUD (3472 acft/yr)								
Georgetown (6944 acft/yr)								
Liberty Hill (600 acft/yr)								
Round Rock (11,444 acft/yr)								
<b>Total</b>	22,787	23,103	23,419	23,735	24,052	24,368	24,684	25,000

0%	0%	0%	0%	0%	0%	0%	0%	0%
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Maximum Acre feet	25000	25000	25000	25000	25000	25000	25000	25000
Normal Rate	\$115.00	\$115.00	\$115.00	\$115.00	\$115.00	\$115.00	\$115.00	\$115.00
Inverted Block Rate	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00
Reserve Charge Rate %								
Conservation Charge %	44.00%	44.00%	44.00%	44.00%	44.00%	44.00%	44.00%	44.00%

Reserve Charge Volume	13,000	13,000	13,000	13,000	13,000	13,000	13,000	13,000
Total Volume for Conservation Charge - Normal	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000

Reserve Charge	\$747,500	\$747,500	\$747,500	\$747,500	\$747,500	\$747,500	\$747,500	\$747,500
Normal Usage Charge	\$1,380,000	\$1,380,000	\$1,380,000	\$1,380,000	\$1,380,000	\$1,380,000	\$1,380,000	\$1,380,000
<b>Water Charge to go to LCRA</b>	<b>\$2,127,500</b>	<b>\$2,127,500</b>	<b>\$2,127,500</b>	<b>\$2,127,500</b>	<b>\$2,127,500</b>	<b>\$2,127,500</b>	<b>\$2,127,500</b>	<b>\$2,127,500</b>

Reserve Charge to Conservation Charge (\$/1000 GAL) based on reserve volume	\$328,900	\$328,900	\$328,900	\$328,900	\$328,900	\$328,900	\$328,900	\$328,900
	\$0.078	\$0.078	\$0.078	\$0.078	\$0.078	\$0.078	\$0.078	\$0.078
(\$/1000 GAL) based on demand	\$0.084	\$0.084	\$0.084	\$0.084	\$0.084	\$0.084	\$0.084	\$0.084

Normal Usage Charge to Conservation Charge (\$/1000 GAL) based on demand	\$607,200	\$607,200	\$607,200	\$607,200	\$607,200	\$607,200	\$607,200	\$607,200
	\$0.155	\$0.155	\$0.155	\$0.155	\$0.155	\$0.155	\$0.155	\$0.155

<b>Conservation Charge to go to Ag Fund</b>	<b>\$936,100</b>	<b>\$936,100</b>	<b>\$936,100</b>	<b>\$936,100</b>	<b>\$936,100</b>	<b>\$936,100</b>	<b>\$936,100</b>	<b>\$936,100</b>
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**Automated Check Structures and Control Systems in the Garwood Irrigation District, Expedited**

Capital Cost \$ 7,074,216 \*See "Check Costs" for further details

Annual O&M \$ 176,855 \*Based on SB1 O&M for pump stations

Rate 6.00%  
Useful Life (Debt Term) 30 years

Annualized Capital Cost \$513,934

Total Annual Cost with O&M and M&M \$740,789

Interest Accrued on - balances: 6%  
Interest Accrued on + balances: 4%

Net Present Value Percentage 6.0%

Net Present Value \$10,596,003

Cumulative Total Acre-feet 452,675

Total \$ per Total Acre-feet \$ 23.41

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
<b>Beginning Balance</b>				\$ 544,125	\$544,125	\$472,781	\$405,160	\$341,413	\$281,694	\$226,164	\$174,992	\$126,326	\$80,267	\$88,808	\$158,282
<b>Deposited to Ag Fund</b>					\$647,680	\$654,258	\$660,836	\$667,414	\$673,992	\$680,570	\$685,124	\$689,678	\$746,119	\$806,711	\$871,787
<b>Used to Implement Strategy</b>					\$740,789	\$740,789	\$740,789	\$740,789	\$740,789	\$740,789	\$740,789	\$740,789	\$740,789	\$740,789	\$740,789
<b>Interest Accrued on Balance</b>					\$21,765	\$18,911	\$16,206	\$13,657	\$11,268	\$9,047	\$7,000	\$5,053	\$3,211	\$3,552	\$6,331
<b>Balance</b>				\$544,125	\$472,781	\$405,160	\$341,413	\$281,694	\$226,164	\$174,992	\$126,326	\$80,267	\$88,808	\$158,282	\$295,610

**Automated Check Structures and Control**

	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>	<b>2029</b>
<b>Beginning Balance</b>	\$295,610	\$502,745	\$718,165	\$942,202	\$1,175,201	\$1,417,520	\$1,669,531	\$1,931,623	\$2,204,198	\$2,487,676	\$2,782,494	\$3,089,104	\$3,407,979	\$3,739,609
<b>Deposited to Ag Fund</b>	\$936,100	\$936,100	\$936,100	\$936,100	\$936,100	\$936,100	\$936,100	\$936,100	\$936,100	\$936,100	\$936,100	\$936,100	\$936,100	\$936,100
<b>Used to Implement Strategy</b>	\$740,789	\$740,789	\$740,789	\$740,789	\$740,789	\$740,789	\$740,789	\$740,789	\$740,789	\$740,789	\$740,789	\$740,789	\$740,789	\$740,789
<b>Interest Accrued on Balance</b>	\$11,824	\$20,110	\$28,727	\$37,688	\$47,008	\$56,701	\$66,781	\$77,265	\$88,168	\$99,507	\$111,300	\$123,564	\$136,319	\$149,584
<b>Balance</b>	\$502,745	\$718,165	\$942,202	\$1,175,201	\$1,417,520	\$1,669,531	\$1,931,623	\$2,204,198	\$2,487,676	\$2,782,494	\$3,089,104	\$3,407,979	\$3,739,609	\$4,084,503

Automated Check Structures and Control

	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043
<b>Beginning Balance</b>	\$4,084,503	\$4,443,194	\$4,816,232	\$5,204,192	\$5,607,670	\$6,027,288	\$6,977,624	\$7,965,973	\$8,993,857	\$10,062,856	\$11,174,615	\$12,330,844	\$13,533,322	\$14,783,900
<b>Deposited to Ag Fund</b>	\$936,100	\$936,100	\$936,100	\$936,100	\$936,100	\$936,100	\$936,100	\$936,100	\$936,100	\$936,100	\$936,100	\$936,100	\$936,100	\$936,100
<b>Used to Implement Strategy</b>	\$740,789	\$740,789	\$740,789	\$740,789	\$740,789	\$226,855	\$226,855	\$226,855	\$226,855	\$226,855	\$226,855	\$226,855	\$226,855	\$226,855
<b>Interest Accrued on Balance</b>	\$163,380	\$177,728	\$192,649	\$208,168	\$224,307	\$241,092	\$279,105	\$318,639	\$359,754	\$402,514	\$446,985	\$493,234	\$541,333	\$591,356
<b>Balance</b>	\$4,443,194	\$4,816,232	\$5,204,192	\$5,607,670	\$6,027,288	\$6,977,624	\$7,965,973	\$8,993,857	\$10,062,856	\$11,174,615	\$12,330,844	\$13,533,322	\$14,783,900	\$16,084,500

**Automated Check Structures and Control**

	<b>2044</b>	<b>2045</b>	<b>2046</b>	<b>2047</b>	<b>2048</b>	<b>2049</b>	<b>2050</b>
<b>Beginning Balance</b>	\$16,084,500	\$17,437,125	\$18,843,854	\$20,306,853	\$21,828,372	\$23,410,751	\$25,056,426
<b>Deposited to Ag Fund</b>	\$936,100	\$936,100	\$936,100	\$936,100	\$936,100	\$936,100	\$936,100
<b>Used to Implement Strategy</b>	\$226,855	\$226,855	\$226,855	\$226,855	\$226,855	\$226,855	\$226,855
<b>Interest Accrued on Balance</b>	\$643,380	\$697,485	\$753,754	\$812,274	\$873,135	\$936,430	\$1,002,257
<b>Balance</b>	\$17,437,125	\$18,843,854	\$20,306,853	\$21,828,372	\$23,410,751	\$25,056,426	\$26,767,928

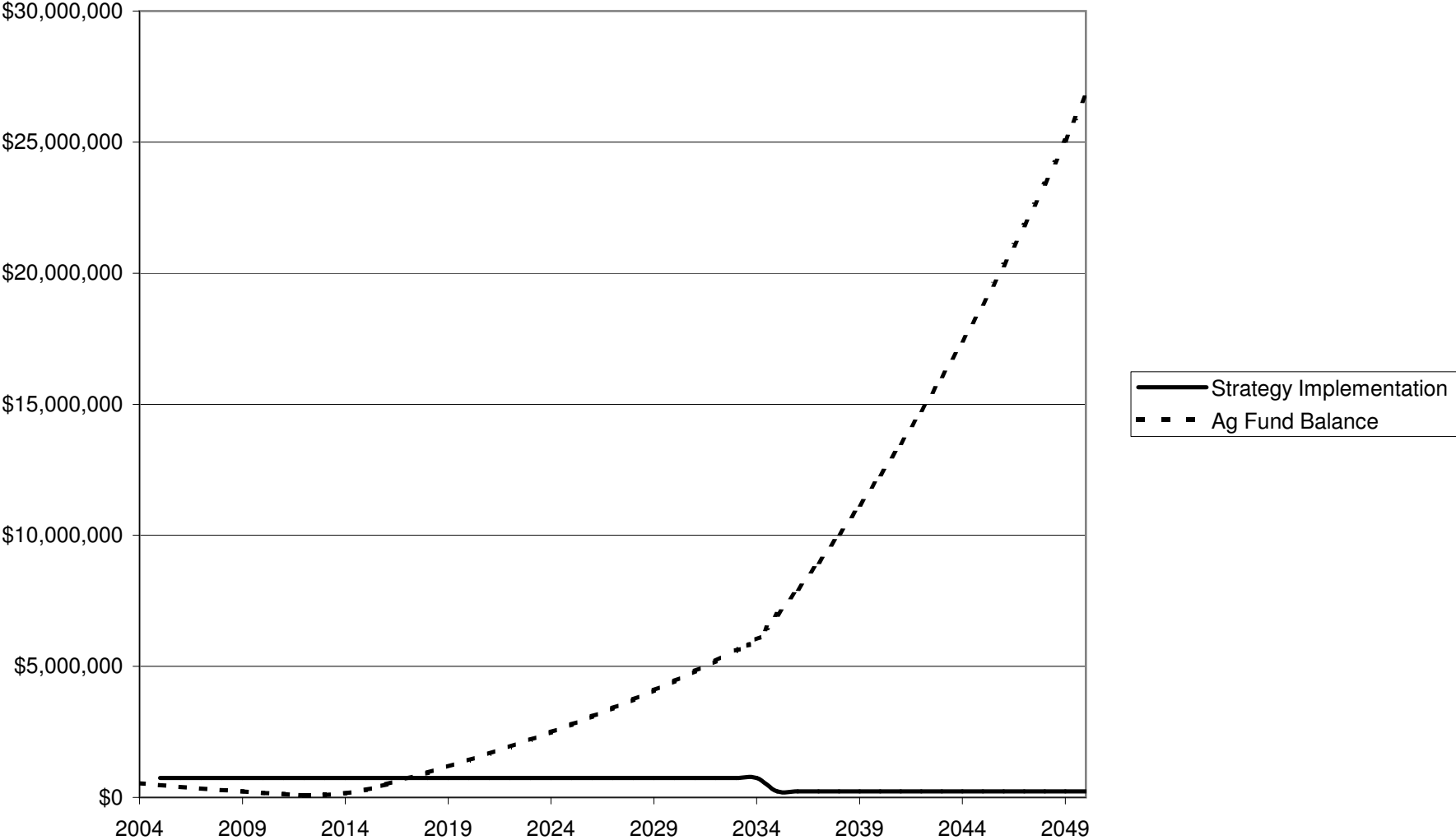
Automated Check Structures and Control Systems in the Garwood Irrigation District, Expedited

The Garwood Dist. Currently has 34 check structures in operation. 3 of these have motorized operators already installed. All other structures have screw type gates installed on the downstream face of a bridge/culvert which functions as the check structure.

Full Implementation				Initial implementation		
<b>Control Stations</b>						
Item	Quantity	unit cost	total			
Water level sensors	2	\$ 1,500	\$ 3,000			
Controller	1	\$ 1,000	\$ 1,000			
Radio	1	\$ 1,500	\$ 1,500			
Antenna	1	\$ 1,200	\$ 1,200			
Fabrication/testing	1	\$ 5,000	\$ 5,000			
Field installation/testing	1	\$ 4,000	\$ 4,000			
Solar Panel with batteries	1	\$ 5,000	\$ 5,000			
Programming	1	\$ 2,000	\$ 2,000			
Design	1	\$ 5,000	\$ 5,000			
Subtotal per station			\$ 27,700	34 locations		8 locations
Subtotal for all stations			\$ 941,800		\$ 221,600	
<b>Gate Operators</b>						
Gate Operators	2	\$ 5,000	\$ 10,000			
Valve Positioner	2	\$ 1,000	\$ 2,000			
Power Supply	1	\$ 10,000	\$ 10,000			
Gate Operator Installation	2	\$ 5,000	\$ 10,000			
Subtotal per station			\$ 32,000	31 locations		5 locations
Subtotal Operators			\$ 992,000		\$ 160,000	
<b>New Gates/Structures</b>						
Gates	2	\$ 12,000	\$ 24,000			
Installation	2	\$ 10,000	\$ 20,000			
Canal Structure	1	\$ 30,000	\$ 30,000			
Structure Design	1	\$ 10,000	\$ 10,000			
Subtotal per structure			\$ 84,000	20 locations		0 locations
Subtotal all structures			\$ 1,680,000	(estimated)	\$ -	
<b>Central Control</b>						
MTU	1	\$ 2,000	\$ 2,000			
Radio	1	\$ 3,000	\$ 3,000			
Antenna	1	\$ 3,000	\$ 3,000			
Programming	1	\$ 15,000	\$ 15,000			
Remote Pump Control	1	\$ 200,000	\$ 200,000			
Connection to LCRA Trunk Ra	1	\$ 15,000	\$ 15,000			
SCADA	1	\$ 15,000	\$ 15,000			1 location
Subtotal for system			\$ 253,000	1 location	\$ 253,000	
<b>System Design</b>	1	\$ 500,000	\$ 500,000		\$ 500,000	
Total System Cost			\$ 4,366,800		\$ 1,134,600	
Contractor Mob, Demob, Bonding, Insurar		5%	\$ 218,340		\$ 56,730	
Contractor Overhead and Profit		15%	\$ 655,020		\$ 170,190	
Subtotal		\$0	\$ 5,240,160		\$ 1,361,520	
E, A, L, F, B, C		35%	\$ 1,834,056		\$ 476,532	
Total Capital Cost			\$ 7,074,216		\$ 1,838,052	

Last two increments: \$ 2,618,082

# Automated Check Structures and Control Systems in the Garwood Irrigation District, Expedited



**Automated Check Structures and Control Systems in the Garwood Irrigation District, Short Term, Including a Supplementary Well**

**Projected Water Usage of HB 1437 Alliance Water**

Note: Projections made for LCRA use in "No Net Loss" evaluations. All values are in acre-feet per year.

Entity (amount of Alliance Water contract)	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
CTSUD (3472 acft/yr)	-	-	-	-	-	600	760	920	1,080	1,240	1,400
Georgetown (6944 acft/yr)	-	-	-	-	-	-	-	-	-	-	-
Liberty Hill (600 acft/yr)	-	-	-	-	-	-	100	200	300	400	500
Round Rock (11,444 acft/yr)	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	-	-	-	-	-	<b>600</b>	<b>860</b>	<b>1,120</b>	<b>1,380</b>	<b>1,640</b>	<b>1,900</b>

Source for Water Demand: D.Wheelock, 4/19/04; Williamson Co Water Facilities Plan; personal correspondence.

<b>Cost Creep</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>
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Maximum Acre feet	<b>25,000</b>	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000
Normal Rate	<b>\$105.00</b>	<b>\$105.00</b>	<b>\$105.00</b>	<b>\$105.00</b>	<b>\$105.00</b>	<b>\$115.00</b>	<b>\$115.00</b>	<b>\$115.00</b>	<b>\$115.00</b>	<b>\$115.00</b>	<b>\$115.00</b>
Inverted Block Rate	<b>\$200.00</b>	<b>\$200.00</b>	<b>\$200.00</b>	<b>\$200.00</b>	<b>\$200.00</b>	<b>\$200.00</b>	<b>\$200.00</b>	<b>\$200.00</b>	<b>\$200.00</b>	<b>\$200.00</b>	<b>\$200.00</b>
Reserve Charge Rate %	<b>50.00%</b>										
Conservation Charge Rate %	<b>32.00%</b>	32.00%	32.00%	32.00%	32.00%	32.00%	32.00%	32.00%	32.00%	32.00%	32.00%

Check for Lowest Ag Fund Balance: 68,815

Reserve Charge Volume						24,400	24,140	23,880	23,620	23,360	23,100
Total Volume for Conservation Charge - Normal		-	-	-	-	600	860	1,120	1,380	1,640	1,900

Reserve Charge		\$0	\$0	\$0	\$0	\$1,403,000	\$1,388,050	\$1,373,100	\$1,358,150	\$1,343,200	\$1,328,250
Normal Usage Charge		\$0	\$0	\$0	\$0	\$69,000	\$98,900	\$128,800	\$158,700	\$188,600	\$218,500
<b>Water Charge to go to LCRA</b>		\$0	\$0	\$0	\$0	\$1,472,000	\$1,486,950	\$1,501,900	\$1,516,850	\$1,531,800	\$1,546,750
Reserve Charge to Conservation Charge (\$/1000 GAL) based on reserve volume (\$/1000 GAL) based on demand		\$0	\$0	\$0	\$0	\$448,960	\$444,176	\$439,392	\$434,608	\$429,824	\$425,040
Normal Usage Charge to Conservation Charge (\$/1000 GAL) based on demand		\$0	\$0	\$0	\$0	\$22,080	\$31,648	\$41,216	\$50,784	\$60,352	\$69,920
<b>Conservation Charge to go to Ag Fund</b>		\$0	\$0	\$0	\$0	\$471,040	\$475,824	\$480,608	\$485,392	\$490,176	\$494,960

Management Cost Component	\$ 25,000
Monitoring Cost Component	\$ 25,000

**Automated Check Structures and Control Systems in the Garwood Irrigation District, Short Term, Including a Supplementary Well**

**Capital Cost** \$ 1,838,052 \*See "Check Costs" for further detail.

**Annual O&M** \$ 45,951 \*based on SB1 O&M for pump stations

**Rate** 6.00%  
**Useful Life (Debt Term)** 5 years

**Annualized Capital Cost** \$436,347

**Total Annual Cost of Automated Checks with O&M and M&R** \$532,298

Cost	2005	2006	2007	2008	2009	2010
GW Mitigation Cost	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000
Well O&M	\$2,090	\$2,714	\$3,338	\$3,962	\$4,586	\$5,210
<b>Sub-Total Backup Well Cost</b>	<b>\$42,090</b>	<b>\$42,714</b>	<b>\$43,338</b>	<b>\$43,962</b>	<b>\$44,586</b>	<b>\$45,210</b>

<b>Total Annual Cost of Automated Checks with O&amp;M and M&amp;R</b>	<b>\$532,298</b>	<b>\$532,298</b>	<b>\$532,298</b>	<b>\$532,298</b>	<b>\$532,298</b>	<b>\$532,298</b>
<b>Total Annual Costs</b>	<b>\$574,388</b>	<b>\$575,012</b>	<b>\$575,636</b>	<b>\$576,260</b>	<b>\$576,884</b>	<b>\$577,508</b>

**Interest Accrued on - balances:** 6%  
**Interest Accrued on + balances:** 4%

**Net Present Value Percentage** 6.0%

**Net Present Value** \$2,831,604

**Cumulative Total Acre-feet** 7,500 Acre-Feet

**Total \$ per Total Acre-foot** \$377.55

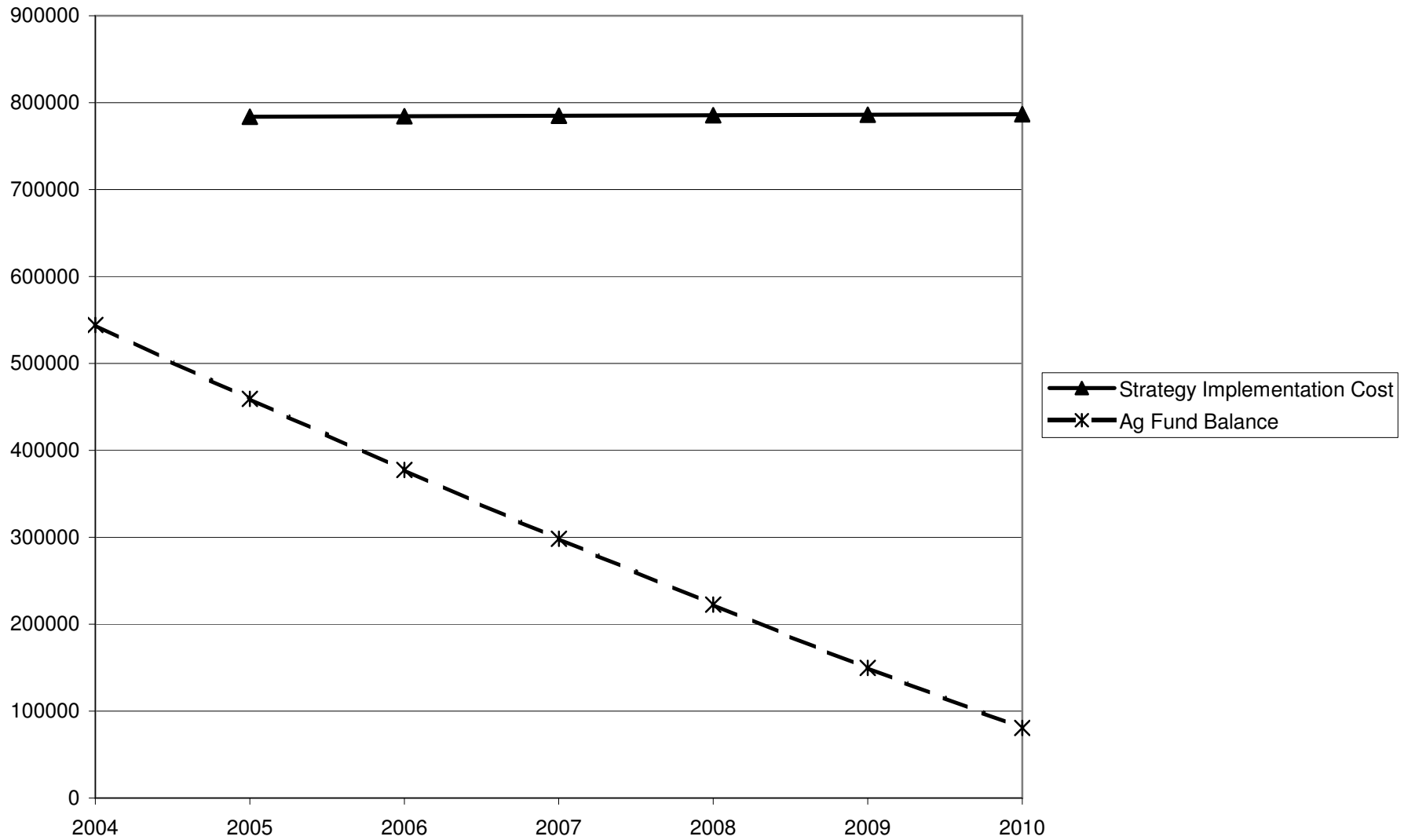
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
<b>Beginning Balance</b>				\$ 544,125	\$544,125	\$462,542	\$381,855	\$302,101	\$223,317	\$145,541
<b>Deposited to Ag Fund</b>					\$471,040	\$475,824	\$480,608	\$485,392	\$490,176	\$494,960
<b>Used to Implement Strategy</b>					\$574,388	\$575,012	\$575,636	\$576,260	\$576,884	\$577,508
<b>Interest Accrued on Balance</b>					\$21,765	\$18,502	\$15,274	\$12,084	\$8,933	\$5,822
<b>Balance</b>				\$544,125	\$462,542	\$381,855	\$302,101	\$223,317	\$145,541	\$68,815

**Automated Check Structures and Control Systems in the Garwood Irrigation District, Short Term, Including a Supplementary W**

Full Implementation				Initial implementation	
<b>Control Stations</b>					
Item	Quantity	unit cost	total		
Water level sensors	2	\$ 1,500	\$ 3,000		
Controller	1	\$ 1,000	\$ 1,000		
Radio	1	\$ 1,500	\$ 1,500		
Antenna	1	\$ 1,200	\$ 1,200		
Fabrication/testing	1	\$ 5,000	\$ 5,000		
Field installation/testing	1	\$ 4,000	\$ 4,000		
Solar Panel with batteries	1	\$ 5,000	\$ 5,000		
Programming	1	\$ 2,000	\$ 2,000		
Design	1	\$ 5,000	\$ 5,000		
Subtotal per station			\$ 27,700	34 locations	8 locations
Subtotal for all stations			\$ 941,800		\$ 221,600
<b>Gate Operators</b>					
Gate Operators	2	\$ 5,000	\$ 10,000		
Valve Positioner	2	\$ 1,000	\$ 2,000		
Power Supply	1	\$ 10,000	\$ 10,000		
Gate Operator Installation	2	\$ 5,000	\$ 10,000		
Subtotal per station			\$ 32,000	31 locations	5 locations
Subtotal Operators			\$ 992,000		\$ 160,000
<b>New Gates/Structures</b>					
Gates	2	\$ 12,000	\$ 24,000		
Installation	2	\$ 10,000	\$ 20,000		
Canal Structure	1	\$ 30,000	\$ 30,000		
Structure Design	1	\$ 10,000	\$ 10,000		
Subtotal per structure			\$ 84,000	20 locations (estimated)	0 locations
Subtotal all structures			\$ 1,680,000		\$ -
<b>Central Control</b>					
MTU	1	\$ 2,000	\$ 2,000		
Radio	1	\$ 3,000	\$ 3,000		
Antenna	1	\$ 3,000	\$ 3,000		
Programming	1	\$ 15,000	\$ 15,000		
Remote Pump Control	1	\$ 200,000	\$ 200,000		
Connection to LCRA Trunk Ra	1	\$ 15,000	\$ 15,000		
SCADA	1	\$ 15,000	\$ 15,000		
Subtotal for system			\$ 253,000	1 location	1 location
<b>System Design</b>	1	\$ 500,000	\$ 500,000		\$ 500,000
Total System Cost			\$ 4,366,800		\$ 1,134,600
Contractor Mob, Demob, Bonding, Insurar		5%	\$ 218,340		\$ 56,730
Contractor Overhead and Profit		15%	\$ 655,020		\$ 170,190
Subtotal		\$0	\$ 5,240,160		\$ 1,361,520
E, A, L, F, B, C		35%	\$ 1,834,056		\$ 476,532
Total Capital Cost			\$ 7,074,216		\$ 1,838,052

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### Automated Check Structures and Control Systems in the Garwood Irrigation District, Short Term, Including a Supplementary Well



**Automated Check Structures and Control Systems in the Garwood Irrigation District, Short Term, Without a Supplementary Well**

**Projected Water Usage of HB 1437 Alliance Water**

Note: Projections made for LCRA use in "No Net Loss" evaluations. All values are in acre-feet per year.

Entity (amount of Alliance Water contract)	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
CTSUD (3472 acft/yr)	-	-	-	-	-	600	760	920	1,080	1,240	1,400
Georgetown (6944 acft/yr)	-	-	-	-	-	-	-	-	-	-	-
Liberty Hill (600 acft/yr)	-	-	-	-	-	-	100	200	300	400	500
Round Rock (11,444 acft/yr)	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	-	-	-	-	-	<b>600</b>	<b>860</b>	<b>1,120</b>	<b>1,380</b>	<b>1,640</b>	<b>1,900</b>

Source for Water Demand: D.Wheelock, 4/19/04; Williamson Co Water Facilities Plan; personal correspondence.

<b>Cost Creep</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>
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Maximum Acre feet	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000
Normal Rate	\$105.00	\$105.00	\$105.00	\$105.00	\$105.00	\$115.00	\$115.00	\$115.00	\$115.00	\$115.00	\$115.00
Inverted Block Rate	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00
Reserve Charge Rate %	50.00%										
Conservation Charge %	29.00%	29.00%	29.00%	29.00%	29.00%	29.00%	29.00%	29.00%	29.00%	29.00%	29.00%

Check for Lowest Ag Fund Balance: 57,862

Reserve Charge Volume						24,400	24,140	23,880	23,620	23,360	23,100
Total Volume for Conservation Charge - Normal	-	-	-	-	-	600	860	1,120	1,380	1,640	1,900

Reserve Charge	\$0	\$0	\$0	\$0	\$0	\$1,403,000	\$1,388,050	\$1,373,100	\$1,358,150	\$1,343,200	\$1,328,250
Normal Usage Charge	\$0	\$0	\$0	\$0	\$0	\$69,000	\$98,900	\$128,800	\$158,700	\$188,600	\$218,500
<b>Water Charge to go to LCRA</b>	\$0	\$0	\$0	\$0	\$0	\$1,472,000	\$1,486,950	\$1,501,900	\$1,516,850	\$1,531,800	\$1,546,750
Reserve Charge to Conservation Charge (\$/1000 GAL) based on reserve volume	\$0	\$0	\$0	\$0	\$0	\$406,870	\$402,535	\$398,199	\$393,864	\$389,528	\$385,193
(\$/1000 GAL) based on demand						\$0.051	\$0.051	\$0.051	\$0.051	\$0.051	\$0.051
						\$2.081	\$1.437	\$1.091	\$0.876	\$0.729	\$0.622
Normal Usage Charge to Conservation Charge (\$/1000 GAL) based on demand	\$0	\$0	\$0	\$0	\$0	\$20,010	\$28,681	\$37,352	\$46,023	\$54,694	\$63,365
						\$0.102	\$0.102	\$0.102	\$0.102	\$0.102	\$0.102
<b>Conservation Charge to go to Ag Fund</b>	\$0	\$0	\$0	\$0	\$0	\$426,880	\$431,216	\$435,551	\$439,887	\$444,222	\$448,558

Management Cost Component	\$ 25,000
Monitoring Cost Component	\$ 25,000

**Automated Check Structures and Control Systems in the Garwood Irrigation District, Short Term, Without a Supplementary Well**

**Capital Cost** \$ 1,838,052 \*See "Check Costs" for further detail.

**Annual O&M** \$ 45,951 \*based on SB1 O&M for pump stations

**Rate** 6.00%  
**Useful Life (Debt Term)** 5 years

**Annualized Capital Cost** \$436,347

**Total Annual Cost with O&M and M&M** \$532,298

**Interest Accrued on - balances:** 6%  
**Interest Accrued on + balances:** 4%

**Net Present Value Percentage** 6.0%

**Net Present Value** \$2,617,483

**Cumulative Total Acre-feet** 7,500

**Total \$ per Total Acre-feet** \$ 349.00

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
<b>Beginning Balance</b>				\$ 544,125	\$544,125	\$460,472	\$377,808	\$296,173	\$215,608	\$136,156
<b>Deposited to Ag Fund</b>					\$426,880	\$431,216	\$435,551	\$439,887	\$444,222	\$448,558
<b>Used to Implement Strategy</b>					\$532,298	\$532,298	\$532,298	\$532,298	\$532,298	\$532,298
<b>Interest Accrued on Balance</b>					\$21,765	\$18,419	\$15,112	\$11,847	\$8,624	\$5,446
<b>Balance</b>				\$544,125	\$460,472	\$377,808	\$296,173	\$215,608	\$136,156	\$57,862

Automated Check Structures and Control Systems in the Garwood Irrigation District, Short Term, Without a Supplementary Well

The Garwood Dist. Currently has 34 check structures in operation. 3 of these have motorized operators already installed. All other structures have screw type gates installed on the downstream face of a bridge/culvert which functions as the check structure.

Full Implementation				Initial implementation		
<b>Control Stations</b>						
Item	Quantity	unit cost	total			
Water level sensors	2	\$ 1,500	\$ 3,000			
Controller	1	\$ 1,000	\$ 1,000			
Radio	1	\$ 1,500	\$ 1,500			
Antenna	1	\$ 1,200	\$ 1,200			
Fabrication/testing	1	\$ 5,000	\$ 5,000			
Field installation/testing	1	\$ 4,000	\$ 4,000			
Solar Panel with batteries	1	\$ 5,000	\$ 5,000			
Programming	1	\$ 2,000	\$ 2,000			
Design	1	\$ 5,000	\$ 5,000			
Subtotal per station			\$ 27,700	34 locations		8 locations
Subtotal for all stations			\$ 941,800		\$ 221,600	
<b>Gate Operators</b>						
Gate Operators	2	\$ 5,000	\$ 10,000			
Valve Positioner	2	\$ 1,000	\$ 2,000			
Power Supply	1	\$ 10,000	\$ 10,000			
Gate Operator Installation	2	\$ 5,000	\$ 10,000			
Subtotal per station			\$ 32,000	31 locations		5 locations
Subtotal Operators			\$ 992,000		\$ 160,000	
<b>New Gates/Structures</b>						
Gates	2	\$ 12,000	\$ 24,000			
Installation	2	\$ 10,000	\$ 20,000			
Canal Structure	1	\$ 30,000	\$ 30,000			
Structure Design	1	\$ 10,000	\$ 10,000			
Subtotal per structure			\$ 84,000	20 locations		0 locations
Subtotal all structures			\$ 1,680,000	(estimated)	\$ -	
<b>Central Control</b>						
MTU	1	\$ 2,000	\$ 2,000			
Radio	1	\$ 3,000	\$ 3,000			
Antenna	1	\$ 3,000	\$ 3,000			
Programming	1	\$ 15,000	\$ 15,000			
Remote Pump Control	1	\$ 200,000	\$ 200,000			
Connection to LCRA Trunk Ra	1	\$ 15,000	\$ 15,000			
SCADA	1	\$ 15,000	\$ 15,000			1 location
Subtotal for system			\$ 253,000	1 location	\$ 253,000	
<b>System Design</b>	1	\$ 500,000	\$ 500,000		\$ 500,000	
Total System Cost			\$ 4,366,800		\$ 1,134,600	
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Subtotal		\$0	\$ 5,240,160		\$ 1,361,520	
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Total Capital Cost			\$ 7,074,216		\$ 1,838,052	

### Automated Check Structures and Control Systems in the Garwood Irrigation District, Short Term, Without a Supplementary Well

