Appendix E

Water Demand Information

Appendix E1

Water Use by County

Table E1-1. Catron County Water Use 1975 Through 2000

Use Category	Withdrawal (acre-feet)		Depletion (acre-feet)		Return Flow (acre-feet)		Withdrawal (acre-feet)	Total Depletion (acre-feet)	Total Return Flow (acre-feet)
	Surface Water	Ground Water	Surface Water	Ground Water	Surface Water	Ground Water			
2000 Water Year									
Commerical (self-supplied)	8	33	8	33	0	0	41	41	0
Domestic (self-supplied)	0	224	0	224	0	0	224	224	0
Industrial (self-supplied)	0	0	0	0	0	0	0	0	0
Irrigated Agriculture	19,624	339	2,738	196	16,886	143	19,963	2,934	17,029
Livestock (self-supplied)	157	175	157	175	0	0	332	332	0
Mining (self-supplied)	0	0	0	0	0	0	0	0	0
Power (self-supplied)	0	0	0	0	0	0	0	0	0
Public Water Supply	0	169	0	72	0	98	169	72	98
Reservoir Evaporation	0	0	0	0	0	0	0	0	0
Totals	19,789	941	2,903	700	16,886	241	20,729	3,603	17,127
1995 Water Year									
Commerical (self-supplied)	8	35	8	16	0	19	43	24	19
Domestic (self-supplied)	0	154	0	69	0	85	154	69	85
Industrial (self-supplied)	0	0	0	0	0	0	0	0	0
Irrigated Agriculture	18,143	343	2,536	197	15,607	146	18,486	2,733	15,753
Livestock (self-supplied)	269	288	269	288	0	0	557	557	0
Mining (self-supplied)	0	0	0	0	0	0	0	0	0
Power (self-supplied)	0	0	0	0	0	0	0	0	0
Public Water Supply	0	144	0	59	0	85	144	59	85
Reservoir Evaporation	0	0	0	0	0	0	0	0	0
Totals	18,420	964	2,813	629	15,607	335	19,384	3,442	15,942

Source: Sorensen, 1976; Sorensen, 1981; Wilson, 1986; Wilson, 1992; Wilson and Lucero, 1997; Wilson et al., 2003

Table E1-1. Catron County Water Use 1975 Through 2000

Use Category	Withdrawal (acre-feet)		Depletion (acre-feet)		Return Flow (acre-feet)		Withdrawal (acre-feet)	Total Depletion (acre-feet)	Total Return Flow (acre-feet)
	Surface Water	Ground Water	Surface Water	Ground Water	Surface Water	Ground Water			
1990 Water Year									
Commerical (self-supplied)	8	16	8	7	0	9	24	15	9
Domestic (self-supplied)	0	137	0	62	0	75	137	62	75
Industrial (self-supplied)	0	11	0	6	0	5	11	6	5
Irrigated Agriculture	18,153	1,869	1,592	1,441	16,561	428	20,022	3,033	16,989
Livestock (self-supplied)	308	332	308	332	0	0	640	640	0
Mining (self-supplied)	0	4	0	0	0	4	4	0	4
Power (self-supplied)	0	0	0	0	0	0	0	0	0
Public Water Supply	0	125	0	52	0	73	125	52	73
Reservoir Evaporation	0	0	0	0	0	0	0	0	0
Totals	18,469	2,494	1,908	1,900	16,561	594	20,963	3,808	17,155
1985 Water Year									
Commercial	0	10	0	5	0	5	10	5	5
Urban	0	0	0	0	0	0	0	0	0
Rural	0	229	0	104	0	125	229	104	125
Industrial	0	10	0	5	0	5	10	5	5
Irrigated Agriculture	9,128	377	1,127	173	8,001	204	9,505	1,300	8,205
Livestock	240	243	240	242	0	1	483	482	1
Minerals	0	3	0	0	0	3	3	0	3
Power	0	0	0	0	0	0	0	0	0
Stockpond Evaporation	886	0	886	0	0	0	886	886	0
Military	0	0	0	0	0	0	0	0	0
Fish and Wildlife	1,321	1	531	1	790	0	1,322	532	790
Recreation	0	0	0	0	0	0	0	0	0
Reservoir Evaporation	24	0	24	0	0	0	24	24	0
Totals	11,599	873	2,808	530	8,791	343	12,472	3,338	9,134

Source: Sorensen, 1976; Sorensen, 1981; Wilson, 1986; Wilson, 1992; Wilson and Lucero, 1997; Wilson et al., 2003

Table E1-1. Catron County Water Use 1975 Through 2000

Use Category	Withdrawal (acre-feet)		Depletion (acre-feet)		Return Flow (acre-feet)		Withdrawal (acre-feet)	Total Depletion (acre-feet)	Total Return Flow (acre-feet)
	Surface Water	Ground Water	Surface Water	Ground Water	Surface Water	Ground Water			
1980 Water Year									
Urban	0	0	0	0	0	0	0	0	0
Rural	0	163	0	73	0	90	163	73	90
Irrigated Agriculture	13,240	420	2,390	240	10,850	180	13,660	2,630	11,030
Livestock	274	280	274	279	0	1	554	553	1
Stockpond Evaporation	886	0	886	0	0	0	886	886	0
Commercial	0	10	0	6	0	4	10	6	4
Industrial	0	10	0	6	0	4	10	6	4
Minerals	0	4	0	3	0	1	4	3	1
Military	0	0	0	0	0	0	0	0	0
Power	0	0	0	0	0	0	0	0	0
Fish and Wildlife	554	0	554	0	0	0	554	554	0
Recreation	0	0	0	0	0	0	0	0	0
Reservoir Evaporation	25	0	25	0	0	0	25	25	0
Totals	14,979	887	4,129	607	10,850	280	15,866	4,736	11,130
1975 Water Year									
Urban	0	0	0	0	0	0	0	0	0
Rural	0	122	0	55	0	67	122	55	67
Irrigated Agriculture	4,170	700	1,740	320	2,430	380	4,870	2,060	2,810
Manufacturing	0	18	0	11	0	7	18	11	7
Minerals	0	0	0	0	0	0	0	0	0
Military	0	0	0	0	0	0	0	0	0
Livestock	311	310	311	310	0	0	621	621	0
Stockpond Evaporation	815	0	815	0	0	0	815	815	0
Power	0	0	0	0	0	0	0	0	0
Fish and Wildlife	590	0	590	0	0	0	590	590	0
Recreation	0	0	0	0	0	0	0	0	0
Reservoir Evaporation	0	0	0	0	0	0	0	0	0
Playa Lake Evaporation	200	0	200	0	0	0	200	200	0
Totals	6,086	1,150	3,656	696	2,430	454	7,236	4,352	2,884

Source: Sorensen, 1976; Sorensen, 1981; Wilson, 1986; Wilson, 1992; Wilson and Lucero, 1997; Wilson et al., 2003

Table E1-2. Grant County Water Use 1975 Through 2000

Use Category	Withdrawal (acre-feet)		Depletion (acre-feet)		Return Flow (acre-feet)		Withdrawal (acre-feet)	Total Depletion (acre-feet)	Total Return Flow (acre-feet)
	Surface Water	Ground Water	Surface Water	Ground Water	Surface Water	Ground Water			
2000 Water Year									
Commerical (self-supplied)	0	242	0	144	0	98	242	144	98
Domestic (self-supplied)	0	778	0	778	0	0	778	778	0
Industrial (self-supplied)	0	11	0	11	0	0	11	11	0
Irrigated Agriculture	25,771	4,100	4,008	2,402	21,763	1,698	29,871	6,410	23,461
Livestock (self-supplied)	202	217	202	217	0	0	419	419	0
Mining (self-supplied)	0	21,458	0	17,188	0	4,271	21,458	17,188	4,271
Power (self-supplied)	0	280	0	280	0	0	280	280	0
Public Water Supply	176	4,084	88	2,584	88	1,500	4,260	2,672	1,588
Reservoir Evaporation	0	0	0	0	0	0	0	0	0
Totals	26,149	31,170	4,298	23,603	21,851	7,567	57,319	27,901	29,418
1995 Water Year									
Commerical (self-supplied)	0	231	0	104	0	127	231	104	127
Domestic (self-supplied)	0	823	0	370	0	453	823	370	453
Industrial (self-supplied)	0	7	0	7	0	0	7	7	0
Irrigated Agriculture	31,309	5,183	3,875	3,019	27,434	2,164	36,492	6,894	29,598
Livestock (self-supplied)	319	335	319	335	0	0	654	654	0
Mining (self-supplied)	0	25,848	0	20,567	0	5,281	25,848	20,567	5,281
Power (self-supplied)	0	283	0	283	0	0	283	283	0
Public Water Supply	126	3,931	63	2,573	63	1,358	4,057	2,636	1,421
Reservoir Evaporation	0	0	0	0	0	0	0	0	0
Totals	31,754	36,641	4,257	27,258	27,497	9,383	68,395	31,515	36,880

Source: Sorensen, 1976; Sorensen, 1981; Wilson, 1986; Wilson, 1992; Wilson and Lucero, 1997; Wilson et al., 2003

Table E1-2. Grant County Water Use 1975 Through 2000

Use Category	Withdrawal (acre-feet)		Depletion (acre-feet)		Return Flow (acre-feet)		Withdrawal (acre-feet)	Total Depletion (acre-feet)	Total Return Flow (acre-feet)
	Surface Water	Ground Water	Surface Water	Ground Water	Surface Water	Ground Water			
1990 Water Year									
Commerical (self-supplied)	0	200	0	90	0	110	200	90	110
Domestic (self-supplied)	0	666	0	300	0	366	666	300	366
Industrial (self-supplied)	0	2	0	2	0	0	2	2	0
Irrigated Agriculture	25,241	3,997	3,429	2,384	21,812	1,613	29,238	5,813	23,425
Livestock (self-supplied)	302	324	302	324	0	0	626	626	0
Mining (self-supplied)	0	30,466	0	24,681	0	5,785	30,466	24,681	5,785
Power (self-supplied)	0	645	0	645	0	0	645	645	0
Public Water Supply	126	3,290	63	1,975	63	1,315	3,416	2,038	1,378
Reservoir Evaporation	0	0	0	0	0	0	0	0	0
Totals	25,669	39,590	3,794	30,401	21,875	9,189	65,259	34,195	31,064
1985 Water Year									
Commercial	0	10	0	6	0	4	10	6	4
Urban	0	1,667	0	834	0	833	1,667	834	833
Rural	0	1,226	0	614	0	612	1,226	614	612
Industrial	0	0	0	0	0	0	0	0	0
Irrigated Agriculture	27,738	3,667	2,817	1,921	24,921	1,746	31,405	4,738	26,667
Livestock	330	336	330	335	0	1	666	665	1
Minerals	10,087	12,797	4,156	9,022	5,931	3,775	22,884	13,178	9,706
Power	0	520	0	520	0	0	520	520	0
Stockpond Evaporation	836	0	836	0	0	0	836	836	0
Military	0	0	0	0	0	0	0	0	0
Fish and Wildlife	431	0	431	0	0	0	431	431	0
Recreation	0	11	0	10	0	1	11	10	1
Reservoir Evaporation	632	0	632	0	0	0	632	632	0
Totals	40,054	20,234	9,202	13,262	30,852	6,972	60,288	22,464	37,824

Source: Sorensen, 1976; Sorensen, 1981; Wilson, 1986; Wilson, 1992; Wilson and Lucero, 1997; Wilson et al., 2003

Table E1-2. Grant County Water Use 1975 Through 2000

Use Category	Withdrawal (acre-feet)		Depletion (acre-feet)		Return Flow (acre-feet)		Withdrawal (acre-feet)	Total Depletion (acre-feet)	Total Return Flow (acre-feet)
	Surface Water	Ground Water	Surface Water	Ground Water	Surface Water	Ground Water			
1980 Water Year									
Urban	0	2,457	0	1,228	0	1,229	2,457	1,228	1,229
Rural	0	1,445	0	723	0	722	1,445	723	722
Irrigated Agriculture	9,750	7,340	3,320	4,470	6,430	2,870	17,090	7,790	9,300
Livestock	352	361	352	359	0	2	713	711	2
Stockpond Evaporation	836	0	836	0	0	0	836	836	0
Commercial	0	3	0	2	0	1	3	2	1
Industrial	0	0	0	0	0	0	0	0	0
Minerals	9,936	13,842	4,019	9,777	5,917	4,065	23,778	13,796	9,982
Military	0	0	0	0	0	0	0	0	0
Power	0	520	0	520	0	0	520	520	0
Fish and Wildlife	431	0	431	0	0	0	431	431	0
Recreation	0	0	0	0	0	0	0	0	0
Reservoir Evaporation	870	0	870	0	0	0	870	870	0
Totals	22,175	25,968	9,828	17,079	12,347	8,889	48,143	26,907	21,236
1975 Water Year									
Urban	0	2,112	0	1,056	0	1,056	2,112	1,056	1,056
Rural	0	1,254	0	627	0	627	1,254	627	627
Irrigated Agriculture	6,860	10,680	3,390	5,880	3,470	4,800	17,540	9,270	8,270
Manufacturing	0	78	0	47	0	31	78	47	31
Minerals	9,393	11,305	4,978	7,903	4,415	3,402	20,698	12,881	7,817
Military	0	0	0	0	0	0	0	0	0
Livestock	344	344	344	344	0	0	688	688	0
Stockpond Evaporation	862	0	862	0	0	0	862	862	0
Power	0	0	0	0	0	0	0	0	0
Fish and Wildlife	202	0	202	0	0	0	202	202	0
Recreation	0	0	0	0	0	0	0	0	0
Reservoir Evaporation	1,400	0	1,400	0	0	0	1,400	1,400	0
Playa Lake Evaporation	0	0	0	0	0	0	0	0	0
Totals	19,061	25,773	11,176	15,857	7,885	9,916	44,834	27,033	17,801

Source: Sorensen, 1976; Sorensen, 1981; Wilson, 1986; Wilson, 1992; Wilson and Lucero, 1997; Wilson et al., 2003

Table E1-3. Hidalgo County Water Use 1975 Through 2000

Use Category	Withdrawal (acre-feet)		Depletion (acre-feet)		Return Flow (acre-feet)		Withdrawal (acre-feet)	Total Depletion (acre-feet)	Total Return Flow (acre-feet)
	Surface Water	Ground Water	Surface Water	Ground Water	Surface Water	Ground Water			
2000 Water Year									
Commerical (self-supplied)	0	512	0	509	0	4	512	509	4
Domestic (self-supplied)	0	193	0	193	0	0	193	193	0
Industrial (self-supplied)	0	6	0	3	0	3	6	3	3
Irrigated Agriculture	8,741	33,143	3,931	20,741	4,810	12,402	41,884	24,672	17,212
Livestock (self-supplied)	60	259	60	259	0	0	320	320	0
Mining (self-supplied)	0	4,332	0	4,115	0	217	4,332	4,115	217
Power (self-supplied)	0	0	0	0	0	0	0	0	0
Public Water Supply	0	907	0	453	0	453	907	453	453
Reservoir Evaporation	0	0	0	0	0	0	0	0	0
Totals	8,801	39,353	3,991	26,274	4,810	13,079	48,154	30,265	17,889
1995 Water Year									
Commerical (self-supplied)	0	458	0	299	0	159	458	299	159
Domestic (self-supplied)	0	177	0	80	0	97	177	80	97
Industrial (self-supplied)	0	74	0	38	0	36	74	38	36
Irrigated Agriculture	6,501	31,169	2,924	18,846	3,577	12,323	37,670	21,770	15,900
Livestock (self-supplied)	85	356	85	356	0	0	441	441	0
Mining (self-supplied)	0	5,173	0	4,914	0	259	5,173	4,914	259
Power (self-supplied)	0	0	0	0	0	0	0	0	0
Public Water Supply	0	1,468	0	734	0	734	1,468	734	734
Reservoir Evaporation	0	0	0	0	0	0	0	0	0
Totals	6,586	38,875	3,009	25,267	3,577	13,608	45,461	28,276	17,185

Source: Sorensen, 1976; Sorensen, 1981; Wilson, 1986; Wilson, 1992; Wilson and Lucero, 1997; Wilson et al., 2003

Table E1-3. Hidalgo County Water Use 1975 Through 2000

Use Category	Withdrawal (acre-feet)		Depletion (acre-feet)		Return Flow (acre-feet)		Withdrawal (acre-feet)	Total Depletion (acre-feet)	Total Return Flow (acre-feet)
	Surface Water	Ground Water	Surface Water	Ground Water	Surface Water	Ground Water			
1990 Water Year									
Commerical (self-supplied)	0	349	0	232	0	117	349	232	117
Domestic (self-supplied)	0	135	0	61	0	74	135	61	74
Industrial (self-supplied)	0	2	0	1	0	1	2	1	1
Irrigated Agriculture	8,611	23,355	4,425	14,419	4,186	8,936	31,966	18,844	13,122
Livestock (self-supplied)	103	454	103	453	0	1	557	556	1
Mining (self-supplied)	0	4,170	0	3,961	0	209	4,170	3,961	209
Power (self-supplied)	0	478	0	478	0	0	478	478	0
Public Water Supply	0	1,334	0	667	0	667	1,334	667	667
Reservoir Evaporation	0	0	0	0	0	0	0	0	0
Totals	8,714	30,277	4,528	20,272	4,186	10,005	38,991	24,800	14,191
1985 Water Year									
Commercial	0	153	0	96	0	57	153	96	57
Urban	0	836	0	418	0	418	836	418	418
Rural	0	199	0	101	0	98	199	101	98
Industrial	0	0	0	0	0	0	0	0	0
Irrigated Agriculture	267	33,351	179	16,461	88	16,890	33,618	16,640	16,978
Livestock	244	266	244	265	0	1	510	509	1
Minerals	0	5,663	0	5,423	0	240	5,663	5,423	240
Power	0	36	0	36	0	0	36	36	0
Stockpond Evaporation	780	0	780	0	0	0	780	780	0
Military	0	0	0	0	0	0	0	0	0
Fish and Wildlife	0	228	0	59	0	169	228	59	169
Recreation	0	0	0	0	0	0	0	0	0
Reservoir Evaporation	10	0	10	0	0	0	10	10	0
Totals	1,301	40,732	1,213	22,859	88	17,873	42,033	24,072	17,961

Source: Sorensen, 1976; Sorensen, 1981; Wilson, 1986; Wilson, 1992; Wilson and Lucero, 1997; Wilson et al., 2003

Table E1-3. Hidalgo County Water Use 1975 Through 2000

Use Category	Withdrawal (acre-feet)		Depletion (acre-feet)		Return Flow (acre-feet)		Withdrawal (acre-feet)	Total Depletion (acre-feet)	Total Return Flow (acre-feet)
	Surface Water	Ground Water	Surface Water	Ground Water	Surface Water	Ground Water			
1980 Water Year									
Urban	0	769	0	384	0	385	769	384	385
Rural	0	197	0	98	0	99	197	98	99
Irrigated Agriculture	6,290	61,310	2,970	38,330	3,320	22,980	67,600	41,300	26,300
Livestock	257	262	257	261	0	1	519	518	1
Stockpond Evaporation	790	0	790	0	0	0	790	790	0
Commercial	0	0	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0	0	0
Minerals	0	5,410	0	5,178	0	232	5,410	5,178	232
Military	0	0	0	0	0	0	0	0	0
Power	0	723	0	723	0	0	723	723	0
Fish and Wildlife	0	228	0	60	0	168	228	60	168
Recreation	0	0	0	0	0	0	0	0	0
Reservoir Evaporation	10	0	10	0	0	0	10	10	0
Totals	7,347	68,899	4,027	45,034	3,320	23,865	76,246	49,061	27,185
1975 Water Year									
Urban	0	987	0	494	0	493	987	494	493
Rural	0	114	0	57	0	57	114	57	57
Irrigated Agriculture	7,680	67,710	3,780	40,390	3,900	27,320	75,390	44,170	31,220
Manufacturing	0	4	0	2	0	2	4	2	2
Minerals	0	2,488	0	2,348	0	140	2,488	2,348	140
Military	0	0	0	0	0	0	0	0	0
Livestock	295	295	295	295	0	0	590	590	0
Stockpond Evaporation	655	0	655	0	0	0	655	655	0
Power	0	336	0	336	0	0	336	336	0
Fish and Wildlife	10	0	10	0	0	0	10	10	0
Recreation	0	0	0	0	0	0	0	0	0
Reservoir Evaporation	0	0	0	0	0	0	0	0	0
Playa Lake Evaporation	11,900	0	11,900	0	0	0	11,900	11,900	0
Totals	20,540	71,934	16,640	43,922	3,900	28,012	92,474	60,562	31,912

Source: Sorensen, 1976; Sorensen, 1981; Wilson, 1986; Wilson, 1992; Wilson and Lucero, 1997; Wilson et al., 2003

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Table E1-4. Luna County Water Use 1975 Through 2000

Use Category	Withdrawal (acre-feet)		Depletion (acre-feet)		Return Flow (acre-feet)		Withdrawal (acre-feet)	Total Depletion (acre-feet)	Total Return Flow (acre-feet)
	Surface Water	Ground Water	Surface Water	Ground Water	Surface Water	Ground Water			
2000 Water Year									
Commerical (self-supplied)	0	186	0	176	0	10	186	176	10
Domestic (self-supplied)	0	717	0	717	0	0	717	717	0
Industrial (self-supplied)	0	55	0	42	0	13	55	42	13
Irrigated Agriculture	22,509	91,674	10,425	57,786	12,084	33,888	114,183	68,211	45,972
Livestock (self-supplied)	83	342	83	342	0	0	424	424	0
Mining (self-supplied)	0	41	0	27	0	15	41	27	15
Power (self-supplied)	0	0	0	0	0	0	0	0	0
Public Water Supply	0	4,388	0	2,194	0	2,194	4,388	2,194	2,194
Reservoir Evaporation	0	0	0	0	0	0	0	0	0
Totals	22,592	97,403	10,508	61,283	12,084	36,120	119,995	71,791	48,204
1995 Water Year									
Commerical	0	192	0	139	0	53	192	139	53
Domestic	0	810	0	365	0	445	810	365	445
Industrial	0	62	0	44	0	18	62	44	18
Irrigated agriculture	21,785	119,550	10,048	71,356	11,737	48,194	141,335	81,404	59,931
Livestock	87	360	87	360	0	0	447	447	0
Mining	0	256	0	66	0	190	256	66	190
Power	0	0	0	0	0	0	0	0	0
Public water supply	0	4,210	0	2,105	0	2,105	4,210	2,105	2,105
Reservoir evaporation	0	0	0	0	0	0	0	0	0
Totals	21,872	125,440	10,135	74,435	11,737	51,005	147,312	84,570	62,742

Source: Sorensen, 1976; Sorensen, 1981; Wilson, 1986; Wilson, 1992; Wilson and Lucero, 1997; Wilson et al., 2003

Table E1-4. Luna County Water Use 1975 Through 2000

Use Category	Withdrawal (acre-feet)		Depletion (acre-feet)		Return Flow (acre-feet)		Withdrawal (acre-feet)	Total Depletion (acre-feet)	Total Return Flow (acre-feet)
	Surface Water	Ground Water	Surface Water	Ground Water	Surface Water	Ground Water			
1990 Water Year									
Commerical (self-supplied)	0	144	0	118	0	26	144	118	26
Domestic (self-supplied)	0	285	0	128	0	157	285	128	157
Industrial (self-supplied)	0	157	0	125	0	32	157	125	32
Irrigated Agriculture	5,280	98,527	2,295	58,691	2,985	39,836	103,807	60,986	42,821
Livestock (self-supplied)	96	423	96	422	0	1	519	518	1
Mining (self-supplied)	0	375	0	111	0	264	375	111	264
Power (self-supplied)	0	0	0	0	0	0	0	0	0
Public Water Supply	0	3,510	0	1,755	0	1,755	3,510	1,755	1,755
Reservoir Evaporation	0	0	0	0	0	0	0	0	0
Totals	5,376	103,421	2,391	61,350	2,985	42,071	108,797	63,741	45,056
1985 Water Year									
Commercial	0	12	0	7	0	5	12	7	5
Urban	0	3,196	0	1,598	0	1,598	3,196	1,598	1,598
Rural	0	537	0	269	0	268	537	269	268
Industrial	0	0	0	0	0	0	0	0	0
Irrigated Agriculture	33,062	106,825	10,579	50,563	22,483	56,262	139,887	61,142	78,745
Livestock	235	277	235	273	0	4	512	508	4
Minerals	0	422	0	298	0	124	422	298	124
Power	0	0	0	0	0	0	0	0	0
Stockpond Evaporation	190	0	190	0	0	0	190	190	0
Military	0	0	0	0	0	0	0	0	0
Fish and Wildlife	0	0	0	0	0	0	0	0	0
Recreation	0	395	0	260	0	135	395	260	135
Reservoir Evaporation	15	0	15	0	0	0	15	15	0
Totals	33,502	111,664	11,019	53,268	22,483	58,396	145,166	64,287	80,879

Source: Sorensen, 1976; Sorensen, 1981; Wilson, 1986; Wilson, 1992; Wilson and Lucero, 1997; Wilson et al., 2003

Table E1-4. Luna County Water Use 1975 Through 2000

Use Category	Withdrawal (acre-feet)		Depletion (acre-feet)		Return Flow (acre-feet)		Withdrawal (acre-feet)	Total Depletion (acre-feet)	Total Return Flow (acre-feet)
	Surface Water	Ground Water	Surface Water	Ground Water	Surface Water	Ground Water			
1980 Water Year									
Urban	0	3,094	0	1,547	0	1,547	3,094	1,547	1,547
Rural	0	512	0	256	0	256	512	256	256
Irrigated Agriculture	8,400	117,120	3,970	73,690	4,430	43,430	125,520	77,660	47,860
Livestock	225	237	225	234	0	3	462	459	3
Stockpond Evaporation	190	0	190	0	0	0	190	190	0
Commercial	0	53	0	32	0	21	53	32	21
Industrial	0	0	0	0	0	0	0	0	0
Minerals	0	427	0	290	0	137	427	290	137
Military	0	0	0	0	0	0	0	0	0
Power	0	0	0	0	0	0	0	0	0
Fish and wildlife	0	0	0	0	0	0	0	0	0
Recreation	0	276	0	255	0	21	276	255	21
Reservoir Evaporation	15	0	15	0	0	0	15	15	0
Totals	8,830	121,719	4,400	76,304	4,430	45,415	130,549	80,704	49,845
1975 Water Year									
Urban	0	2,954	0	1,477	0	1,477	2,954	1,477	1,477
Rural	0	435	0	218	0	217	435	218	217
Irrigated Agriculture	12,020	150,180	4,580	86,840	7,440	63,340	162,200	91,420	70,780
Manufacturing	0	62	0	37	0	25	62	37	25
Minerals	0	1,760	0	670	0	1,090	1,760	670	1,090
Military	0	0	0	0	0	0	0	0	0
Livestock	226	225	226	225	0	0	451	451	0
Stockpond Evaporation	20	0	20	0	0	0	20	20	0
Power	0	0	0	0	0	0	0	0	0
Fish and Wildlife	0	0	0	0	0	0	0	0	0
Recreation	0	0	0	0	0	0	0	0	0
Reservoir Evaporation	0	0	0	0	0	0	0	0	0
Playa Lake Evaporation	0	0	0	0	0	0	0	0	0
Totals	12,266	155,616	4,826	89,467	7,440	66,149	167,882	94,293	73,589

Source: Sorensen, 1976; Sorensen, 1981; Wilson, 1986; Wilson, 1992; Wilson and Lucero, 1997; Wilson et al., 2003

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Appendix E2

Municipal Water Use Data

Table E2-1. Catron County Public Water System Summary

Water System Name	Well Field/ Water Rights[a] (ac-ft/yr)	System Mailing Address / Phone Number	Type of System	Estimated Population Served	Estimated Number of Meter Connections	2002 Well System Production[b] (ac-ft/yr / gpy)	Metered Water[b] (ac-ft/yr / gpy)	Water Source Classification	System Source	Number of Active Wells	2002 Estimated Well Pumping Capacity (ac-ft/yr)	Number of Tanks	Total Capacity of Tanks (gallons)	% Loss[c]
Aragon MDWCA	8.54	P O Box 13 Aragon, NM 87820 (505) 533-6627	Unincorporated Community	45	12	5.5 1,792,000	---	Ground	Well	---	---	---	---	---
Homestead Landowners Association	10	P O Box 62 Datil, NM 87821 (505) 772-5599	Unincorporated Community	40	53	8.4 2,737,000	---	Ground	Wells	4	---	---	---	---
Pietown MDWCA	30	P O Box 3-N Pie Town, NM 87827 (505) 772-2608	Municipal	84	48	9.2 3,000,000	---	Ground	Well	3	56	1	40,000	---
Quemado Lake Estates	---	P O Box 188 Quemado, NM 87829 (505) 773-4651	Unincorporated Community	20	76	---	---	Ground	---	---	---	---	---	---
Quemado Water Works MDWCA	19.36	P O Box 42 Quemado, NM 87829 (505) 773-4775	Municipal	240	142	30.7 10,000,000	---	Ground	Well	1	---	1	100,000	---
Rancho Grande Water Association	30	P O Box 353 Reserve, NM 87830 (505) 533-6765	Unincorporated Community	150	83	12.2 3,969,000	---	Ground	Spring	---	58	1	65,000	---
Reserve Water Works	146.84	P O Box 587 Reserve, NM 87830 (505) 533-6276	Municipal	318	220	88.2 28,745,100	74.2 24,193,470	Ground	Well	1	565	2	200,000	14.3

[a] Water rights at or near current production well system.

[b] From records supplied by individual water systems to Engineers Inc.

[c] Based on pumped vs. metered

ac-ft/yr = Acre-feet per year

gpy = Gallons per year

--- = Municipality meters water use, but data were not provided for this study.

Table E2-2. Grant County Public Water System Summary

Water System Name	Well Field/ Water Rights [a] (ac-ft/yr)	System Mailing Address / Phone Number	Type of System	Estimated Population Served	Estimated Number of Meter Connections	2002 Well System Production [b] (ac-ft/yr / gpy)	2002 Metered Water [b] (ac-ft/yr / gpy)	Water Source Classification	System Source	Number of Active Wells	2002 Estimated Well Pumping Capacity (ac ft/yr)	Number of Tanks	Total Capacity of Tanks (Gallons)	% Loss [c]
Arenas Valley	from SVC	Unit 64, Box 6 Silver City, NM 88062 388-1750	Municipal	1,141	390	---	100.7 (32,799,000)	Ground	Silver City Wells	---	---	---	---	---
Bayard Municipal Water	397 + 70	P O Box 728 Bayard, NM 88023 537-3327	Municipal	2,536	945	336.4 109,600,000	268.5 (87,500,000)	Ground	Wells	6	Estimated 325 (6/02)	3	1,375,000	20.2
Casa Adobes	77	HC 68, Box 2540 Mimbres, NM 88049 534-1238	Unincorporated Community	150	102	26.8 8,729,000	26.8 (8,729,000)	Ground	Well	2	---	3	30,000	---
Ft. Bayard Medical Center	---	6000 Isleta SW Albuquerque, NM 87105 841-8978	Hospital	600	50	---	---	Ground	Well	---	---	---	---	---
G & S Water Works	---	8321 E. Fourth St. Tucson, AZ 85710 520-885-1176	Unincorporated Community	67	46	---	---	Ground	Well	---	---	---	---	---
Hanover MDWCA	---	P O Box 38 Hanover, NM 88041 537-6193	Municipal	300	145	20.5 6,680,500	15.9 (5,182,000)	Ground	Well	---	---	---	---	22.5
Hurley Water Supply (Phelps Dodge)	---	P O Box 65 Hurley, NM 88043 537-2287	Municipal	1,600	625	---	184.2 (60,028,000)	Ground	PD Wells	From PD	---	2	690,000	---
North Hurley MDWCA (from Hurley)	---	P O Box 583 Hurley, NM 88043 537-2714	Municipal	475	111	---	26.9 (8,756,000)	Ground	Hurley	---	---	0	0	---
Pinos Altos MDWCA	From SVC	P O Box 53027 Pinos Altos, NM 88053 534-9367	Municipal	382	132	---	31.4 (10,231,000)	Ground	Silver City Wells	---	---	---	---	---
Rio de Arenas Mobile Manor	---	P O Box 2995 Silver City, NM 88062 538-2176	Mobile Home Park	240	84	---	---	Ground	---	---	---	---	---	---
Rosedale MDWCA	From SVC	P O Box 5208 Silver City, NM 88062 538-0957	Unincorporated Community	337	102	---	---	Ground	Silver City Wells	---	---	---	---	---
Santa Clara Water System	514.8	P O Box 316 Santa Clara, NM 88026 537-2443	Municipal	1,944	714	228.9 74,586,000	177.1 (57,711,000)	Ground	Gallery and Wells	3	570	2	800,000	23.5
Silver City Water System [d]	4,430.92	P O Box 1188 Silver City, NM 88062 538-3731	Municipal	10,545	5,744 (2002)	2820.0 918,849,800	2147.2 (699,606,566)	Ground	Wells	4 Well Fields	9,355	12	8,340,000	14.6
Tyrone MDWCA	Part from SVC	P O Box 402 Tyrone, NM 88065 538-5443	Municipal	200	70	---	0.9 (300,000)	Ground	Silver City Wells	---	---	---	---	---
Tyrone Town Site Water System	From SVC	P O Box 649 Silver City, NM 88062 388-1543	Municipal	1,050	323	---	107 (34,863,681)	Ground	Silver City Wells	---	---	---	---	---
Whiskey Creek Mobile Ranch	23.31	200 Racetrack Road Silver City, NM 88061 538-2052	Mobile Home Park	63	42	3,376,250		Ground	Well	2	---	3	40,000	---

[a] Water rights at or near current production well system.

[b] From records supplied by individual water systems to Engineers Inc.; production records represent total withdrawals and do not account for return flows.

[c] Based on pumped vs. metered

[d] Includes Arenas Valley, Pinos Altos, Rosedale, and Tyrone

ac-ft/yr = Acre-feet per year

gpy = Gallons per year

--- = Municipality meters water use, but data were not provided for this study.

Table E2-3. Hidalgo County Public Water System Summary

Water System Name	Well Field/ Water Rights[a] (ac-ft/yr)	System Mailing Address / Phone Number	Type of System	Estimated Population Served	Estimated Number of Meter Connections	2002 Well System Production[b] (ac-ft/yr / gpy)	Metered Water[b] (ac-ft/yr / gpy)	Water Source Classification	System Source	Number of Active Wells	2002 Estimated Well Pumping Capacity (ac-ft/yr)	Number of Tanks	Total Capacity of Tanks (Gallons)	% Loss[c]
Animas School System	42	P O Box 85 Animas, NM 88020 (505) 548-2299	School	350	22	3.9 1,281,604	---	Ground	Well	2	---	1	12,000	---
Burgett Geothermal Greenhouses	---	P O Box 256A Animas, NM 88020 (505) 548-2353	Agriculture	100	15	---	---	Ground	Well	---	---	---	---	---
Glen Acres Water Coop	149.705	505 Dale Douglas Lordsburg, NM 88045 (505) 548-2353)	Mobile home park	200	72	---	---	Ground	Well	---	---	---	---	---
Lordsburg Water Supply System	2,030	206 S. Main Lordsburg, NM 88045	Municipal	3,380	1,100	781.0 254,486,000	---	Ground	Well	3	1280	2	2,800,000	---
Playas Townsite Water System	340	Phelps Dodge P O Box 67 Playas, NM 88009 (505) 436-2211	Municipal	329	240	---	---	Ground	Well	---	---	---	---	---
Rodeo MDWCA		P O Box 256 Rodeo, NM 88056 (520-805-0238)	Municipal	200	60	11.9 3,861,400	---	Ground	Well	---	---	1	---	---
Virden Water System	26.49	Route 1, Box 157-3 Duncan, AZ 85534 (505) 358-1000	Municipal	146	42	---	---	Ground	Well	1	130	1	47,000	---

[a] Water rights at or near current production well system.
[b] From records supplied by individual water systems to Engineers Inc.
[c] Based on pumped vs. metered

ac-ft/yr = Acre-feet per year
gpy = Gallons per year
--- = Municipality meters water use, but data were not provided for this study.

Table E2-4. Luna County Public Water System Summary

Water System Name	Well Field/ Water Rights [a] (ac-ft/yr)	System Mailing Address / Phone Number	Type of System	Estimated Population Served	Estimated Number of Meter Connections	2002 Well System Production [b] (ac-ft/yr / gpy)	Metered Water [b] (ac-ft/yr / gpy)	Water Source Classification	System Source	Number of Active Wells	2002 Estimated Well Pumping Capacity (ac-ft/yr)	Number of Tanks	Total Capacity of Tanks (Gallons)	% Loss [c]
Columbus Water System	119.1 757.2 654	P O Box 350 Columbus, NM 88029 (505) 531-2663	Municipal	1,765	714	208.5 67,924,000	---	Ground	Well	2	---	2	250,000	---
Deming Municipal Water System	4444	P O Box 706 Deming, NM 88031 (505) 544-0462	Municipal	16,000	5,000	4,075 1,328,000,000	3,927 1,279,050,000	Ground	Well	10	8,226	2	1,000,000	3.8
Gunter Mobile Home Park	---	P O Box 229 Deming, NM 88031 (505) 544-0462	Mobile Home Park	60	20	---	---	Ground	Well	---	---	---	---	---
Hidden Valley Ranch	---	12100 Hidden Valley Ranch Rd. Deming, NM 88030 (505) 546-3071	Mobile Home Park	150	163	---	---	Ground	Well	---	---	---	---	---
Pecan Park MDWCA	---	Lewis Lane, NE, SR 37 Deming, NM 88030 (505) 546-4698	Mobile Home Park	90	42	---	---	Ground	Well	---	---	---	---	---
Peoples Water Coop	---	P O Box 1592 Deming, NM 88031 (505) 546-3857	Community	118	24	---	---	Ground	Well	---	---	---	---	---
Pueblo de Luna Water System	---	P O Box 632 Silver City, NM 88062 (505) 388-5433	Community	70	36	---	---	Ground	Well	---	---	---	---	---

[a] Water rights at or near current production well system.
[b] From records supplied by individual water systems to Engineers Inc.
[c] Based on pumped vs. metered

ac-ft/yr = Acre-feet per year
gpy = Gallons per year
--- = Municipality meters water use, but data were not provided for this study.

Appendix E3

Water Use Information Sources: Personal Contacts and Unpublished Data

SOURCES OF WATER USE INFORMATION COMPILED BY ENGINEERS INC.

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Appendix E4

Growth Projections

PROJECTION OF SOUTHWEST REGIONAL GROWTH, 2000-2040
Southwest Planning & Marketing
July, 2004 (revised)

To project future water demand in the counties of the Southwest region of New Mexico, it is necessary to project the future growth of the area's population and economy. Growth must be forecast in each of eight sectors (two other sectors, fish and wildlife and reservoir evaporation, are not driven by demand):

1. Residential (self-supplied)
2. Commercial (self-supplied)
3. Municipal water supply
4. Industrial (self-supplied)
5. Power (self-supplied)
6. Mining (self-supplied)
7. Irrigated Agriculture
8. Livestock (self-supplied)

Growth is forecast in ten-year increments from 2000 to 2040. In the balance of this report, we project growth in each of these sectors. For convenience of organization, we have grouped the eight sectors into three categories:

1. Residential, municipal and commercial,
2. Industrial, mining, and power generation,
3. Irrigated agriculture and livestock.

The growth of the first category of water users – self-supplied-residential, self-supplied commercial and municipal users – parallels the growth of the regional population.

Process

We have projected the future growth of the population and growth of the sectors of the economy for the Southwest region on a County and sub-region level as a first step toward making a determination of potential future water use in the region. All projections are made using two different growth scenarios, referred to as Low and High.

We collected data on historic population growth in each of the counties and their communities, and examined other growth forecasts. In addition, we examined trends in land use, changes and trends in each sector, and proposed or potential future development. We used this information to guide the development of our High and Low growth forecasts and projected changes for each sector.

The county projections have further been broken down into sub-region figures in Grant, Hidalgo, and Luna counties. No sub-regions are included in Catron County because there are no large concentrations of people. The sub-regions are:

Grant County

1) Silver City
2) Mining District, referring to the area that includes the communities of Bayard, Hurley, and Santa Clara.
3) Balance of the County

Hidalgo County

1) Lordsburg
2) Balance of the County

Luna County

1) Deming
2) Balance of the County

Population Growth Projections

Future water supply requirements in New Mexico and the Southwest region will depend in large measure on the degree of future population growth. All the counties in the Southwest region are rural. There has been a national trend for businesses and self-employed individuals to relocate to rural communities with a high quality of life. This trend has spurred in-migration into the Rocky Mountain States to communities such as Santa Fe, Flagstaff, and Durango. This trend is partly a result of the Information Revolution and attendant telecommuting and partly a result of new wealth allowing the purchase of second homes. Rural migration is also bolstered by retirement to the Sunbelt. To the degree that this trend continues and communities in the Southwest region position themselves to take advantage of it; there will be additional growth in population.

To develop the population growth scenarios, we began with Bureau of Business and Economic Research (BBER) forecasts of population growth for the Southwest counties through 2060 (Alcantara and Lopez, 2003), prepared for the Interstate Stream Commission for the purpose of regional water planning. BBER used historic trends dating from 1960 to project population at the State and County levels. The current forecasts are based on these historic trends and data from the 2000 Census. We have modified the BBER forecasts to reflect economic factors and conditions as well as recent population trends that will affect population growth or decline in each of the counties. The BBER report (Alcantara and Lopez, 2003) was used as the high forecast in Catron and Luna Counties and as the low forecast in Grant and Hidalgo Counties. The process used to develop the estimates was to gather additional information and conduct interviews within the region to supplement BBER data.

Catron County

There is a trend toward converting ranch land to subdivisions in Catron County. Six subdivisions were approved by the County in 2000, ten subdivisions were approved in 2001, seven subdivisions were approved in 2002, five subdivisions were approved in 2003, and to date in 2004, two subdivisions have been approved by the County. The subdivisions range in size from the 16,000 acre Wild Horse Ranch subdivision, slated for development in 10 phases, to a 30 acre subdivision in the northeastern part of the county. Most have yet to be developed in any significant way. Many subdivisions are primarily

marketed to retirees and people who are purchasing second homes and vacation properties, particularly in the northern part of the county. This trend suggests that the population of Catron County will increase due to in-migration.

As a low estimate, we project the population of Catron County will remain constant, assuming that the in-migration due to new residential development will be balanced by out-migration and the County's negative natural population increase (births minus deaths). Reasons for out-migration might include a lack of economic opportunity and declining ranching activities because of governmental and environmental pressures.

As our High estimate, we used BBER population projections for Catron County. In this scenario we assume that the County's population will grow at a slow rate. We believe this growth will be driven by a rate of in-migration, particularly related to the new subdivisions, that is greater than the rate of out-migration and the negative natural population increase.

Catron Co. Population Projections

Estimated Annual County Growth Rate

`10	`20	`30	`40	
0.00%	0.00%	0.00%	0.00%	Low
1.15%	0.57%	0.13%	0.11%	High

Estimated County Population

`00	`10	`20	`30	`40	
3,567	3,567	3,567	3,567	3,567	Low
3,567	3,999	4,233	4,288	4,336	High

Grant County Population Projections

The economy of Grant has historically been driven by the mining sector. Despite recent economic diversification that includes a growing tourism industry and a retiree population, the local economy is still significantly affected by changes in the mining sector. Grant County recently experienced a large drop in employment opportunities that is showing its effects on the population of the County. As the savings and unemployment benefits run out, families of miners and others that are affected by the economic downturn, including 600 employees laid off from Stream International call center in Silver City, are beginning to move away from the area to find work.

However there are a variety of economic development efforts aimed at creating new employment opportunities, and the area is increasingly becoming an attractive location for retirees. Silver City and the Mining District -- an area that includes Santa Clara, Bayard and Hurley – are increasingly attracting retirees due to quality-of-life, favorable climate, recreational opportunities, and institutions such as Western New Mexico University and Gila Regional Medical Center. In addition, it is expected that area mines will begin to rehire employees when the price of copper on the world market reaches a price that once again makes it economically feasible to mine in the area.

We used the BBER projection as our Low growth scenario, with the exception of showing a decline from 2000 to 2010. This initial decline is due to the effects of mine layoffs and the continuing economic downturn in the County. After 2010 we project moderate growth to 2040 in expectation of renewed mining activities and increasing in-migration, particularly by retirees. Our High population projection follows this same logic, but has mine employment returning to 1998 levels and shows a more robust in-migration for quality-of-life reasons and retirement. The majority of the growth in the County will happen in Silver City and the Mining District, with the remainder of the County showing a similar pattern, but at a lesser growth rate.

Grant Co. Population Projections

Estimated Annual County Growth Rate

`10	`20	`30	`40	
-0.50%	0.61%	0.48%	0.41%	Low
-0.50%	1.00%	1.00%	1.00%	High

Estimated County Population

`00	`10	`20	`30	`40	
31,083	29,563	31,417	32,958	34,335	Low
31,083	29,563	32,656	36,073	39,847	High

Silver City Population Projections

Estimated Annual Silver City Growth Rate

`10	`20	`30	`40	
-0.60%	0.73%	0.58%	0.49%	Low
-0.60%	1.20%	1.20%	1.20%	High

Estimated Silver City Population

`00	`10	`20	`30	`40	
10,545	9,929	10,680	11,312	11,881	Low
10,545	9,929	11,187	12,604	14,201	High

Mining District Population Projections

Estimated Annual Mining District Growth Rate

`10	`20	`30	`40	
-0.55%	0.67%	0.53%	0.45%	Low
-0.55%	1.10%	1.10%	1.10%	High

Estimated Mining District Population

`00	`10	`20	`30	`40	
5,942	5,623	6,012	6,337	6,629	Low
5,942	5,623	6,273	6,998	7,808	High

Grant Balance Population Projections

Estimated Annual Balance Growth Rate

`10	`20	`30	`40	
-0.41%	0.49%	0.39%	0.33%	Low
-0.41%	0.82%	0.81%	0.80%	High

Estimated Balance Population

`00	`10	`20	`30	`40	
14,596	14,011	14,725	15,309	15,825	Low
14,596	14,011	15,196	16,470	17,838	High

Hidalgo County Population Projections

BBER population projections show an increasingly negative growth rate for Hidalgo County projected to 2040. We use those projections as our Low growth scenario with the exception of a slightly higher decline in population from 2000 to 2010 due to the loss of population resulting from Phelps Dodge completely closing operations in the town of Playas, causing virtual abandonment of the town of approximately 500 to 1000 people.

Our High growth scenario projects that the declining population trend will be reversed due in large part to the sale of Playas to New Mexico Tech for use as a research and training facility. New Mexico Tech projects that activities at Playas will provide jobs for between 83 and 110 full-time employees, and an additional 66 to 94 part-time employees by 2006. These numbers do not include any additional employment generated by companies that may locate in the proposed Playas research facility or the County's business park. We project that Lordsburg, which contains the majority of Hidalgo's population, will continue to be a major factor in determining overall population changes in the county and it will grow at rate less than the rest of the county.

The Low growth scenario assumes that a general decline in the overall county population will continue in Hidalgo and economic development projections for Playas will not be fully realized, thus Playas will not significantly impact the overall population of the County.

Hidalgo Co. Population Projections

Estimated Annual County Growth Rate

`10	`20	`30	`40	
-0.22%	-0.31%	-0.44%	-0.50%	Low
1.26%	0.53%	0.05%	0.01%	High

Estimated County Population

`00	`10	`20	`30	`40	
5,929	5,800	5,623	5,380	5,117	Low
5,929	6,723	7,085	7,121	7,129	High

Lordsburg Population Projections

Estimated Annual Lordsburg Growth Rate

`10	`20	`30	`40	
-0.22%	-0.32%	-0.45%	-0.51%	Low
0.63%	0.27%	0.03%	0.01%	High

Estimated Lordsburg Population

`00	`10	`20	`30	`40	
3379	3,304	3,201	3,060	2,908	Low
3379	3,598	3,695	3,704	3,706	High

Hidalgo Balance Population Projections

Estimated Annual Balance Growth Rate

`10	`20	`30	`40	
-0.21%	-0.30%	-0.43%	-0.49%	Low
2.80%	1.00%	0.08%	0.01%	High

Estimated Balance Population

`00	`10	`20	`30	`40	
2,550	2,496	2,422	2,320	2,209	Low
2,550	3,361	3,713	3,742	3,746	High

Luna County Population Projections

We used BBER growth projections for Luna County as our High growth scenario. This scenario assumes that planned border developments will be built and the County's major population center, Deming, will show significant growth, particularly in developments similar to the Country Club Estates retirement community now under construction near the Rio Mimbres Country Club golf course. The Deming City government has recently purchased agricultural water rights to support future growth. The City allocated $300,000 in 2001, $150,000 in 2002, and $150,000 in 2003 to purchase water rights. Economic development efforts, particularly the industrial park in Deming, also suggest that the County has the potential to support significant population growth. Our Low growth scenario assumes that national economic health and other factors dampen the growth projected in the High growth scenario by approximately half.

Luna Co. Population Projections

Estimated Annual County Growth Rate

`10	`20	`30	`40	
1.24%	1.04%	0.81%	0.64%	Low
2.48%	2.07%	1.61%	1.27%	High

Estimated County Population

`00	`10	`20	`30	`40	
25,189	28,493	31,598	34,253	36,510	Low
25,189	32,181	39,499	46,339	52,572	High

Deming Population Projections

Estimated Annual Deming Growth Rate

`10	`20	`30	`40	
1.49%	1.25%	0.97%	0.77%	Low
2.98%	2.48%	1.93%	1.52%	High

Estimated Deming Population

`00	`10	`20	`30	`40	
14,116	16,363	18,524	20,405	22,027	Low
14,116	18,927	24,190	29,291	34,074	High

Luna Balance Population Projections

Estimated Annual Balance Growth Rate

`10	`20	`30	`40	
0.92%	0.75%	0.58%	0.45%	Low
1.81%	1.45%	1.08%	0.82%	High

Estimated Balance Population

`00	`10	`20	`30	`40	
11,073	12,130	13,075	13,848	14,482	Low
11,073	13,255	15,309	17,048	18,498	High

Southwest New Mexico Population Projections

The overall growth of the region is the sum of the individual population projections for each county. We project the Southwest region will grow from a population of under 66,000 in 2000 to a population of almost 80,000 in the Low growth scenario to 102,000 in the High growth scenario by 2040. Under the Low growth scenario, most of the growth will occur after 2010. The growth for the region under the high projection is 53% after the year 2030 which is in line with BBER's national projection of U.S. population increase by 33% in the year 2030 with a majority of the growth in the Southwestern U.S. (Roepke, 2005).

Southwest Regional Projections

Estimated Regional Population

`00	`10	`20	`30	`40	
65,858	66,996	71,744	75,619	78,929	Low
65,858	71,116	81,761	92,073	102,128	High

1) Residential, Commercial, & Municipal Sector Projections

Introduction

Future water demand by residential self-supplied, commercial self-supplied and municipal users will depend in large part on the degree of future population growth. (Of course, demand will also be affected by other factors, such as the cost of water and electricity and the availability of new water-conserving technologies.) The Low scenario for each of the counties assumes that the residential, commercial, and municipal sectors will follow the Low population projection for its corresponding county, and the High projection assumes that the same sectors will follow the High population projection for its corresponding county.

We conducted extensive interviews within the region to identify factors that could affect growth in the County as a whole and within each of the sub-regions. (See list of Contacts.) What follows are sector growth projections, tables with projected annual

growth rates, and narratives describing factors that could affect sector growth in each county.

Catron

There is a trend toward converting ranch land to subdivisions in Catron County. The anticipated scale and rate of development are not expected to have a substantial impact on future water consumption rates. This type of development is typically very low density, consisting of large lots or "ranchettes" rather than urban subdivision forms that have much higher densities.

Catron is a rural county, and the municipal and commercial sectors currently consume very little water. The largest community in Catron is Reserve, with a population of just 387 residents. A small labor force, underdeveloped infrastructure, and scarce services will limit large-scale municipal and commercial growth between now and 2040 in both Reserve and the remainder of the County.

Catron County Annual Growth Rate

	`10	`20	`30	`40	
Residential	0.00%	0.00%	0.00%	0.00%	Low
	1.15%	0.57%	0.13%	0.11%	High
Municipal	0.00%	0.00%	0.00%	0.00%	Low
	1.15%	0.57%	0.13%	0.11%	High
Commercial	0.00%	0.00%	0.00%	0.00%	Low
	1.15%	0.57%	0.13%	0.11%	High

Grant

Growth of the residential, municipal, and commercial sectors in Grant County will most likely be driven by increased tourism and in-migration of residents seeking quality of life, including retirees. The largest increase in new residents is expected to happen in the Silver City area, and especially in the Mining District communities of Bayard, Hurley, and Santa Clara, due to their proximity to services, well-developed infrastructure, leisure activities, and reasonably-priced housing stock. Increased tourism is currently shifting and will continue to shift the focus of commercial development toward services for people who visit the area, including lodging facilities, restaurants, and other similar businesses. In addition to the focus on tourism, businesses that serve County residents will also continue to locate in the Silver City area, which is the center of the County's commerce with many restaurants and stores, including a Super Wal-Mart.

Grant County Annual Growth Rate

	`10	`20	`30	`40	
Residential	-0.50%	0.61%	0.48%	0.41%	Low
	-0.50%	1.00%	1.00%	1.00%	High
Municipal	-0.50%	0.61%	0.48%	0.41%	Low
	-0.50%	1.00%	1.00%	1.00%	High
Commercial	-0.50%	0.61%	0.48%	0.41%	Low
	-0.50%	1.00%	1.00%	1.00%	High

Hidalgo

Hidalgo County, much like Catron County, has a very low population, with only 5,929 residents in 2000. Unlike Catron, however, a large percentage of the County's population can be found in a single population center. The population of Lordsburg in 2000 was 3,379. Lordsburg is the commercial center of the County and also caters to travelers on Interstate 10. Unlike Grant and Catron Counties, Hidalgo County is not expected to grow significantly due to in-migration of new residents seeking second homes, retirement homes, or relocation for quality-of-life reasons. Near-term and long-term development--including housing developments, tourism projects, and the purchase of the community of Playas by New Mexico Tech – are not expected to substantially alter the growth rate of these sectors in Hidalgo County.

Our Low estimate anticipates there will be no growth in the residential, municipal and commercial sectors in Hidalgo County between now and 2040, due to the lack of a large population to support large-scale commercial development. Our High estimate anticipates that there will be slight growth based on in-migration due to the development and expansion of Playas, and economic development initiatives that will attract new residents and businesses to the area.

Hidalgo County Annual Growth Rate

	`10	`20	`30	`40	
Residential	-0.22%	-0.31%	-0.44%	-0.50%	Low
	1.26%	0.53%	0.05%	0.01%	High
Municipal	-0.22%	-0.31%	-0.44%	-0.50%	Low
	1.26%	0.53%	0.05%	0.01%	High
Commercial	-0.22%	-0.31%	-0.44%	-0.50%	Low
	1.26%	0.53%	0.05%	0.01%	High

Luna

Luna County has nearly five times the population of neighboring Hidalgo County. Like Hidalgo, it has one major city, Deming, with a population of 14,116 residents in 2000. The growth of the residential, municipal, and commercial sectors in Deming will be driven to some extent by "snowbirds" who retire to the area for the mild climate, much as they retire to Phoenix and Tucson for the same reason. This is already happening with several retirement communities being built or planned, particularly the Country Club Estates retirement community southeast of the City near the golf course. Commercial and municipal growth and water needs in Deming will be driven by the needs of these citizens, as well as catering to tourists and travelers on Interstate 10.

The growth of the municipal sector and its respective water use is based on population growth and does not take into account the power generating facility currently under construction that will use municipal water.

The remainder of the County will maintain its predominantly agricultural character and is not projected to have any significant residential, municipal, or commercial growth.

Luna County Annual Growth Rate

	`10	`20	`30	`40	
Residential	1.24%	1.04%	0.81%	0.64%	Low
	2.48%	2.07%	1.61%	1.27%	High
Municipal	1.24%	1.04%	0.81%	0.64%	Low
	2.48%	2.07%	1.61%	1.27%	High
Commercial	1.24%	1.04%	0.81%	0.64%	Low
	2.48%	2.07%	1.61%	1.27%	High

Growth projection for the municipal sector does not include potential water use in power generation.

2) Industrial, Power Generation & Mining Sectors

Introduction

Although the Industrial sector in the Southwest counties is not a large driver of the region's economy, power generation is becoming increasingly prominent and mining has been one of the major economic drivers of Grant County for decades. These sectors have the potential to use huge amounts of water, depending on the scale, type, and processes used to mine, generate power or produce industrial products. It is important to determine each county's development capacity and growth potential for these sectors.

Catron

Catron County has few assets in terms of transportation or infrastructure, and it has a small labor force, indicating that industrial development or power generation are unlikely to be developed in the County. The exception is industrial activity related to the harvesting and processing of small-diameter timber. A new sawmill in Catron County, the first since the forestry industry collapsed in the early 1990s, is currently employing 5 full-time workers. It is expected that the mill will eventually employ up to 25 people, and it will support an additional 25 people in value-added businesses.

Catron currently has no mining activity. The Fence Lake Coal Mine Project, planned for an area 14 miles north of Quemado, partially in Catron County, never materialized. The mine would have covered 18,000 acres and yielded up to 80 million tons of coal over 50 years.

Catron County Annual Growth Rate

	`10	`20	`30	`40	
Industrial	0.00%	0.00%	0.00%	0.00%	Low
	0.00%	0.00%	0.00%	0.00%	High
Mining	0.00%	0.00%	0.00%	0.00%	Low
	0.00%	0.00%	0.00%	0.00%	High
Power Generation	0.00%	0.00%	0.00%	0.00%	Low
	0.00%	0.00%	0.00%	0.00%	High

Grant

The mining industry has dominated the economy of Grant County for most of the twentieth century and has historically used the largest amount of water, accounting for 62 percent of all consumption. Recently, however, Phelps Dodge Mining Company has curtailed operations at their Cobre mine near Bayard and their Tyrone mine south of Silver City due to a drop in copper prices. There is no foreseeable new mining activity in the region that will dramatically increase water use. Water use associated with mining in the next twenty to forty years in the Silver City area will primarily be in reclamation of the area mines.

We project the mining sector to hold steady at its present rate of use as a Low estimate or increase to previous levels of use similar to those of full-scale operation as the High estimate as Phelps Dodge transitions to reclamation activities.

Potential growth in the industrial sector is limited in Grant County. There are several small-scale industrial parks, including the Grant County industrial park at the regional airport and several parks in communities near Silver City. These parks will not accommodate large-scale industrial development, which would be more likely to locate in Deming. As a High estimate, we project that growth will initially be strong in the industrial sector as some companies locate in the industrial parks, but will significantly decrease in the next forty years. The Low scenario shows no growth for this sector.

Grant County Annual Growth Rate

	`10	`20	`30	`40	
Industrial	0.00%	0.00%	0.00%	0.00%	Low
	5.00%	3.00%	1.00%	0.00%	High
Mining	0.00%	0.00%	0.00%	0.00%	Low
	2.00%	2.00%	2.00%	2.00%	High
Power Generation	0.00%	0.00%	0.00%	0.00%	Low
	0.00%	0.00%	0.00%	0.00%	High

Hidalgo

Hidalgo does not currently have either significant industrial or mining activities in the County. The closure of the Phelps Dodge smelter in Playas represents an almost complete cessation of mining-related activity in Hidalgo County, aside from some small-scale aggregate mining. There is the potential for industrial development in Lordsburg because of the town's proximity to transportation routes, land availability, and nearby power plants. A business park currently under development in Hidalgo County is expected to build out in the next ten years and include up to twenty businesses. The businesses are expected to employ 600 to 1000 people, mostly in manufacturing, and particularly in machining jobs to support activities at nearby Playas. In addition, a research facility will be located at Playas that will provide space for companies whose business focus is homeland security research, development, or training.

The county is well suited for small-scale, gas-fired power plants that provide additional power to the grid during peak capacity times. The area is ideal for this type of development due to access to natural gas lines, land availability, and close proximity to existing power transmission lines. In fact, PNM built an 80 megawatt power plant in Lordsburg in 2002 and Tri-State Generation & Transmission Association is currently completing a 160 megawatt plant in the County.

Our High growth projection for this sector, particularly power generation, assumes that the West will continue to grow, demanding increasing amounts of power. In this scenario we predict that the power generating capacity currently found in the county will double. As a Low growth scenario, we assume that the current generating capacity in the county, coupled with power plant projects outside the county and the state, will satisfy current demand and population growth will taper off. Using these assumptions, we feel the sector will show no further growth in the next forty years.

Hidalgo County Annual Growth Rate

	`10	`20	`30	`40	
Industrial	0.00%	0.00%	0.00%	0.00%	Low
	1.00%	1.00%	0.00%	0.00%	High
Mining	*	0.00%	0.00%	0.00%	Low
	*	0.00%	0.00%	0.00%	High
Power Generation	**	0.00%	0.00%	0.00%	Low
	**	7.00%	0.00%	0.00%	High

* Change to near zero activity due to the closure of the smelter at Playas.

** Growth from a zero base due to development of 240 MW of generating capacity.

Luna

Duke Energy is constructing a 160 Megawatt power generation plant east of Deming similar to the type of plants recently built in Hidalgo County. It uses combustion turbines to supply electricity during peak demand. The State requires that the water use at the plants be metered. The State Engineers Office indicated that the plant is permitted to use up to 3000 acre-feet of water per year. The water that will be used is not self-supplied, but instead is part of the City of Deming municipal system. This plant is representative of a trend in locating power generation facilities in the area. Power generation is one of the sectors in which has the potential for significant growth in the next ten to twenty years, given the right economic circumstances.

Deming has one of the largest industrial parks in the region. This is an area of potential growth considering transportation access, land availability and apparent water availability for future growth.

Luna County Annual Growth Rate

	`10	`20	`30	`40	
Industrial	2.00%	2.00%	2.00%	2.00%	Low
	5.00%	4.00%	3.00%	2.00%	High
Mining	0.00%	0.00%	0.00%	0.00%	Low
	0.00%	0.00%	0.00%	0.00%	High
Power Generation	*	0.00%	0.00%	0.00%	Low
	*	7.00%	0.00%	0.00%	High

* Growth from a zero base due to development of 160 MW of generating capacity.

3) Irrigated Agriculture & Livestock

Agriculture has traditionally been the mainstay of the economies of both Luna and Hidalgo counties. Since 1970 Catron, Hidalgo, and Luna counties have seen an increase in the amount of irrigated cropland. Only Grant County has seen a decline in irrigated agriculture.

In examining the irrigated agriculture sector for the Southwest region, we use the US Department of Agriculture figures for Acres of Irrigated Cropland as one of the sources for making projections in this sector. This figure, published annually, includes land that has the potential to be irrigated or has previously been irrigated, even if it is idle, fallow, or diverted to other uses during the reporting year. Typically the amount of land that is actually irrigated in any given year is some fraction of the Acres of Irrigated Cropland figure. For example, in 1986 Luna County had 73,950 acres of irrigated cropland. However, only 38,246 acres were actually planted with crops that required irrigation that year. Nevertheless, we use the Irrigated Cropland figure because it represents the amount of land that has the potential to be irrigated in a given year, assuming there are no limiting factors such as low crop prices, drought, the need to let land lie fallow, or other factors that prevent farmers from planting crops that require irrigation. In effect it represents the total amount of land that could potentially require water for irrigation in a County in a given year.

The following are factors that contribute to the potential for changes in both the irrigated agriculture and livestock sectors in the Southwest region.

Catron

Livestock has, and continues to be, the primary economic driver of the economy of Catron County, despite the irrigated agriculture in the County.

Compared to the other counties in the region, irrigated agriculture is relatively small, with total irrigated cropland at 4,360 acres. In 1998, of the 4,360 acres of available irrigated cropland, 3,385 of those acres were actually irrigated. However, despite the increase in irrigated cropland, it is not expected that the amount of irrigated agriculture will significantly increase in the next forty years. Our high estimate is that it will remain at its current levels, and our low estimate is that it will decline due to drought.

Most of the activity in the livestock sector consists of range grazing, primarily of cattle. This requires widely dispersed wells feeding stock tanks. One head typically consumes 20 gallons per day. Pressure from environmentalists that oppose grazing on the grounds that it damages the environment, a continuing drought that will limit the number of head that can be supported per acre, and the conversion of some ranches to low density housing subdivisions are all factors that could limit the amount of future livestock grazing in Catron County. Therefore, we project that, as a High estimate, the livestock sector will have a low growth rate, and as a Low estimate, it will remain at current levels.

Catron County Annual Growth Rate

	`10	`20	`30	`40	
Irrigated Agriculture	-1.00%	-1.00%	-1.00%	-1.00%	Low
	0.00%	0.00%	0.00%	0.00%	High
Livestock	0.00%	0.00%	0.00%	0.00%	Low
	0.50%	0.50%	0.50%	0.50%	High

Grant

The second largest water user in the County, after mining, is irrigated agriculture, which consumes approximately 23 percent of the total water used in the County. The amount of land in irrigated agriculture declined approximately 13% from 1970 to 1984 and has since held steady at 6,950 acres. We project that irrigated agriculture will either continue to hold steady (High estimate) or show a gradual decline (Low estimate).

There is little significant livestock activity in the County, and there are no foreseeable trends that will change to this sector. We project that water use associated with the livestock sector will grow at a low rate as a High projection, or will have no growth as a Low projection.

Grant County Annual Growth Rate

	`10	`20	`30	`40	
Irrigated Agriculture	-1.00%	-1.00%	-1.00%	-1.00%	Low
	0.00%	0.00%	0.00%	0.00%	High
Livestock	0.00%	0.00%	0.00%	0.00%	Low
	0.50%	0.50%	0.50%	0.50%	High

Hidalgo

Irrigated agriculture has historically used, and continues to use the largest amount of water in Hidalgo County, consuming 82 percent. Of all of the counties in the Southwest region, it is projected the Hidalgo has the most potential and impetus to increase the amount of irrigated agriculture it supports. The total amount of irrigated cropland in the County has increased from 35,240 acres in 1970 to 38,420 acres in 2000. We project that the amount of irrigated agriculture will show a moderate increase as a High estimate and will maintain current levels as a Low estimate.

A 20,000 head feedlot for cattle is expected to begin operating in 2004-05 in Hidalgo, significantly increasing the amount of livestock in the County. In addition, there is the possibility of another 20,000 head feedlot being built in the next five to seven years.

Assuming that one head will consume approximately 20 gallons of water per day, 20,000 head will require 400,000 gallons of water per day. 400,000 gallons equates to about one and a quarter acre-feet. For an entire year, 20,000 head would consume almost 450 acre-feet of water.

In both our High and our Low projection for the Livestock sector we show a large increase in the 2000-2010 time period due to the construction of proposed feed lots. In both scenarios we show the sector returning to a zero to low growth scenario after 2010.

Hidalgo County Annual Growth Rate

	`10	`20	`30	`40	
Irrigated Agriculture	0.00%	0.00%	0.00%	0.00%	Low
	1.00%	1.00%	1.00%	1.00%	High
Livestock	8.82%	0.00%	0.00%	0.00%	Low
	13.46%	0.50%	0.50%	0.50%	High

Luna

Irrigated agriculture has historically used, and continues to use, the largest amount of water in Luna County, consuming 95 percent. Of all the counties in the Southwest region, Luna has the most land in irrigated agriculture, holding steady at 73,950 acres. This is an increase of almost 2,500 acres since 1970. However, power producers and the City of Deming are buying agricultural water rights for future use in residential, commercial and industrial development. Therefore, we predict that the amount of irrigated agriculture will remain at near current levels as a High estimate or slowly decline over the next forty years as a Low estimate.

We do not foresee any significant changes in the livestock sector that would suggest large changes in water use in the County.

Luna County Annual Growth Rate

	`10	`20	`30	`40	
Irrigated Agriculture	-1.00%	-1.00%	-1.00%	-1.00%	Low
	0.00%	0.00%	0.00%	0.00%	High
Livestock	0.00%	0.00%	0.00%	0.00%	Low
	0.50%	0.50%	0.50%	0.50%	High

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Appendix E5

Projected Water Use

Projected Water Uses by Sector and County

Catron County	2000 Total Withdrawal (acre-feet)	10 Year % Growth by 2010	2010 Water Use (acre-feet)	10 Year % Growth by 2020	2020 Water Use (acre-feet)	10 Year % Growth by 2030	2030 Water Use (acre-feet)	10 Year % Growth by 2040	2040 Water Use (acre-feet)
commercial low	41 (1)	0	41	0	41	0	41	0	41
commercial high (3)	41	12	46	5.8	49	1.3	49	1.1	50
industrial low	8 (1)	0	8	0	8	0	8	0	8
industrial high	8	0	8	0	8	0	8	0	8
mining low	0 (1)	0	0	0	0	0	0	0	0
mining high (4)	0	0	1,000	0	1,000	0	1,000	0	1,000
power low	0	0	0	0	0	0	0	0	0
power high	0	0	0	0	0	0	0	0	0
irrigated land low	19,963 (1)	-9.6	18,055	-9.6	16,329	-9.6	14,768	-9.6	13,356
irrigated land high	19,963	14	22,764 (2)	0.0	22,764	0.0	22,764	0.0	22,764
livestock low	332 (1)	0	332	0	332	0	332	0	332
livestock high	332	5.1	349	5.1	367	5.1	386	5.1	405
domestic low	268 (5)	0	268	0	268	0	268	0	268
domestic high	268	12	301	5.8	318	1.3	322	1.1	326
domestic highest	268	12.11	301	12.11	337	12.11	377	12.11	422
Safety Factor	916		1,008		1,029		1,034		1,039

(1) OSE 2000 value

(2) Assumes 20%± of 14,000 acre feet of CAP water available by 2010 in Catron County.

(3)

Estimated Annual Growth Rates			
2010	2020	2,030	2040
0.0 Low	0.0 Low	0.0 Low	0.0 Low
1.15 High	0.57 High	0.13 High	0.11 High
1.15 Highest	1.15 Highest	1.15 Highest	1.15 Highest

(4) Assumes CO_2 mining is underway by 2010.

(5) DBS&A estimate

Projected Water Uses by Sector and County

Grant County	2000 Total Withdrawal (acre-feet)	10 Year % Growth by 2010	2010 Water Use (acre-feet)	10 Year % Growth by 2020	2020 Water Use (acre-feet)	10 Year % Growth by 2030	2030 Water Use (acre-feet)	10 Year % Growth by 2040	2040 Water Use (acre-feet)
commercial low (3)	242 (1)	-4.9	230	6.2	244	5	256	4	266
commercial high	242	-4.9	230	1,100	3,030 (2)	10.46	3,347	10.46	3,697
industrial low	11 (1)	0	11	0	11	0	11	0	11
industrial high	11	62.9	18	34.4	24	10.5	27	0	27
mining low	21,458 (1)	0.0	21,458	0.0	21,458	0.0	21,458	0.0	21,458
mining high	21,458 (4)	77	38,000	0	38,000	0	38,000	0	38,000
power low	280 (1)	0	280	0	280	0	280	0	280
power high	280	0	280	0	280	0	280	0	280
irrigated land low	29,871	-9.6	27,015	-9.6	24,433	-9.6	22,097	-9.6	19,984
irrigated land high	29,871	4.7	31,272	0.0	31,272	0.0	31,272	0.0	31,272
livestock low	419 (1)	0	419	0	419	0	419	0	419
livestock high	419	5.1	440	5.1	463	5.1	487	5.1	511
domestic low	923 (1)	-5	876	6.2	931	5	1,017	4	1,057
domestic high	923	-5	876	10.5	968	10.5	1,070	10.5	1,182
domestic highest	923	10.5	1,019	10.5	1,126	10.5	1,245	10.5	1,375
Safety Factor	1,213		1,342		1,453		1,575		1,709

(1) OSE 2000 value

(2) Assumes 10% of 14,000 acre-feet of water available by 2010, for irrigation and 20% by 2020 for commercial.

(3)

Estimated Annual Growth Rates			
2010	2020	2030	2040
-0.50 Low	0.61 Low	0.48 Low	0.41 Low
-0.50 High	1.00 High	1.00 High	1.00 High
1.00 Highest	1.00 Highest	1.00 Highest	1.00 Highest

(4) High value based on 29,000 acre feet available at Chino/Cobre and 9,000 acre-feet use at Tyrone.

Projected Water Uses by Sector and County

Hidalgo County	2000 Total Withdrawal (acre-feet)		10 Year % Growth by 2010		2010 Water Use (acre-feet)		10 Year % Growth by 2020	2020 Water Use (acre-feet)	10 Year % Growth by 2030	2030 Water Use (acre-feet)	10 Year % Growth by 2040	2040 Water Use (acre-feet)
commercial low (3)	512	(1)	-2.2		501		-3.1	486	-4.3	465	-4.9	442
commercial high	512		13.4		580		5.4	612	0.5	615	0.1	616
industrial low (3)	6	(1)	0.0		6		0.0	6	0.0	6	0.0	6
industrial high	6		10.5		7		10.5	7	10.5	8	10.5	9
												0
mining low	4,332	(1)	-90	(6)	433		0.0	433	0.0	433	0.0	433
mining high (4)	4,332		-90	(6)	433		0.0	433	0.0	433	0.0	433
												0
power low	0	(1)	--		0		0	0	0	0	0	0
power high	0		--		720	(5)	0	720	0	720	0	720
												0
irrigated land low	41,884	(1)	30	(7)	54,449		-9.6	49,244	-9.6	44,536	-9.6	40,278
irrigated land high	41,884		36.7	(2,7)	57,247		0	57,247	0	57,247	0	57,247
												0
livestock low	320	(1)	132.9		745		0.0	745	0.0	745	0.0	745
livestock high	320		254	(4)	1,131		5.1	1,189	5.1	1,250	5.1	1,314
domestic low (3)	200	(8)	-2.2		195		-3.1	189	-4.3	181	-4.9	172
domestic high	200		13.3		226		5.4	239	0.5	240	0.1	240
domestic highest	200		13.3		226		13.3	256	13.3	291	13.3	329

(1) OSE 2000 value

(2) Assumes 20% of 14,000 acre-feet of CAP water available by 2010 in Hidalgo County (2,800 ac-ft per year).

(3)

Estimated Annual Growth Rates			
2010	2020	2030	2040
-0.22 Low 1.26 High	-0.31 Low 0.53 High	-0.44 Low 0.05 High	-0.5 Low 0.01 High

(4) Assumes one 20,000 head feedlot by 2010.

(5) Assumes power generation is increased to historical high level in 1980.

(6) Declined due to closure of Hidalgo Smelter in Playas.

(7) Transfer of water rights from the Hidalgo smelter to irrigation (for 3,500 acres at 3.6 ac-ft/acre)

(8) DBS&A estimate

Projected Water Uses by Sector and County

Luna County	2000 Total Withdrawal (acre-feet)		10 Year % Growth by 2010	2010 Water Use (acre-feet)	10 Year % Growth by 2020	2020 Water Use (acre-feet)	10 Year % Growth by 2030	2030 Water Use (acre-feet)	10 Year % Growth by 2040	2040 Water Use (acre-feet)
commercial low (3)	186	(1)	13	210	11	233	8	252	6.5	268
commercial high	186		28	238	23	293	17	343	13	387
industrial low (3)	55	(1)	22	67	22	82	22	100	22	121
industrial high	55		63	90	48	133	34	178	22	217
mining low	41	(1)	0	41	0	41	0	41	0	41
mining high	41		0	41	0	41	0	41	0	41
power low	0		0	0	0	0	0	0	0	0
power high	0	(2)	0	1,120	96 (4)	2,203	0	2,203	0	2,203
irrigated land low	114,183	(1)	-9.56	103,267	-9.56	93,395	-9.56	84,466	-9.56	76,391
irrigated land high	114,183		0	114,183	0	114,183	0	114,183	0	114,183
livestock low	424	(1)	0	424	0	424	0	424	0	424
livestock high	424		5.1	446	5.1	468	5.1	492	5.1	518
domestic low (3)	676	(5)	13	764	11	848	8	916	6.5	976
domestic high	676		28	866	23	1,065	17	1,246	13	1,408
domestic highest	676		27.76	864	27.76	1,104	27.76	1,410	27.76	1,802

(1) OSE 2000 value

(2) Assumes Duke Power plant is on-line using about 1,000,000 gallons per day by 2005.

(3)

Estimated Annual Growth Rates			
2010	2020	2030	2040
1.24 Low	1.04 Low	0.81 Low	0.64 Low
2.48 High	2.07 High	1.61 High	1.27 High

(4) Assumes power generation is doubled about 2020.

(5) DBS&A estimate