

**Water Resources Planning Department**

**Projection Analysis Work Sheets  
for  
Oroville District**

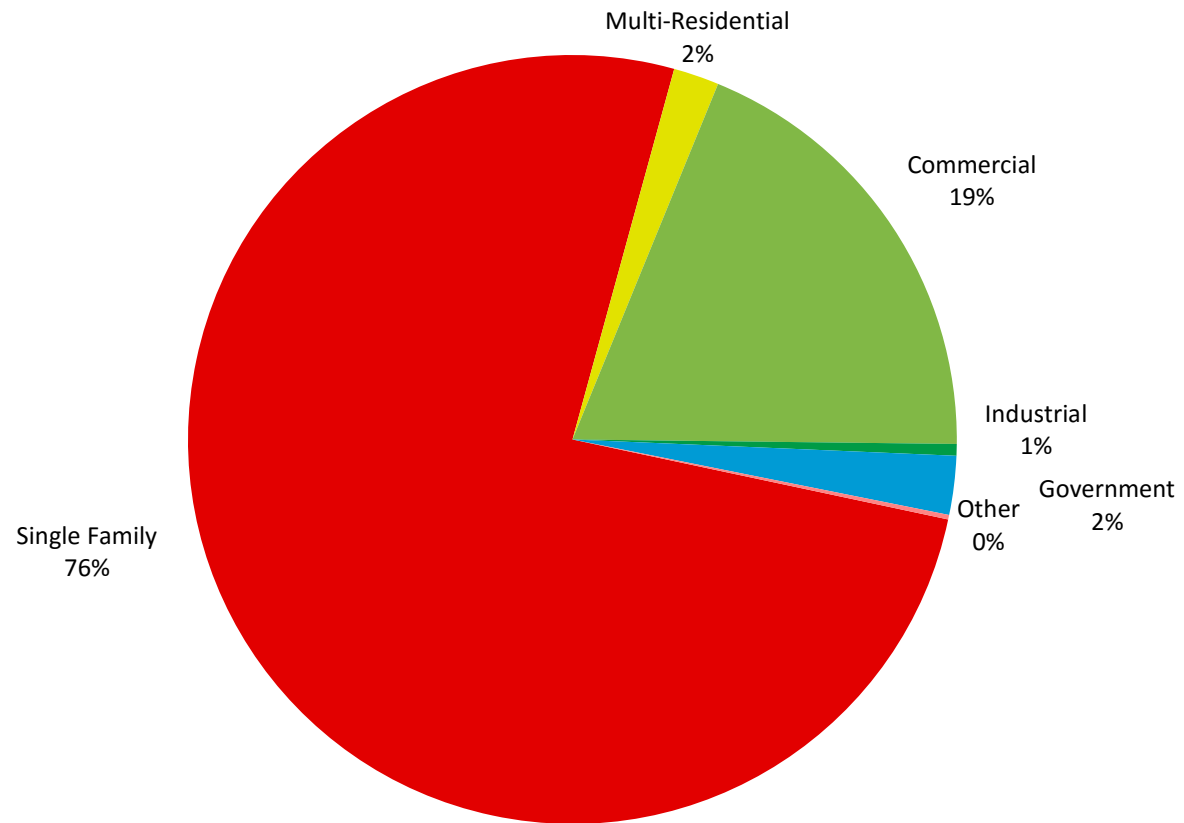
**2015**



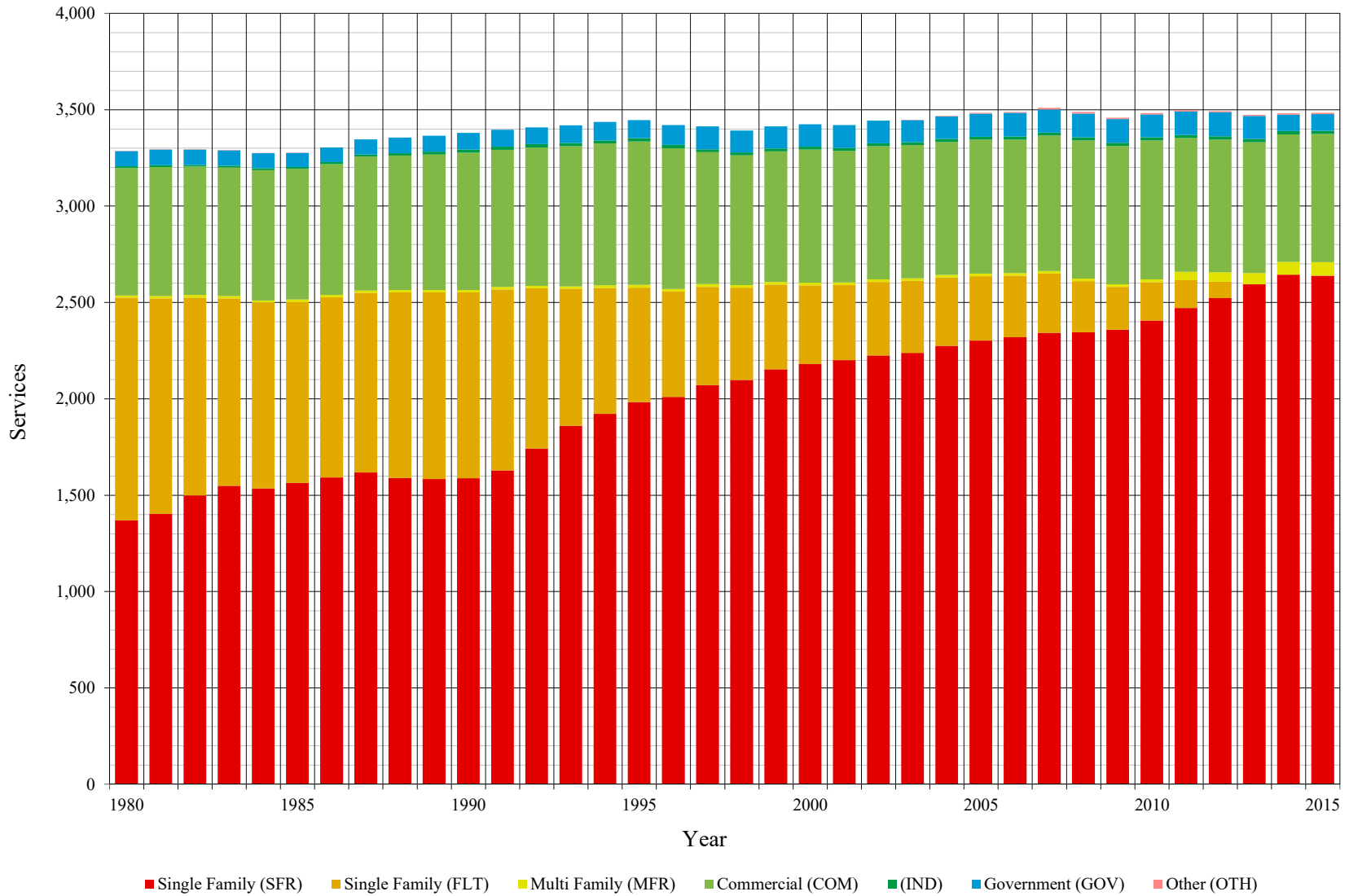
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## Distribution of Services (2015)



# Historical Services



**California Water Service Company - Oroville Districts**  
**Water Supply and Demand Analysis and Projections**  
**Average Annual Services**

Year	Single Family (SFR)	Single Family (FLT)	Single Family (Total)	Multi Family (MFR)	Commercial (COM)	Industrial (IND)	Government (GOV)	Other (OTH)	Total	Annual Change
1980	1,369	1,155	2,524	12	660	9	79	0	3,284	
1981	1,402	1,118	2,521	12	669	9	82	1	3,294	10
1982	1,498	1,027	2,525	13	666	9	80	1	3,293	0
1983	1,549	971	2,520	13	667	9	81	0	3,289	-4
1984	1,535	962	2,497	13	675	10	78	2	3,275	-14
1985	1,563	939	2,502	13	678	10	73	1	3,276	1
1986	1,592	934	2,526	13	678	11	75	0	3,303	27
1987	1,617	931	2,549	13	694	11	78	0	3,345	42
1988	1,588	963	2,551	13	698	11	81	0	3,355	10
1989	1,583	968	2,551	13	703	14	84	0	3,365	10
1990	1,588	964	2,551	13	713	16	86	0	3,379	14
1991	1,627	939	2,567	13	711	16	88	0	3,395	16
1992	1,742	831	2,573	13	718	17	87	0	3,408	13
1993	1,859	711	2,570	13	727	17	91	0	3,418	10
1994	1,921	653	2,575	14	735	17	95	0	3,436	18
1995	1,982	594	2,576	14	745	17	93	0	3,445	10
1996	2,010	546	2,556	14	730	17	104	0	3,420	-25
1997	2,070	510	2,581	14	684	15	119	0	3,413	-7
1998	2,097	479	2,576	14	673	15	113	0	3,391	-23
1999	2,153	439	2,592	14	676	15	115	0	3,412	22
2000	2,180	408	2,588	14	690	15	116	0	3,424	11
2001	2,200	389	2,589	14	683	15	119	0	3,420	-4
2002	2,224	382	2,606	14	691	15	118	0	3,443	23
2003	2,238	373	2,611	14	691	15	116	0	3,446	4
2004	2,275	354	2,629	14	689	16	117	2	3,466	25
2005	2,302	333	2,635	14	694	16	120	4	3,483	37
2006	2,319	320	2,638	14	692	16	123	4	3,488	21
2007	2,342	307	2,649	14	702	16	120	8	3,509	26
2008	2,344	265	2,610	14	716	16	123	8	3,487	-1
2009	2,358	222	2,579	14	719	16	122	7	3,457	-52
2010	2,405	199	2,605	15	721	16	119	7	3,482	-5
2011	2,471	144	2,614	44	693	17	121	7	3,497	40
2012	2,521	86	2,607	49	688	18	124	6	3,492	10
2013	2,594	0	2,594	58	679	17	119	6	3,473	-25
2014	2,643	0	2,643	67	661	17	86	7	3,481	-11
2015	2,638	0	2,638	70	665	17	86	7	3,483	10
5 Yr Avg.	2,573	46	2,619	57	677	17	107	7	3,485	2
10 Yr Avg.	2,463	154	2,618	36	694	17	114	7	3,485	4
15 Yr Avg.	2,391	225	2,616	29	692	16	115	5	3,474	7
20 Yr Avg.	2,319	288	2,607	25	692	16	115	4	3,458	4

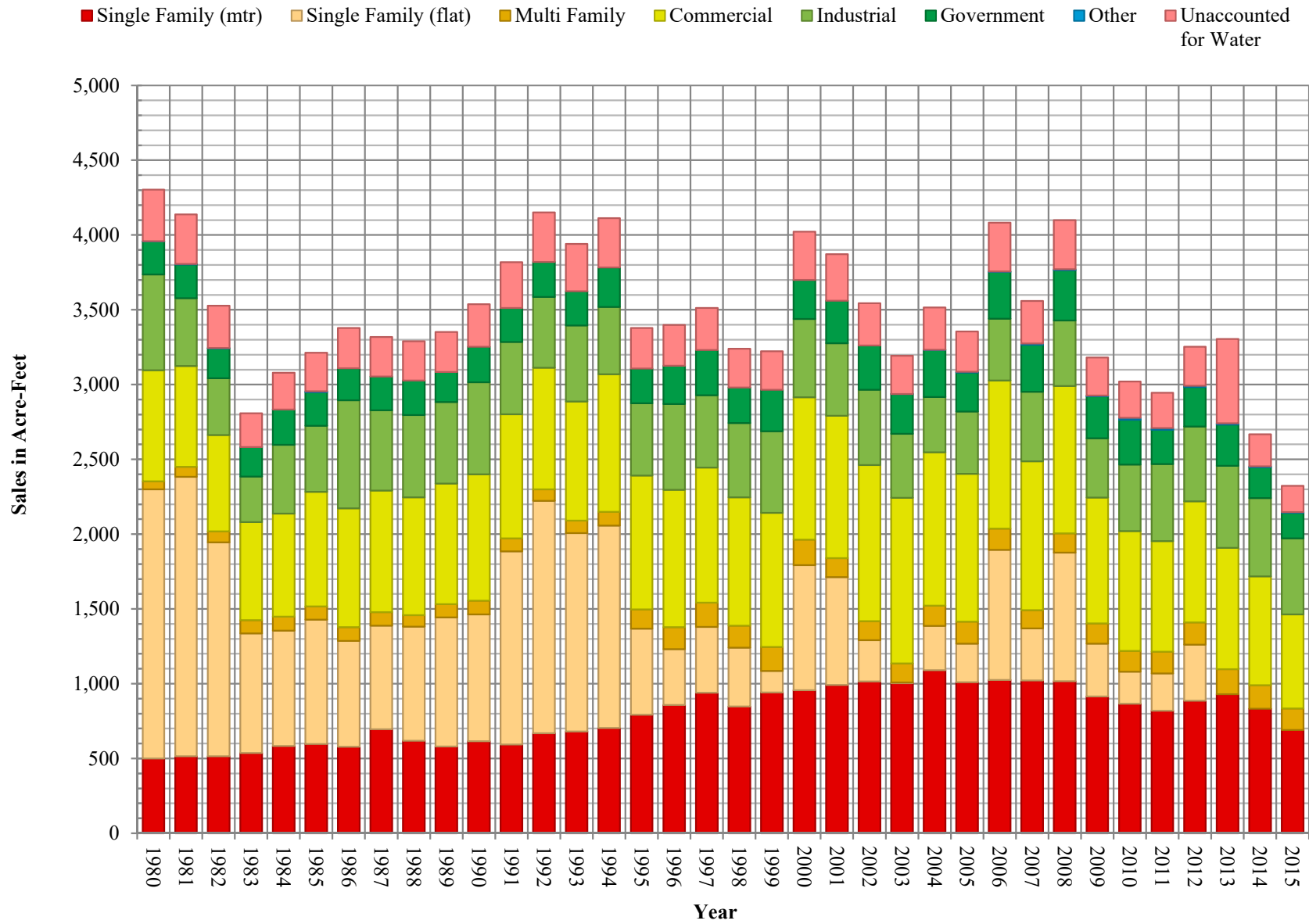
Note: Reclassification occurred between categories from 2007 to 2009

**California Water Service Company - Oroville Districts**  
**Water Supply and Demand Analysis and Projections**  
**Service Growth Percentage**

Year	Single Family (SFR)	Single Family (FLT)	Single Family (Total)	Multi Family (MFR)	Commercial (COM)	Industrial (IND)	Government (GOV)	Other (OTH)	Total
1981	2.43%	-3.16%	-0.13%	0.69%	1.36%	-2.65%	4.35%	900.00%	0.30%
1982	6.83%	-8.20%	0.17%	6.90%	-0.40%	-3.64%	-2.54%	-40.00%	-0.01%
1983	3.37%	-5.41%	-0.20%	0.65%	0.03%	-0.94%	1.15%	-66.67%	-0.13%
1984	-0.88%	-0.92%	-0.90%	0.00%	1.33%	12.38%	-3.61%	800.00%	-0.43%
1985	1.82%	-2.43%	0.18%	0.00%	0.33%	1.69%	-6.20%	-55.56%	0.04%
1986	1.84%	-0.53%	0.95%	0.00%	0.09%	7.50%	3.19%	-100.00%	0.82%
1987	1.61%	-0.27%	0.91%	0.00%	2.40%	2.33%	2.98%	0.00%	1.27%
1988	-1.78%	3.36%	0.10%	0.00%	0.48%	3.03%	4.61%	0.00%	0.29%
1989	-0.32%	0.55%	0.01%	0.00%	0.78%	22.06%	2.77%	0.00%	0.31%
1990	0.26%	-0.45%	-0.01%	0.00%	1.36%	17.47%	3.09%	0.00%	0.43%
1991	2.51%	-2.53%	0.61%	0.00%	-0.20%	-0.51%	2.32%	0.00%	0.47%
1992	7.04%	-11.53%	0.24%	0.00%	0.88%	5.67%	-0.76%	0.00%	0.38%
1993	6.74%	-14.45%	-0.11%	0.00%	1.25%	-0.49%	4.39%	0.00%	0.29%
1994	3.33%	-8.10%	0.17%	5.13%	1.17%	0.98%	4.29%	0.00%	0.51%
1995	3.18%	-9.11%	0.06%	2.44%	1.29%	0.97%	-1.84%	0.00%	0.29%
1996	1.37%	-8.03%	-0.79%	0.00%	-2.01%	-1.92%	11.24%	0.00%	-0.73%
1997	3.02%	-6.56%	0.97%	0.00%	-6.24%	-9.31%	14.92%	0.00%	-0.20%
1998	1.31%	-6.24%	-0.18%	0.00%	-1.60%	-2.70%	-5.44%	0.00%	-0.66%
1999	2.67%	-8.31%	0.63%	1.79%	0.47%	0.00%	1.70%	0.00%	0.63%
2000	1.25%	-6.95%	-0.14%	-2.34%	2.08%	0.00%	1.02%	0.00%	0.33%
2001	0.92%	-4.69%	0.04%	-0.60%	-1.06%	-1.11%	2.23%	0.00%	-0.12%
2002	1.09%	-1.88%	0.64%	1.20%	1.11%	1.12%	-0.91%	0.00%	0.68%
2003	0.61%	-2.27%	0.19%	0.00%	-0.02%	0.00%	-1.49%	0.00%	0.10%
2004	1.65%	-5.05%	0.69%	-0.60%	-0.18%	3.89%	1.37%	280.00%	0.58%
2005	1.21%	-5.95%	0.24%	0.60%	0.71%	2.14%	2.56%	121.05%	0.48%
2006	0.72%	-4.05%	0.12%	0.00%	-0.29%	0.52%	2.08%	23.81%	0.13%
2007	0.99%	-3.83%	0.41%	0.00%	1.42%	0.00%	-2.37%	82.69%	0.61%
2008	0.11%	-13.66%	-1.49%	0.00%	2.02%	0.00%	2.92%	-2.11%	-0.62%
2009	0.57%	-16.42%	-1.16%	0.00%	0.34%	0.00%	-0.88%	-15.05%	-0.86%
2010	2.03%	-10.22%	0.98%	5.36%	0.29%	1.56%	-3.13%	6.33%	0.72%
2011	2.72%	-27.87%	0.38%	199.44%	-3.84%	5.13%	2.32%	3.57%	0.45%
2012	2.04%	-40.08%	-0.27%	10.00%	-0.70%	5.37%	1.99%	-14.94%	-0.15%
2013	2.88%	-100.00%	-0.52%	19.38%	-1.33%	-4.17%	-3.77%	-6.76%	-0.55%
2014	1.90%	0.00%	1.90%	15.09%	-2.63%	-1.45%	-27.80%	15.94%	0.23%
2015	-0.18%	0.00%	-0.18%	4.74%	0.55%	0.00%	0.10%	0.00%	0.06%
5 Yr. Avg.	1.87%	-33.59%	0.26%	4.74%	-1.59%	0.98%	-5.43%	-0.44%	0.01%
10 Yr. Avg.	1.38%	-21.61%	0.02%	1.68%	-0.42%	0.70%	-2.85%	9.35%	0.00%
15 Yr. Avg.	1.28%	-15.73%	0.13%	0.97%	-0.24%	0.87%	-1.65%	32.97%	0.12%
20 Yr. Avg.	1.44%	-13.60%	0.12%	0.63%	-0.55%	-0.05%	-0.07%	24.73%	0.06%

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# Historical Sales

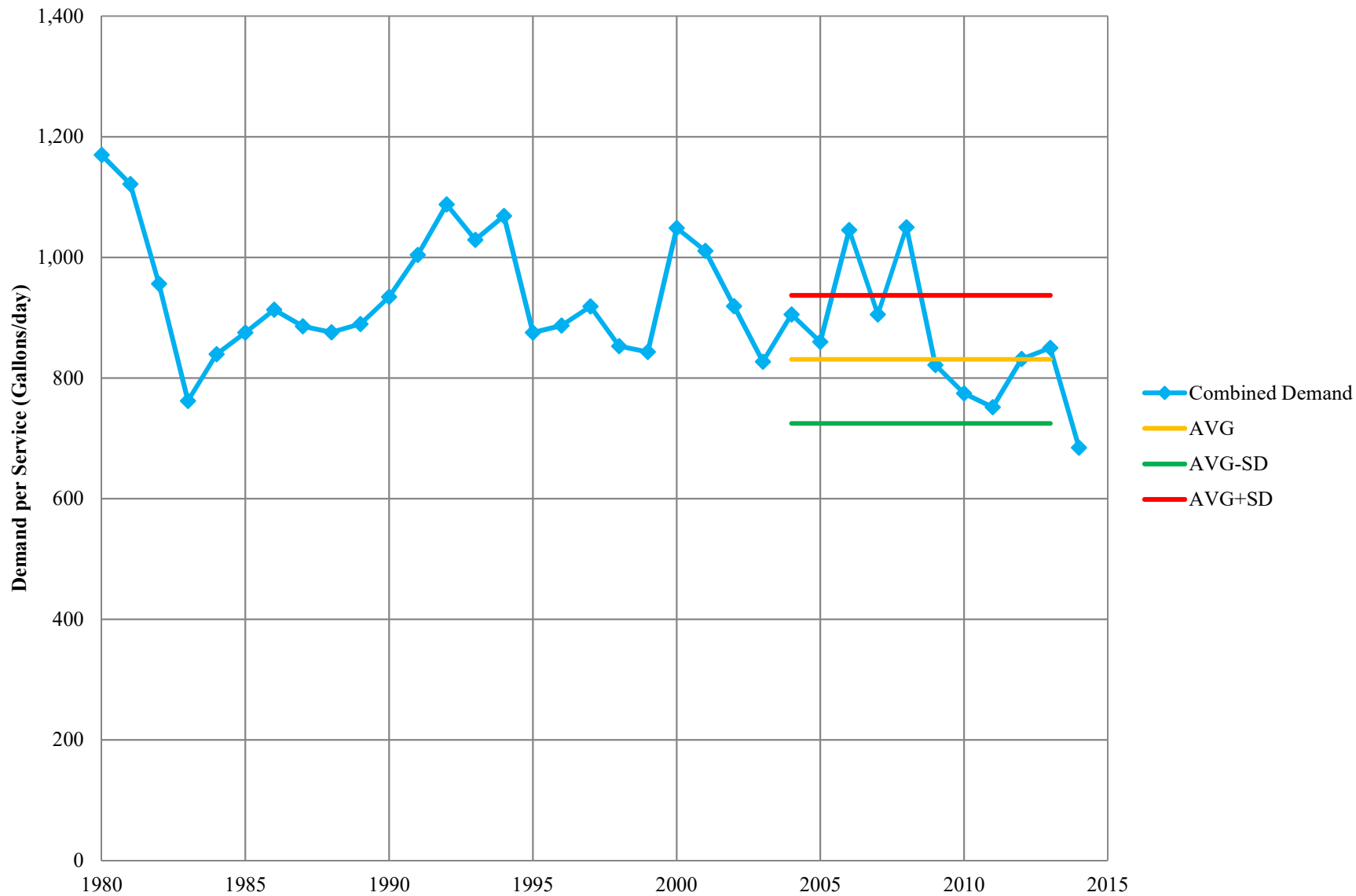


**California Water Service Company - Oroville Districts**  
**Water Supply and Demand Analysis and Projections**  
**Sales (AF)**

Worksheet 3

Year	Single Family			Multi Family (MFR)	Commercial (COM)	Industrial (IND)	Government (GOV)	Other (OTH)	Unaccounted for Water (UAFW)	Total Sales (AF)	Total Demand (AF)	Total Demand (MGal)
	(SFR)	(FLT)	(Total)									
1980	501	1,799	2,300	53	743	640	222	1	344	3,959	4,303	1,402
1981	515	1,869	2,384	66	673	454	227	3	331	3,807	4,138	1,349
1982	514	1,430	1,944	75	644	379	201	2	282	3,244	3,527	1,149
1983	538	799	1,336	89	656	304	197	0	225	2,583	2,807	915
1984	583	771	1,354	94	690	459	236	0	246	2,833	3,080	1,003
1985	597	830	1,428	89	767	442	224	6	257	2,956	3,213	1,047
1986	579	706	1,286	92	794	724	213	0	270	3,108	3,379	1,101
1987	695	694	1,388	91	812	537	226	0	266	3,053	3,319	1,081
1988	619	763	1,382	77	787	550	231	0	263	3,027	3,290	1,072
1989	580	863	1,443	88	806	545	201	0	268	3,084	3,352	1,092
1990	616	847	1,463	92	845	615	239	0	283	3,254	3,537	1,152
1991	594	1,290	1,884	88	830	484	228	0	305	3,513	3,819	1,244
1992	669	1,554	2,222	78	813	473	233	0	332	3,820	4,152	1,353
1993	681	1,326	2,007	83	797	509	229	0	315	3,625	3,940	1,284
1994	705	1,352	2,056	93	920	449	265	0	329	3,784	4,113	1,340
1995	793	575	1,368	130	895	483	233	0	270	3,108	3,378	1,101
1996	858	372	1,230	148	919	573	257	0	272	3,127	3,399	1,107
1997	941	439	1,380	161	904	483	304	0	281	3,232	3,513	1,145
1998	847	394	1,241	146	858	498	237	0	259	2,981	3,240	1,056
1999	942	143	1,085	161	896	545	278	0	258	2,965	3,223	1,050
2000	957	837	1,794	171	951	524	262	0	322	3,700	4,022	1,311
2001	992	721	1,713	128	951	485	286	0	310	3,562	3,871	1,261
2002	1,014	276	1,291	127	1,044	504	295	0	284	3,261	3,545	1,155
2003	1,003	6	1,009	127	1,106	429	265	0	255	2,937	3,192	1,040
2004	1,090	297	1,387	136	1,024	370	315	2	281	3,234	3,515	1,145
2005	1,010	259	1,268	146	989	416	261	7	268	3,087	3,355	1,093
2006	1,025	870	1,895	141	991	413	313	3	327	3,757	4,083	1,331
2007	1,021	349	1,370	122	996	465	315	7	285	3,274	3,559	1,160
2008	1,017	859	1,876	130	984	438	337	7	328	3,772	4,100	1,336
2009	915	354	1,268	136	841	396	281	6	255	2,927	3,181	1,037
2010	867	213	1,080	139	801	445	300	14	242	2,778	3,020	984
2011	819	249	1,068	145	740	515	229	11	236	2,709	2,945	960
2012	886	375	1,260	150	808	501	264	8	260	2,992	3,252	1,060
2013	929	0	929	168	810	549	277	7	565	2,741	3,305	1,077
2014	833	0	833	157	727	524	206	6	215	2,453	2,668	869
2015	690	0	690	144	630	507.2	171	5	175	2,147	2,322	757

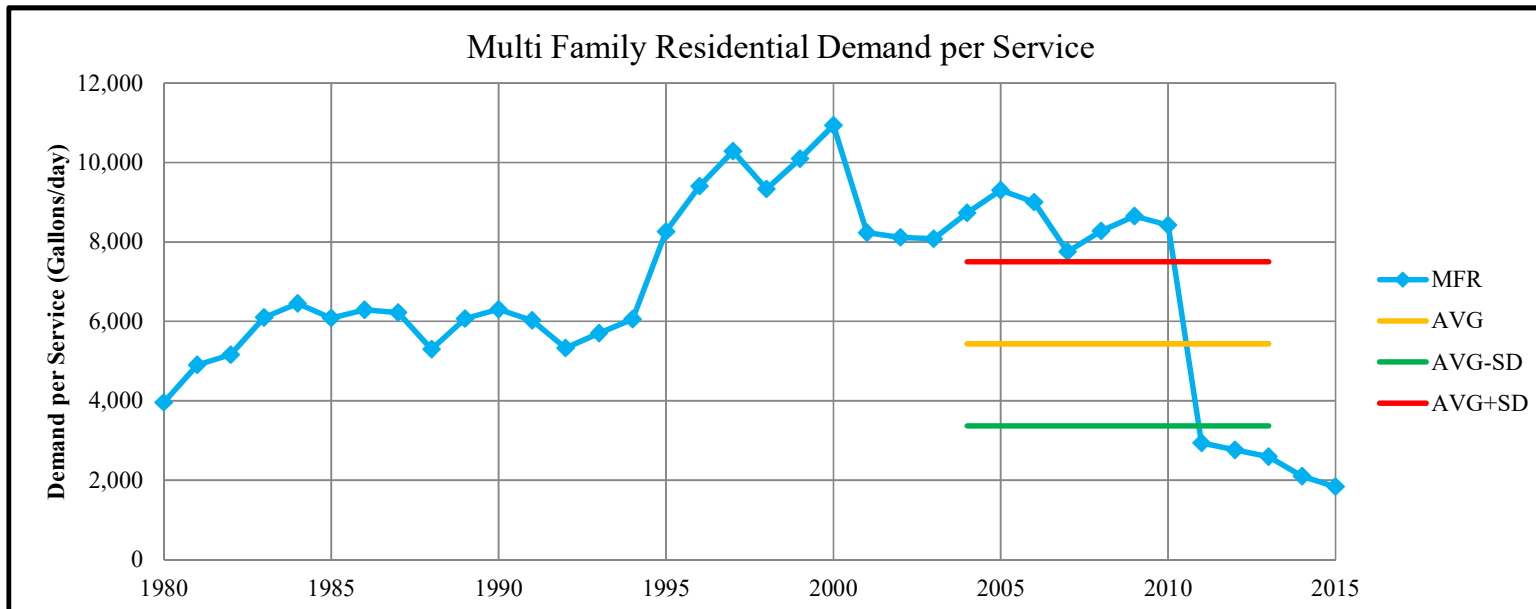
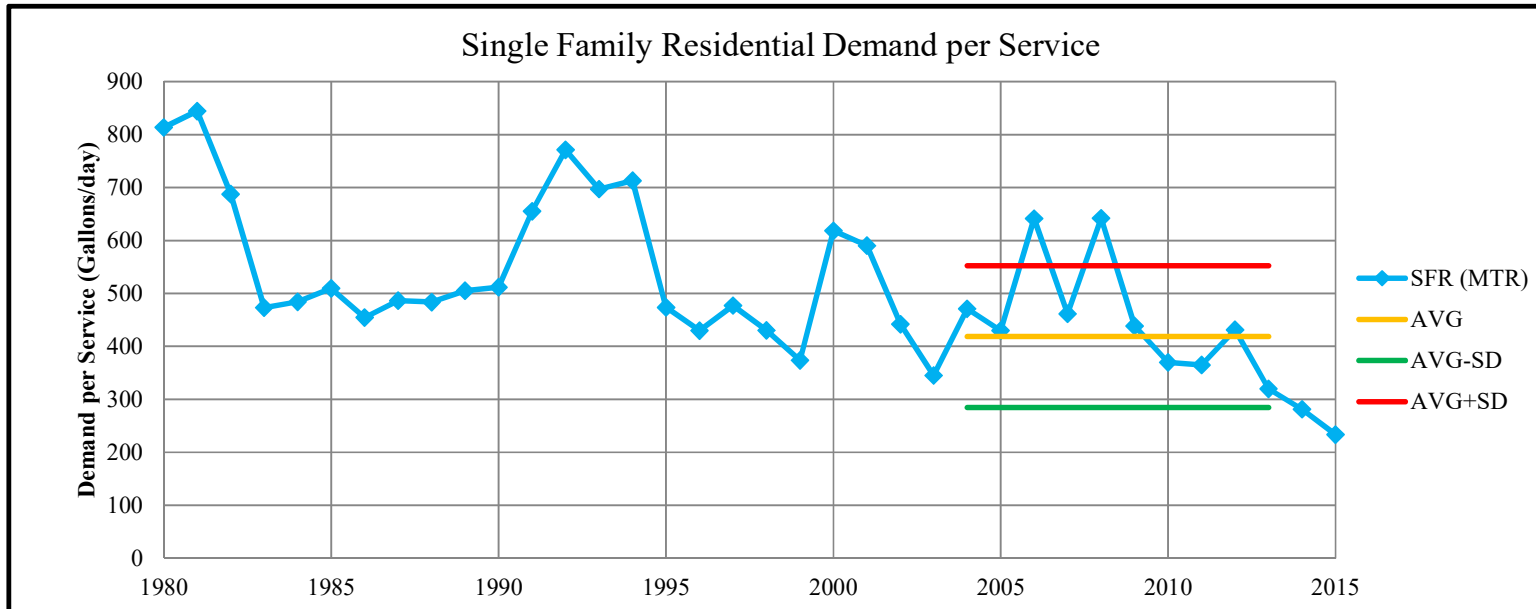
### Combined Demand per Service

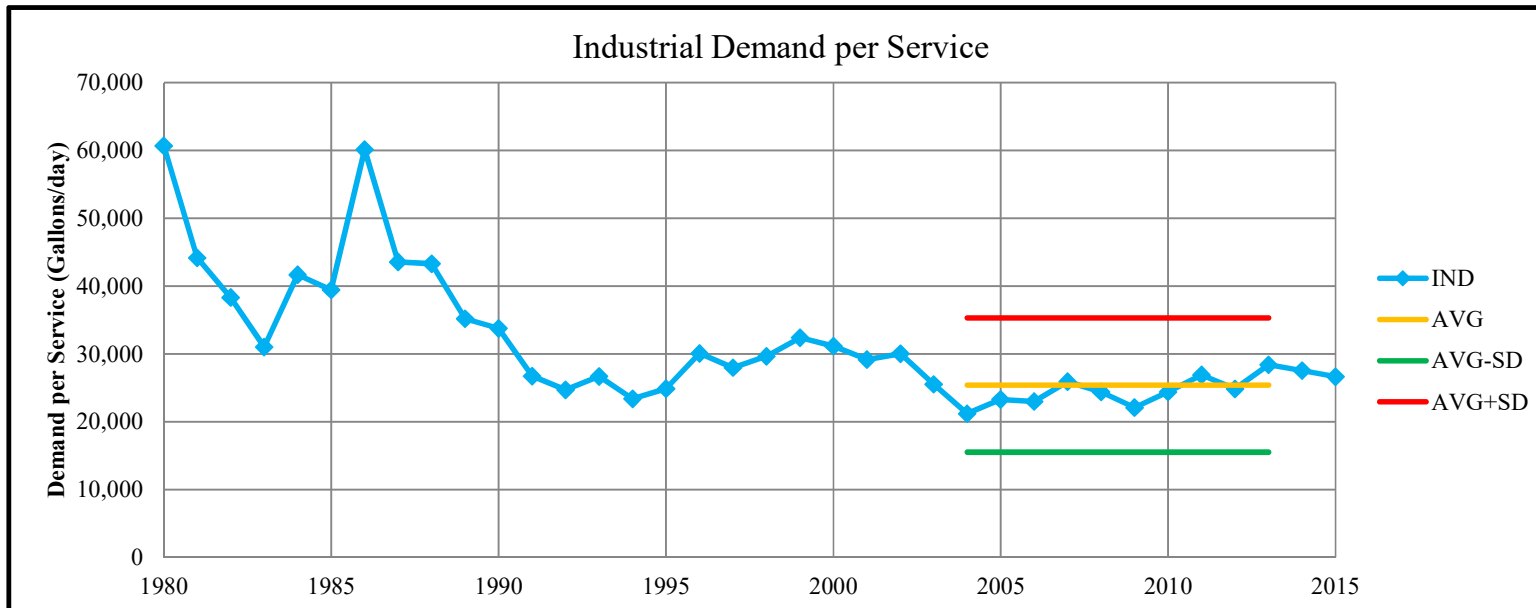
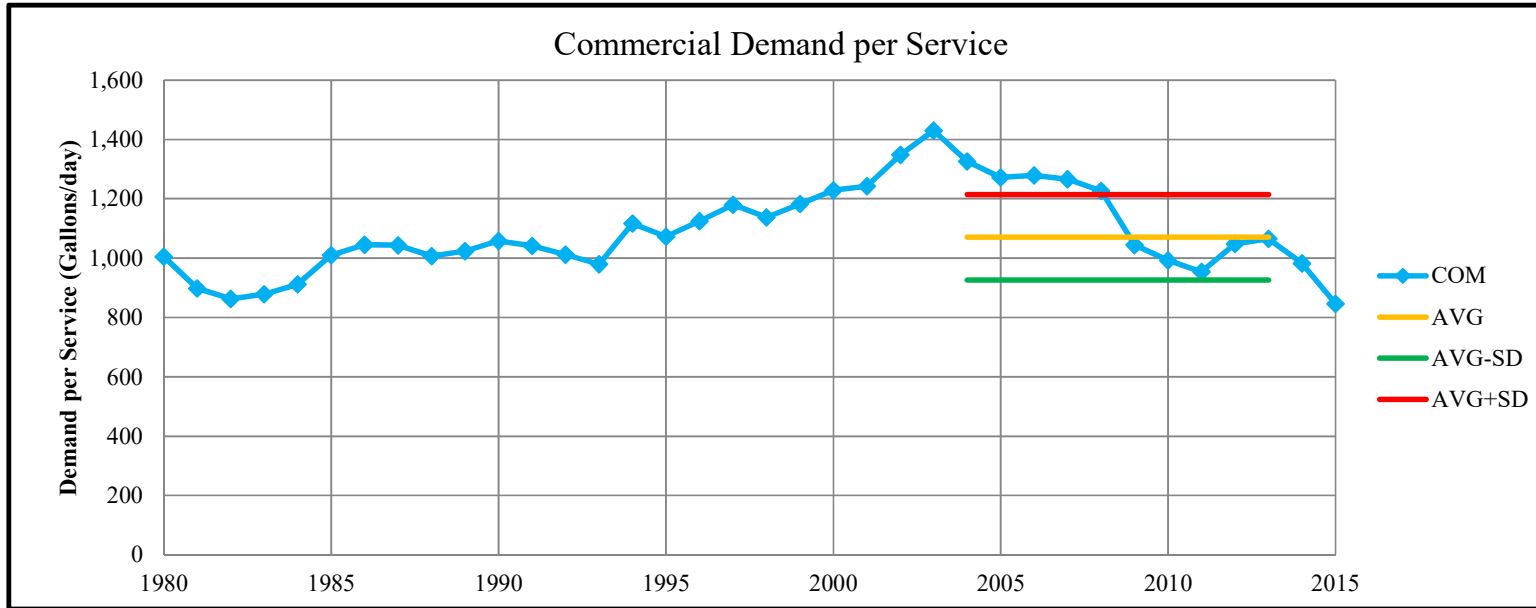


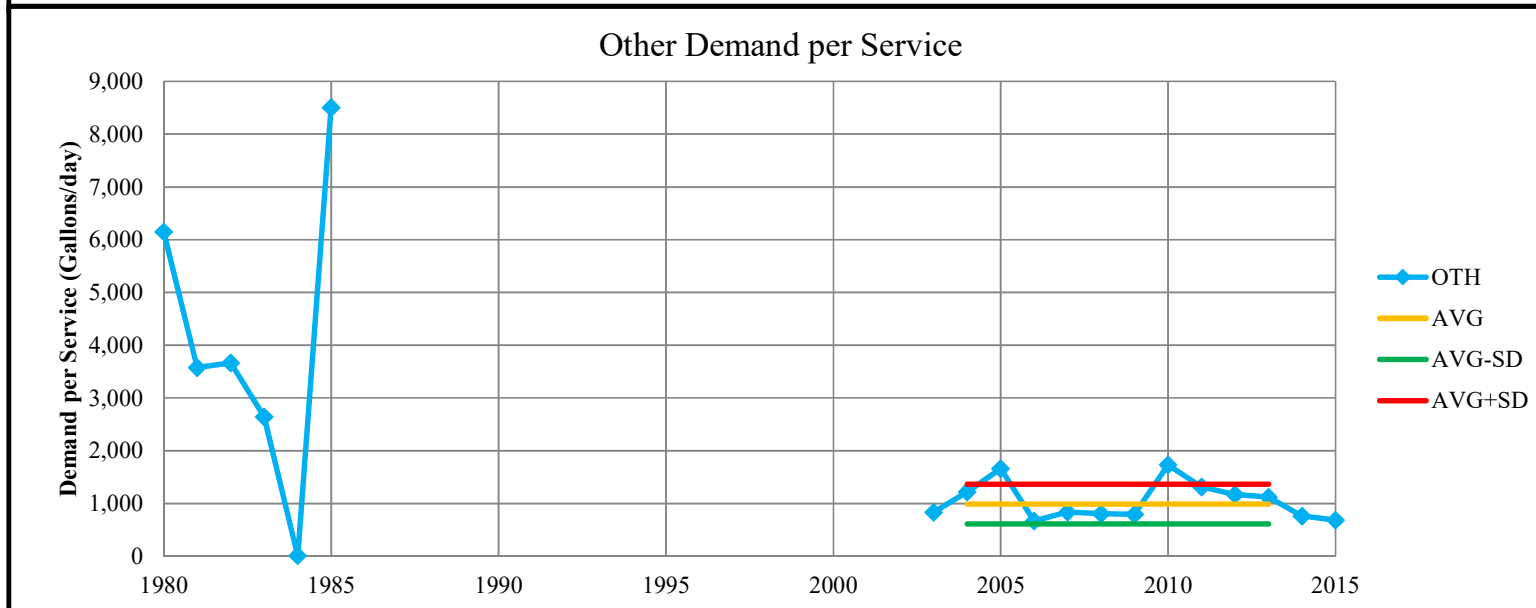
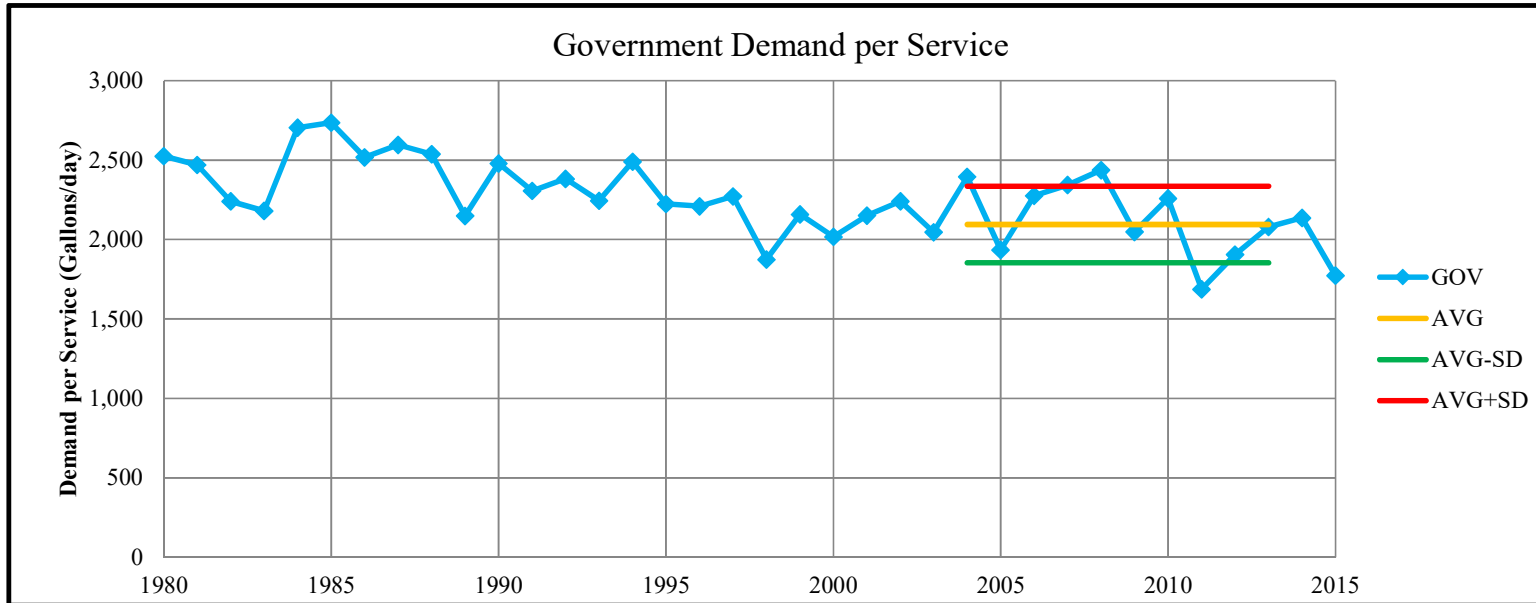
**California Water Service Company - Oroville Districts**  
**Water Supply and Demand Analysis and Projections**  
**Demand per Service (Gallons per Day)**

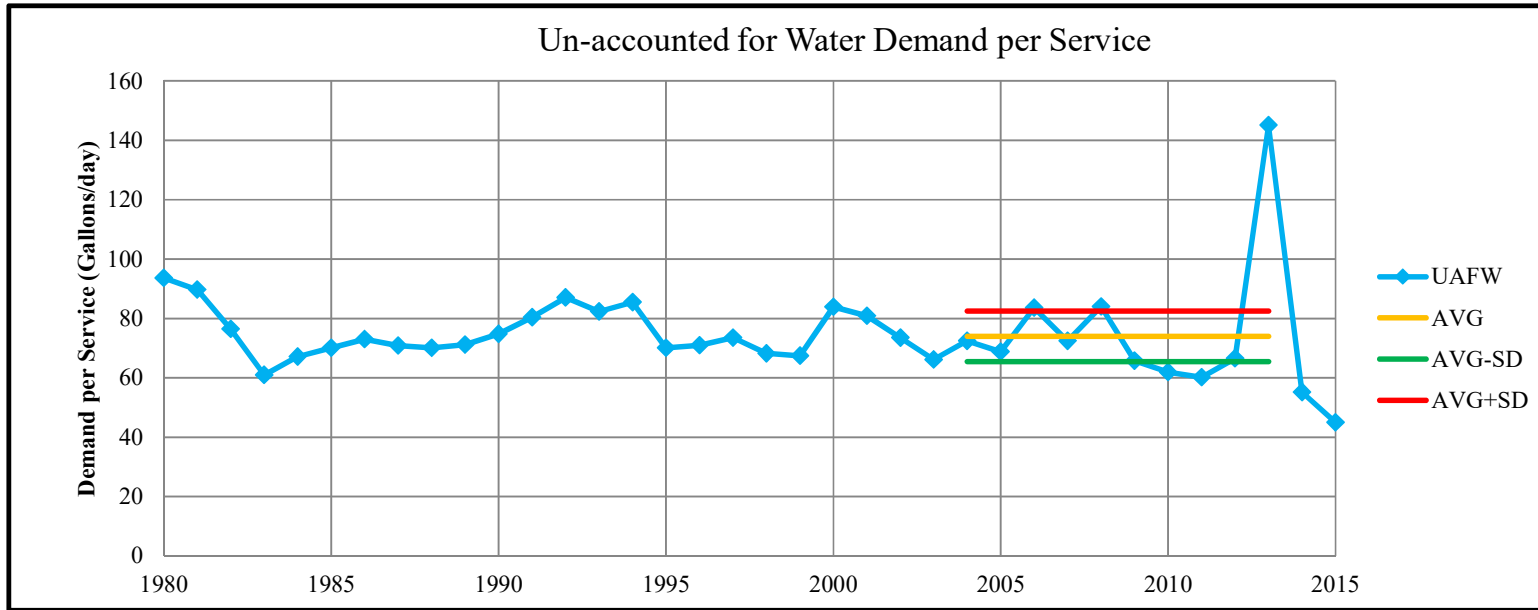
Year	SFR (MTR)	SFR (FLT)	SFR (TOT)	MFR	COM	IND	GOV	OTH	UAFW	Combined Demand/Serv
1980	327	1,391	813	3,955	1,005	60,667	2,525	6,148	94	1,170
1981	328	1,492	844	4,902	898	44,179	2,470	3,578	90	1,122
1982	306	1,243	688	5,160	862	38,312	2,241	3,664	76	956
1983	310	734	473	6,096	878	31,037	2,179	2,644	61	762
1984	339	715	484	6,450	912	41,687	2,705	10	67	840
1985	341	790	509	6,081	1,011	39,460	2,735	8,506	70	875
1986	325	675	455	6,290	1,046	60,106	2,518		73	913
1987	384	665	486	6,226	1,043	43,554	2,597		71	886
1988	348	707	484	5,301	1,008	43,286	2,538		70	876
1989	327	796	505	6,070	1,024	35,189	2,149		71	889
1990	346	785	512	6,300	1,059	33,764	2,479		75	934
1991	326	1,226	655	6,024	1,041	26,716	2,306		80	1,004
1992	343	1,669	771	5,331	1,012	24,724	2,383		87	1,088
1993	327	1,665	697	5,705	980	26,709	2,244		82	1,029
1994	328	1,847	713	6,051	1,118	23,369	2,490		86	1,069
1995	357	865	474	8,260	1,073	24,874	2,224		70	875
1996	381	608	430	9,406	1,124	30,085	2,209		71	887
1997	406	768	477	10,288	1,179	27,960	2,271		73	919
1998	361	735	430	9,334	1,137	29,644	1,874		68	853
1999	391	292	374	10,098	1,183	32,412	2,158		67	843
2000	392	1,829	619	10,937	1,229	31,163	2,017		84	1,049
2001	403	1,654	591	8,231	1,243	29,168	2,151		81	1,011
2002	407	646	442	8,118	1,349	30,020	2,241		74	919
2003	400	14	345	8,078	1,431	25,523	2,047	836	66	827
2004	428	748	471	8,729	1,326	21,214	2,394	1,218	72	905
2005	392	693	430	9,303	1,272	23,324	1,935	1,662	69	860
2006	395	2,430	641	9,004	1,279	23,019	2,275	670	84	1,045
2007	389	1,014	462	7,758	1,266	25,918	2,343	840	72	905
2008	387	2,891	642	8,276	1,227	24,434	2,437	805	84	1,050
2009	346	1,423	439	8,650	1,044	22,102	2,048	795	66	822
2010	322	956	370	8,426	992	24,425	2,260	1,732	62	774
2011	296	1,550	365	2,939	954	26,911	1,687	1,317	60	752
2012	314	3,886	432	2,763	1,048	24,856	1,906	1,172	67	832
2013	320		320	2,590	1,065	28,393	2,079	1,123	145	850
2014	281		281	2,098	982	27,543	2,136	762	55	684
2015	234		234	1,835	846	26,637	1,773	688	45	595
10-yr Ave	328	1,560	419	5,434	1,070	25,424	2,094	990	74	831
SD	36	772	134	2,067	144	9,900	242	378	8	106

Note: Average calculated based on last three years due to sharp downward trend.









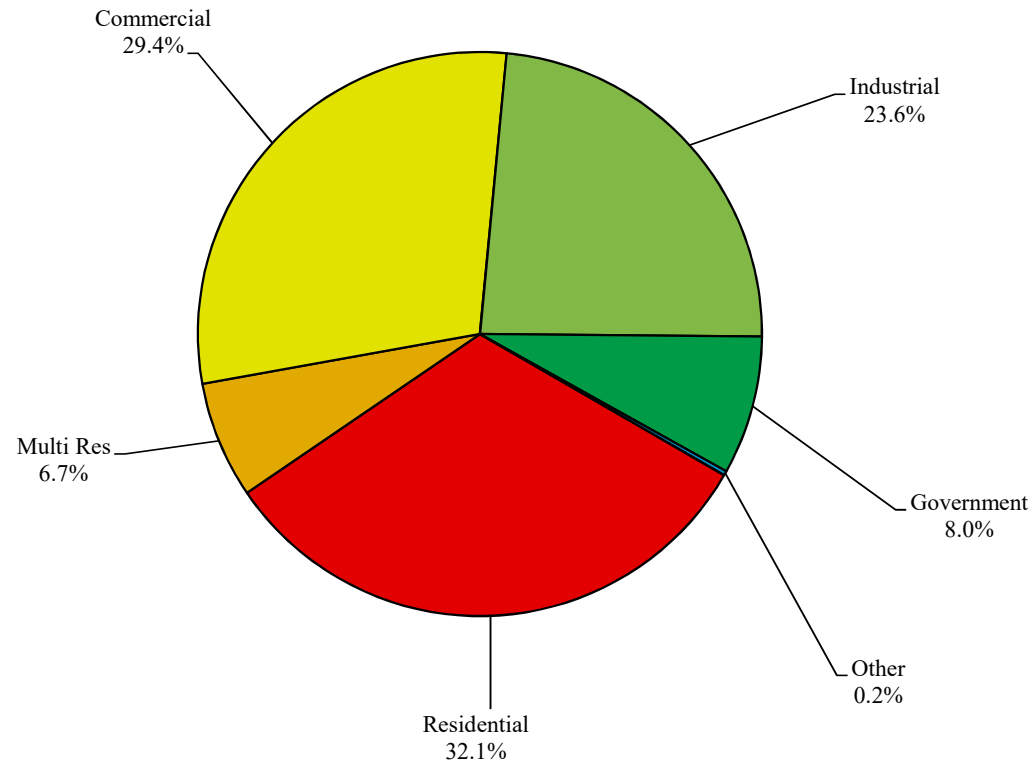
**California Water Service Company - Oroville Districts**  
**Water Supply and Demand Analysis and Projections**  
**Percentage Change in Annual Demand**

Worksheet 5

Year	Residential	Multi Res	Commercial	Industrial	Government	Other	Unaccounted	Total
1981	2.81%	24.80%	-9.40%		2.04%	482.00%	-3.82%	-3.82%
1982	-0.11%	12.53%	-4.38%		-11.57%	-38.56%	-14.78%	-14.78%
1983	4.53%	18.90%	1.87%		-1.62%	-75.95%	-20.39%	-20.39%
1984	8.53%	5.81%	5.16%		19.64%	-96.74%	9.69%	9.69%
1985	2.39%	-5.72%	11.23%		-5.15%	39428.57%	4.32%	4.32%
1986	-3.01%	3.45%	3.58%		-5.00%	-100.00%	5.17%	5.17%
1987	19.94%	-1.02%	2.17%		6.20%		-1.77%	-1.77%
1988	-10.89%	-14.85%	-2.98%		2.25%		-0.86%	-0.86%
1989	-6.26%	14.49%	2.38%		-13.01%		1.88%	1.88%
1990	6.11%	3.80%	4.84%		18.92%		5.51%	5.51%
1991	-3.50%	-4.39%	-1.82%		-4.80%		7.97%	7.97%
1992	12.49%	-11.50%	-1.99%		2.54%		8.73%	8.73%
1993	1.83%	7.03%	-1.99%		-1.67%		-5.10%	-5.10%
1994	3.53%	11.49%	15.42%		15.72%		4.39%	4.39%
1995	12.46%	39.85%	-2.75%		-12.35%		-17.87%	-17.87%
1996	8.28%	13.87%	2.69%		10.50%		0.61%	0.61%
1997	9.59%	9.37%	-1.65%		18.14%		3.35%	3.35%
1998	-9.93%	-9.27%	-5.10%		-21.96%		-7.77%	-7.77%
1999	11.17%	10.12%	4.49%		17.07%		-0.53%	-0.53%
2000	1.60%	5.78%	6.07%		-5.60%		24.80%	24.80%
2001	3.67%	-25.20%	0.03%		9.03%		-3.75%	-3.75%
2002	2.25%	-0.19%	9.75%		3.26%		-8.44%	-8.44%
2003	-1.09%	-0.49%	6.03%		-10.03%		-9.93%	-9.93%
2004	8.62%	7.42%	-7.46%		18.54%		10.10%	10.10%
2005	-7.35%	7.21%	-3.40%		-17.09%		-4.55%	-4.55%
2006	1.53%	-3.21%	0.22%		19.99%	-50.09%	21.71%	21.71%
2007	-0.39%	-13.84%	0.43%		0.54%	128.86%	-12.85%	-12.85%
2008	-0.40%	6.67%	-1.14%		7.03%	-6.11%	15.21%	15.21%
2009	-10.06%	4.53%	-14.59%		-16.68%	-16.12%	-22.40%	-22.40%
2010	-5.24%	2.62%	-4.68%		6.88%	131.60%	-5.07%	-5.07%
2011	-5.50%	4.43%	-7.58%		-23.60%	-21.25%	-2.49%	-2.49%
2012	8.15%	3.42%	9.14%		15.21%	-24.30%	10.45%	10.45%
2013	4.93%	11.90%	0.25%		4.95%	-10.61%	116.97%	-8.40%
2014	-10.38%	-6.76%	-10.21%		-25.82%	-21.32%	-61.94%	-10.50%
2015	-17.14%	-8.42%	-13.38%		-16.92%	-9.76%	-18.39%	-12.47%

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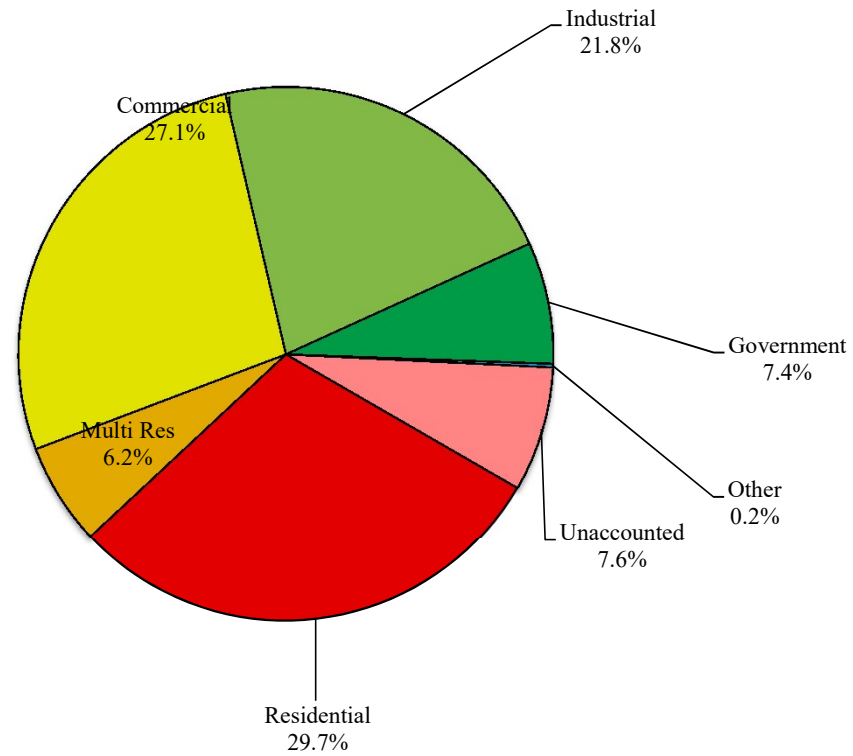
## Percent of Total Sales by Type of Use (2015)



**California Water Service Company - Oroville Districts**  
**Water Supply and Demand Analysis and Projections**  
**Percentage of Total Sales**

Year	Residential	Multi Res	Commercial	Industrial	Government	Other	Percent Total
1980	58.09%	1.34%	18.77%	16.17%	5.62%	0.01%	100.00%
1981	62.62%	1.74%	17.68%	11.91%	5.96%	0.09%	100.00%
1982	59.93%	2.30%	19.84%	11.68%	6.18%	0.06%	100.00%
1983	51.74%	3.44%	25.39%	11.78%	7.64%	0.02%	100.00%
1984	47.81%	3.31%	24.34%	16.21%	8.33%	0.00%	100.00%
1985	48.31%	3.00%	25.95%	14.95%	7.58%	0.21%	100.00%
1986	41.37%	2.95%	25.56%	23.28%	6.84%	0.00%	100.00%
1987	45.47%	2.97%	26.58%	17.58%	7.40%	0.00%	100.00%
1988	45.65%	2.55%	26.02%	18.15%	7.63%	0.00%	100.00%
1989	46.79%	2.87%	26.14%	17.68%	6.52%	0.00%	100.00%
1990	44.97%	2.82%	25.98%	18.89%	7.35%	0.00%	100.00%
1991	53.63%	2.50%	23.62%	13.77%	6.48%	0.00%	100.00%
1992	58.18%	2.03%	21.29%	12.39%	6.11%	0.00%	100.00%
1993	55.36%	2.29%	21.99%	14.03%	6.33%	0.00%	100.00%
1994	54.34%	2.45%	24.32%	11.87%	7.02%	0.00%	100.00%
1995	44.01%	4.17%	28.79%	15.54%	7.49%	0.00%	100.00%
1996	39.35%	4.72%	29.39%	18.32%	8.22%	0.00%	100.00%
1997	42.70%	4.99%	27.97%	14.94%	9.40%	0.00%	100.00%
1998	41.65%	4.91%	28.78%	16.71%	7.95%	0.00%	100.00%
1999	36.60%	5.44%	30.23%	18.37%	9.36%	0.00%	100.00%
2000	48.47%	4.61%	25.69%	14.15%	7.08%	0.00%	100.00%
2001	48.09%	3.58%	26.70%	13.61%	8.02%	0.00%	100.00%
2002	39.58%	3.90%	32.00%	15.47%	9.05%	0.00%	100.00%
2003	34.36%	4.31%	37.67%	14.60%	9.04%	0.01%	100.00%
2004	42.88%	4.21%	31.66%	11.45%	9.73%	0.07%	100.00%
2005	41.09%	4.73%	32.05%	13.47%	8.45%	0.21%	100.00%
2006	50.45%	3.76%	26.39%	10.98%	8.33%	0.09%	100.00%
2007	41.85%	3.72%	30.41%	14.19%	9.61%	0.23%	100.00%
2008	49.74%	3.44%	26.09%	11.61%	8.93%	0.19%	100.00%
2009	43.33%	4.63%	28.72%	13.53%	9.59%	0.20%	100.00%
2010	38.87%	5.01%	28.84%	16.00%	10.80%	0.49%	100.00%
2011	39.44%	5.37%	27.33%	19.01%	8.46%	0.39%	100.00%
2012	42.12%	5.03%	27.01%	16.75%	8.82%	0.27%	100.00%
2013	33.91%	6.14%	29.56%	20.02%	10.11%	0.26%	100.00%
2014	33.95%	6.40%	29.66%	21.38%	8.38%	0.23%	100.00%
2015	32.14%	6.69%	29.35%	23.62%	7.95%	0.24%	100.00%

## Percent of Total Demand by Type of Use (2015)

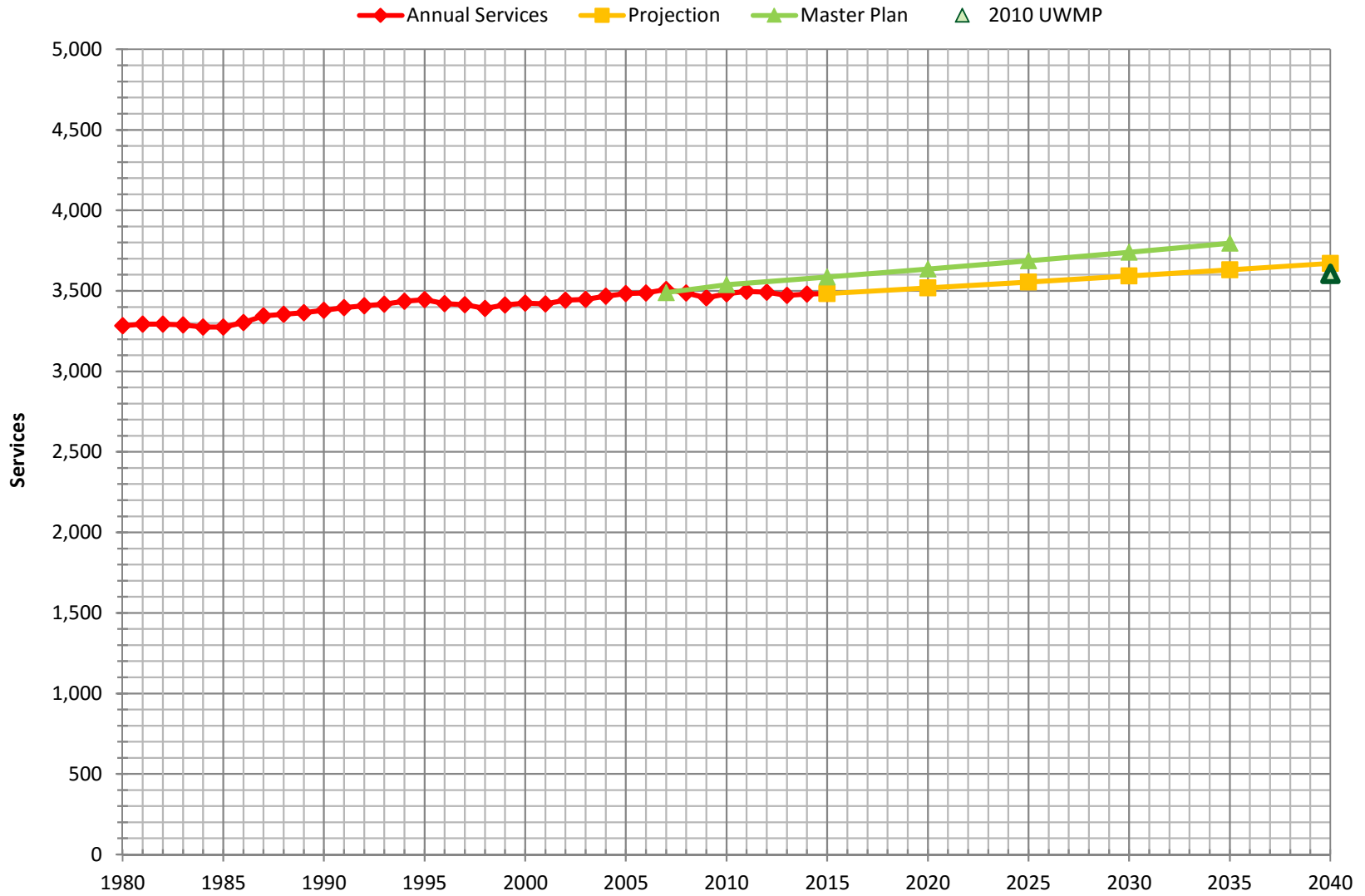


**California Water Service Company - Oroville Districts**  
**Water Supply and Demand Analysis and Projections**  
**Percentage of Total Demand**

Worksheet 7

Year	Residential	Multi Res	Commercial	Industrial	Government	Other	Unaccounted	Percent Total
1980	53.44%	1.24%	17.27%	14.87%	5.17%	0.01%	8.00%	100.00%
1981	57.61%	1.60%	16.27%	10.96%	5.48%	0.08%	8.00%	100.00%
1982	55.13%	2.12%	18.25%	10.75%	5.69%	0.06%	8.00%	100.00%
1983	47.60%	3.16%	23.36%	10.84%	7.03%	0.02%	8.00%	100.00%
1984	43.98%	3.05%	22.39%	14.91%	7.67%	0.00%	8.00%	100.00%
1985	44.44%	2.76%	23.87%	13.76%	6.97%	0.20%	8.00%	100.00%
1986	38.06%	2.71%	23.51%	21.42%	6.30%	0.00%	8.00%	100.00%
1987	41.84%	2.73%	24.46%	16.17%	6.81%	0.00%	8.00%	100.00%
1988	42.00%	2.35%	23.93%	16.70%	7.02%	0.00%	8.00%	100.00%
1989	43.05%	2.64%	24.05%	16.27%	6.00%	0.00%	8.00%	100.00%
1990	41.37%	2.59%	23.90%	17.38%	6.76%	0.00%	8.00%	100.00%
1991	49.34%	2.30%	21.73%	12.67%	5.96%	0.00%	8.00%	100.00%
1992	53.53%	1.87%	19.59%	11.39%	5.62%	0.00%	8.00%	100.00%
1993	50.93%	2.11%	20.23%	12.91%	5.82%	0.00%	8.00%	100.00%
1994	50.00%	2.25%	22.37%	10.92%	6.45%	0.00%	8.00%	100.00%
1995	40.49%	3.83%	26.49%	14.30%	6.89%	0.00%	8.00%	100.00%
1996	36.20%	4.34%	27.04%	16.86%	7.57%	0.00%	8.00%	100.00%
1997	39.28%	4.59%	25.73%	13.75%	8.65%	0.00%	8.00%	100.00%
1998	38.32%	4.52%	26.47%	15.37%	7.32%	0.00%	8.00%	100.00%
1999	33.68%	5.00%	27.81%	16.90%	8.61%	0.00%	8.00%	100.00%
2000	44.59%	4.24%	23.63%	13.02%	6.51%	0.00%	8.00%	100.00%
2001	44.25%	3.29%	24.56%	12.52%	7.38%	0.00%	8.00%	100.00%
2002	36.41%	3.59%	29.44%	14.23%	8.32%	0.00%	8.00%	100.00%
2003	31.61%	3.97%	34.66%	13.43%	8.31%	0.01%	8.00%	100.00%
2004	39.45%	3.87%	29.13%	10.54%	8.95%	0.06%	8.00%	100.00%
2005	37.80%	4.35%	29.48%	12.39%	7.78%	0.19%	8.00%	100.00%
2006	46.42%	3.46%	24.28%	10.10%	7.67%	0.08%	8.00%	100.00%
2007	38.50%	3.42%	27.97%	13.05%	8.84%	0.21%	8.00%	100.00%
2008	45.76%	3.17%	24.00%	10.68%	8.22%	0.17%	8.00%	100.00%
2009	39.86%	4.26%	26.42%	12.45%	8.82%	0.18%	8.00%	100.00%
2010	35.76%	4.61%	26.53%	14.72%	9.93%	0.45%	8.00%	100.00%
2011	36.28%	4.94%	25.15%	17.49%	7.78%	0.36%	8.00%	100.00%
2012	38.75%	4.62%	24.85%	15.41%	8.12%	0.25%	8.00%	100.00%
2013	28.12%	5.09%	24.51%	16.60%	8.38%	0.22%	17.08%	100.00%
2014	31.22%	5.88%	27.27%	19.66%	7.71%	0.21%	8.05%	100.00%
2015	29.71%	6.19%	27.13%	21.84%	7.35%	0.22%	7.55%	100.00%

### Historical & Projected Services



**California Water Service Company - Oroville Districts**  
**Water Supply and Demand Analysis and Projections**

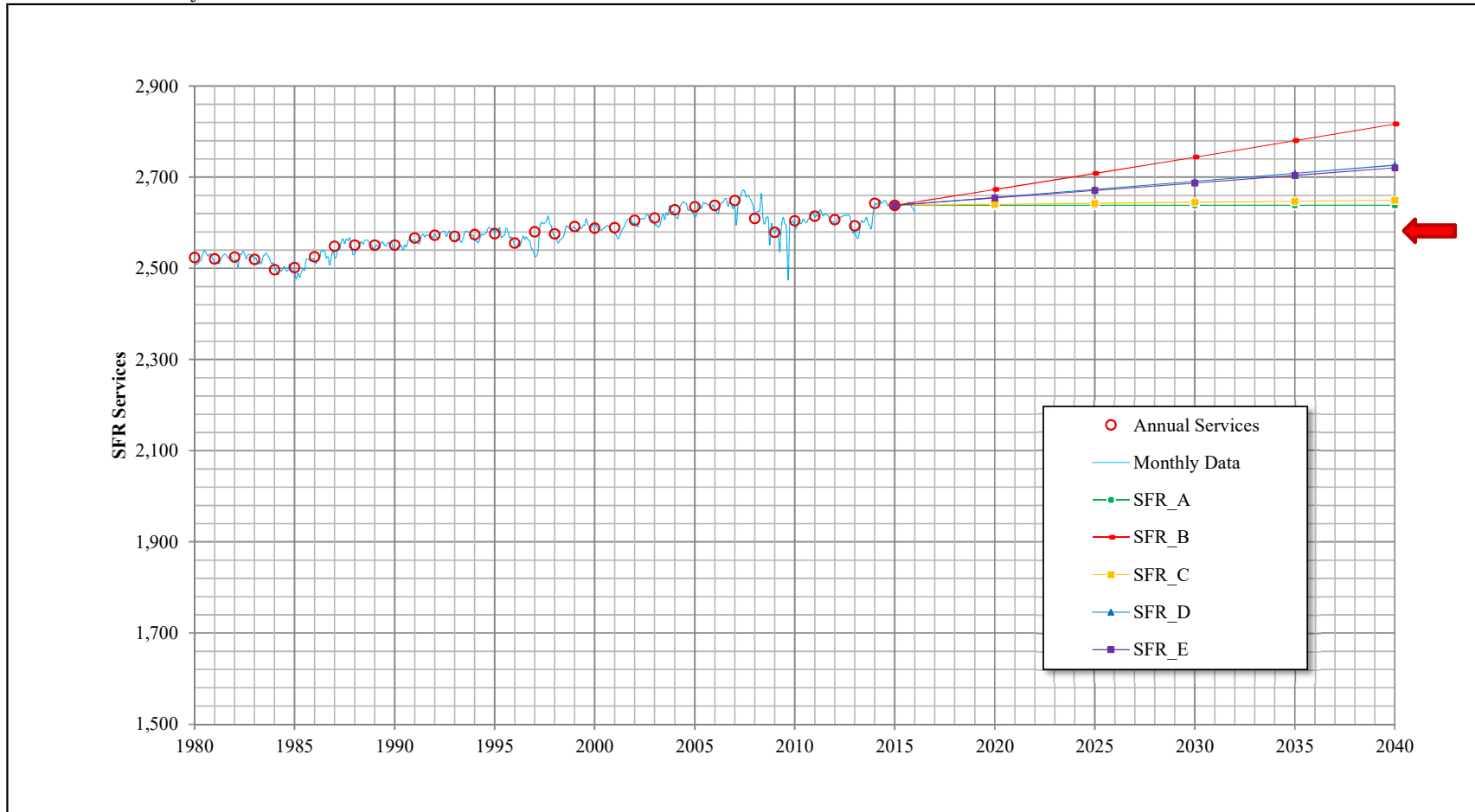
Customer Category	Selected Trend		Growth Rate	Actual Services				Projected Services					
				2000	2005	2010	Base Year 2015	2015	2020	2025	2030	2035	2040
SFR	SFR_E	20 Yr. Avg.	0.12%	2,588	2,635	2,605	2,638	2,638	2,655	2,671	2,687	2,704	2,721
MFR	MFR_C	10 Yr. Avg.	1.68%	14	14	15	70	70	76	83	90	98	106
COM	COM_E	Modified Rate	0.40%	690	694	721	665	665	678	692	706	720	735
IND	IND_E	20 Yr. Avg.	-0.05%	15	16	16	17	17	17	17	17	17	17
GOV	GOV_A	Zero Growth Rate	0.00%	116	120	119	86	86	86	86	86	86	86
OTH	OTH_A	Zero Growth Rate	0.00%	0	4	7	7	7	7	7	7	7	7
TOTAL	Average growth rate 2014-2040		0.21%	3,424	3,483	3,482	3,483	3,483	3,518	3,555	3,593	3,631	3,671

Notes:

# California Water Service Company - Oroville Districts

## Water Supply and Demand Analysis and Projections

### SFR Historical & Projected Services

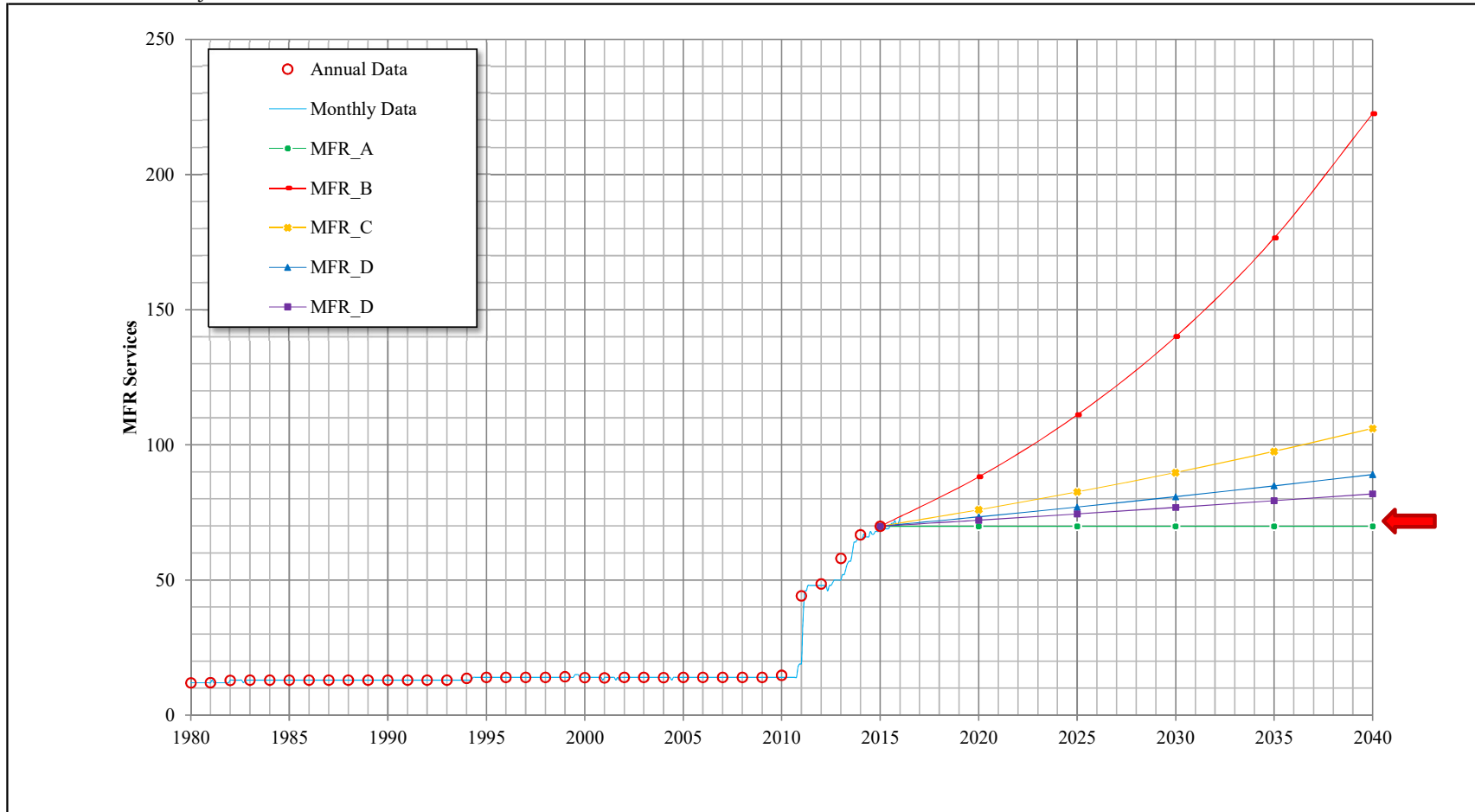


Customer Category	Trend	Growth Rate	Actual				Projected					
			2000	2005	2010	Base Year 2015	Services 2015	Services 2020	Services 2025	Services 2030	Services 2035	Services 2040
SFR	SFR_A	Zero Growth Rate	2,588	2,635	2,605	2,638	2,638	2,638	2,638	2,638	2,638	2,638
	SFR_B	5 Yr. Avg.				2,638	2,638	2,673	2,708	2,744	2,780	2,817
	SFR_C	10 Yr. Avg.				2,638	2,638	2,640	2,643	2,645	2,647	2,649
	SFR_D	15 Yr. Avg.				2,638	2,638	2,656	2,673	2,691	2,708	2,726
	> SFR_E	20 Yr. Avg.				2,638	2,638	2,655	2,671	2,687	2,704	2,721

# California Water Service Company - Oroville Districts

## Water Supply and Demand Analysis and Projections

### MFR Historical & Projected Services

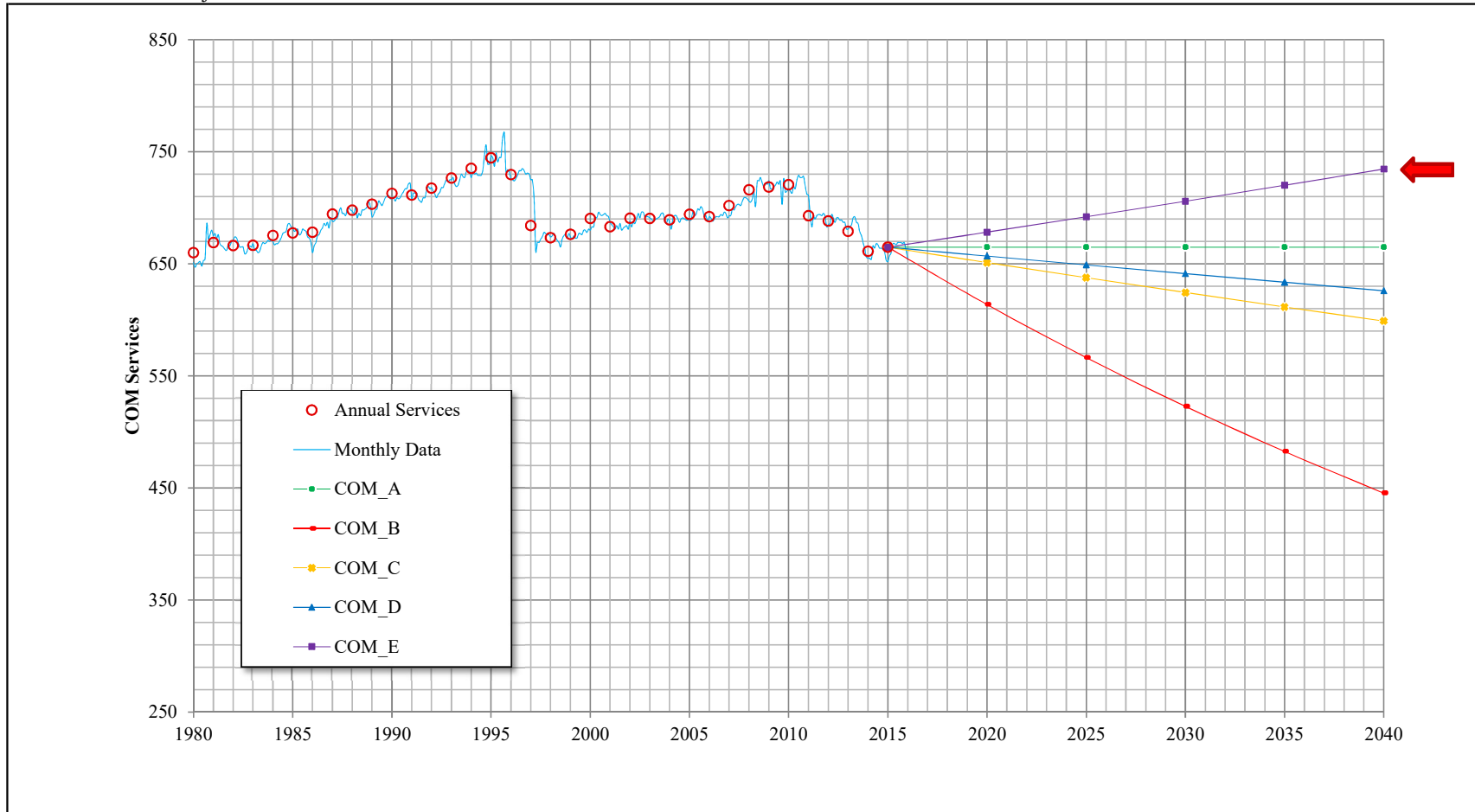


Customer Category	Trend	Growth Rate	Actual				Projected					
			2000	2005	2010	Base Year	Services	Services	Services	Services	Services	Services
						2015	2015	2020	2025	2030	2035	2040
MFR	MFR_A	Zero Growth Rate	14	14	15	70	70	70	70	70	70	70
	MFR_B	5 Yr. Avg.				70	70	88	111	140	177	223
	> MFR_C	10 Yr. Avg.				70	70	76	83	90	98	106
	MFR_D	15 Yr. Avg.				70	70	73	77	81	85	89
	MFR_D	20 Yr. Avg.				70	70	72	74	77	79	82

### California Water Service Company - Oroville Districts

#### Water Supply and Demand Analysis and Projections

#### COM Historical & Projected Services

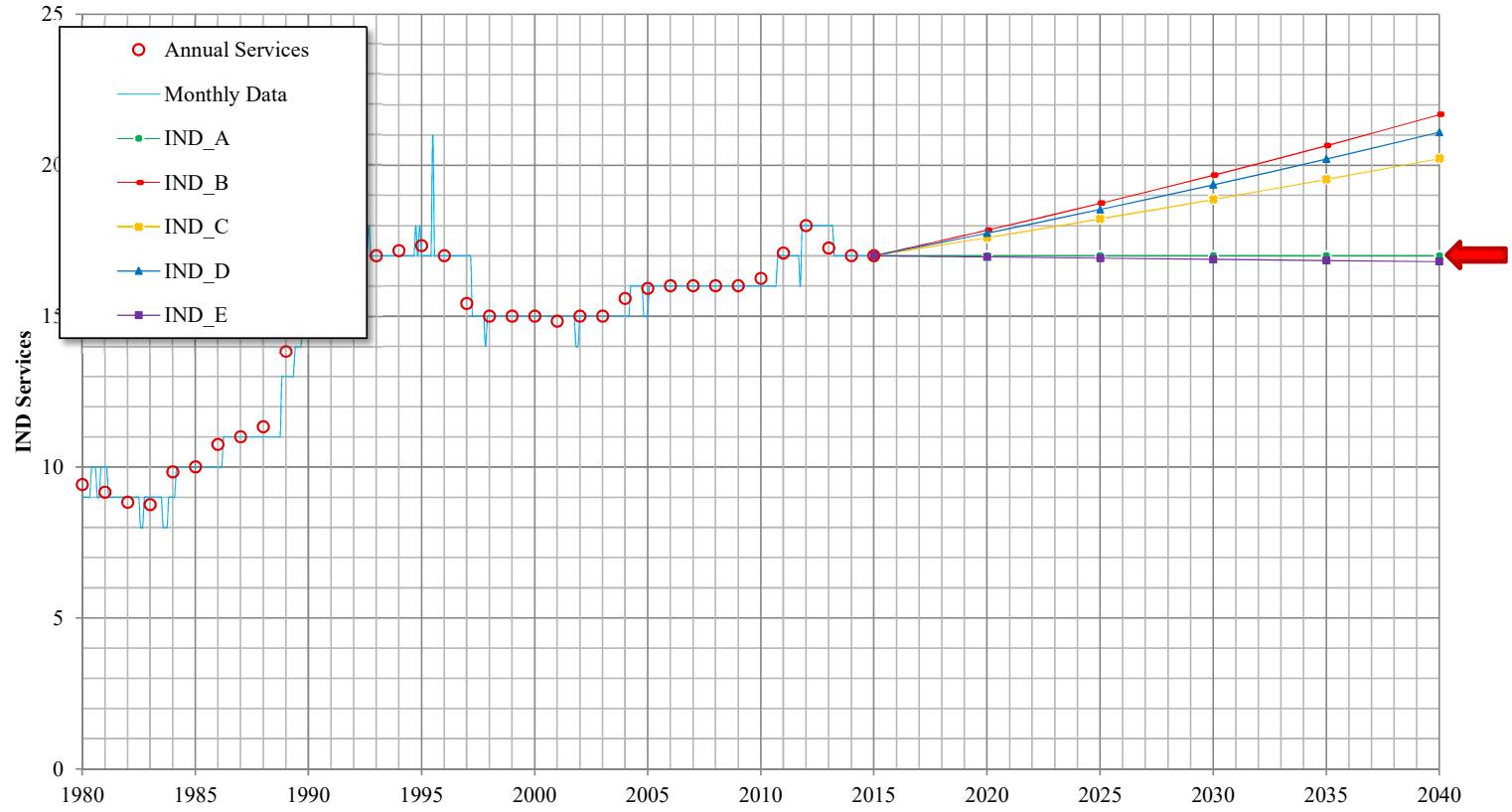


Customer Category	Trend	Growth Rate	Actual				Projected					
			2000	2005	2010	Base Year 2015	Services 2015	Services 2020	Services 2025	Services 2030	Services 2035	Services 2040
COM	COM_A	Zero Growth Rate	690	694	721	665	665	665	665	665	665	665
	COM_B	5 Yr. Avg.				665	665	614	566	523	483	445
	COM_C	10 Yr. Avg.				665	665	651	638	624	612	599
	COM_D	15 Yr. Avg.				665	665	657	649	641	634	626
	> COM_E	Modified Rate				665	665	678	692	706	720	735

### California Water Service Company - Oroville Districts

#### Water Supply and Demand Analysis and Projections

##### IND Historical & Projected Services

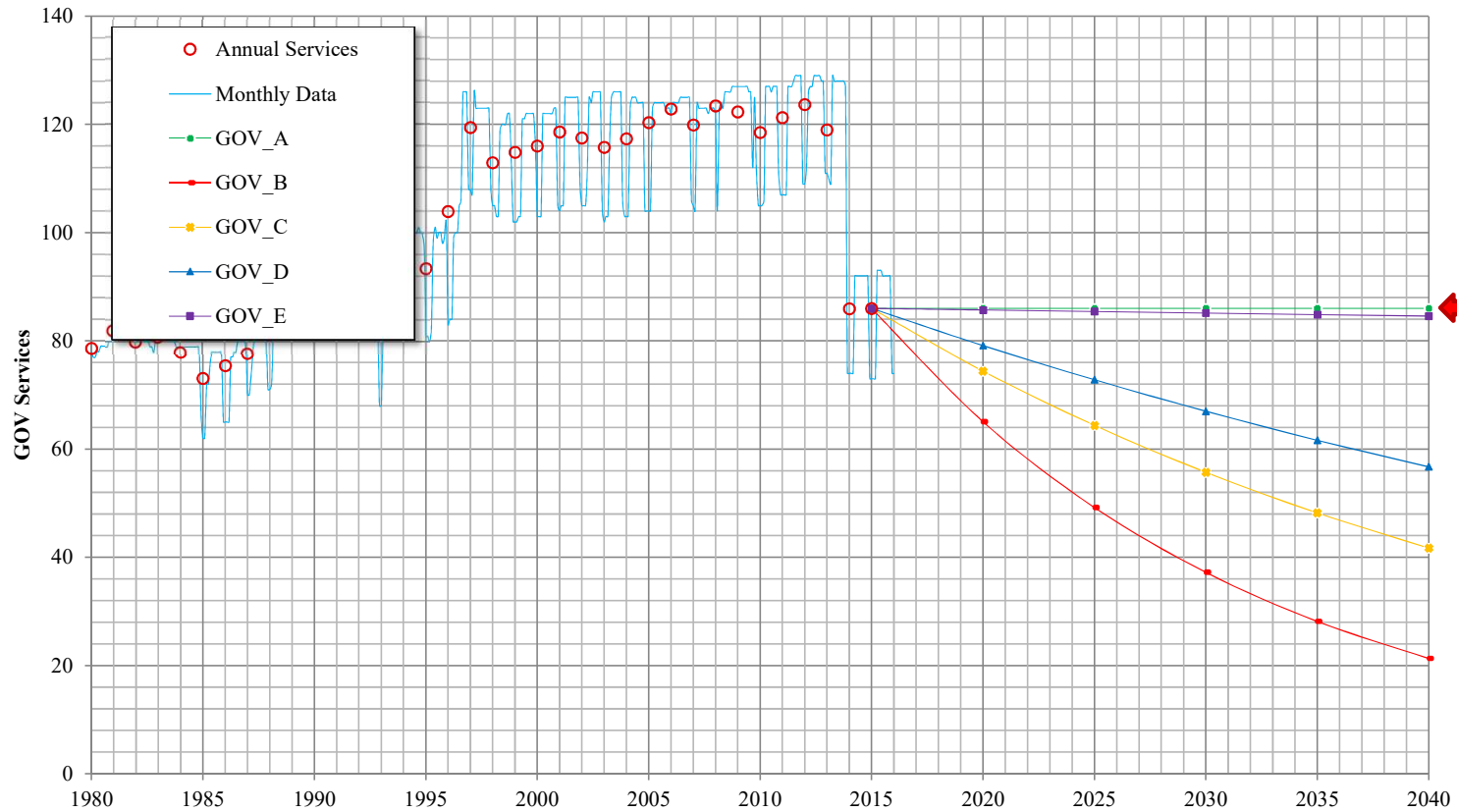


Customer Category	Trend	Growth Rate	Actual				Projected					
			2000	2005	2010	Base Year 2015	Services 2015	Services 2020	Services 2025	Services 2030	Services 2035	Services 2040
IND			15	16	16	17	17	17	17	17	17	17
	IND_A	Zero Growth Rate				17	17	17	17	17	17	17
	IND_B	5 Yr. Avg.				17	17	18	19	20	21	22
	IND_C	10 Yr. Avg.				17	17	18	18	19	20	20
	IND_D	15 Yr. Avg.				17	17	18	19	19	20	21
	> IND_E	20 Yr. Avg.				17	17	17	17	17	17	17

# California Water Service Company - Oroville Districts

## Water Supply and Demand Analysis and Projections

### GOV Historical & Projected Services

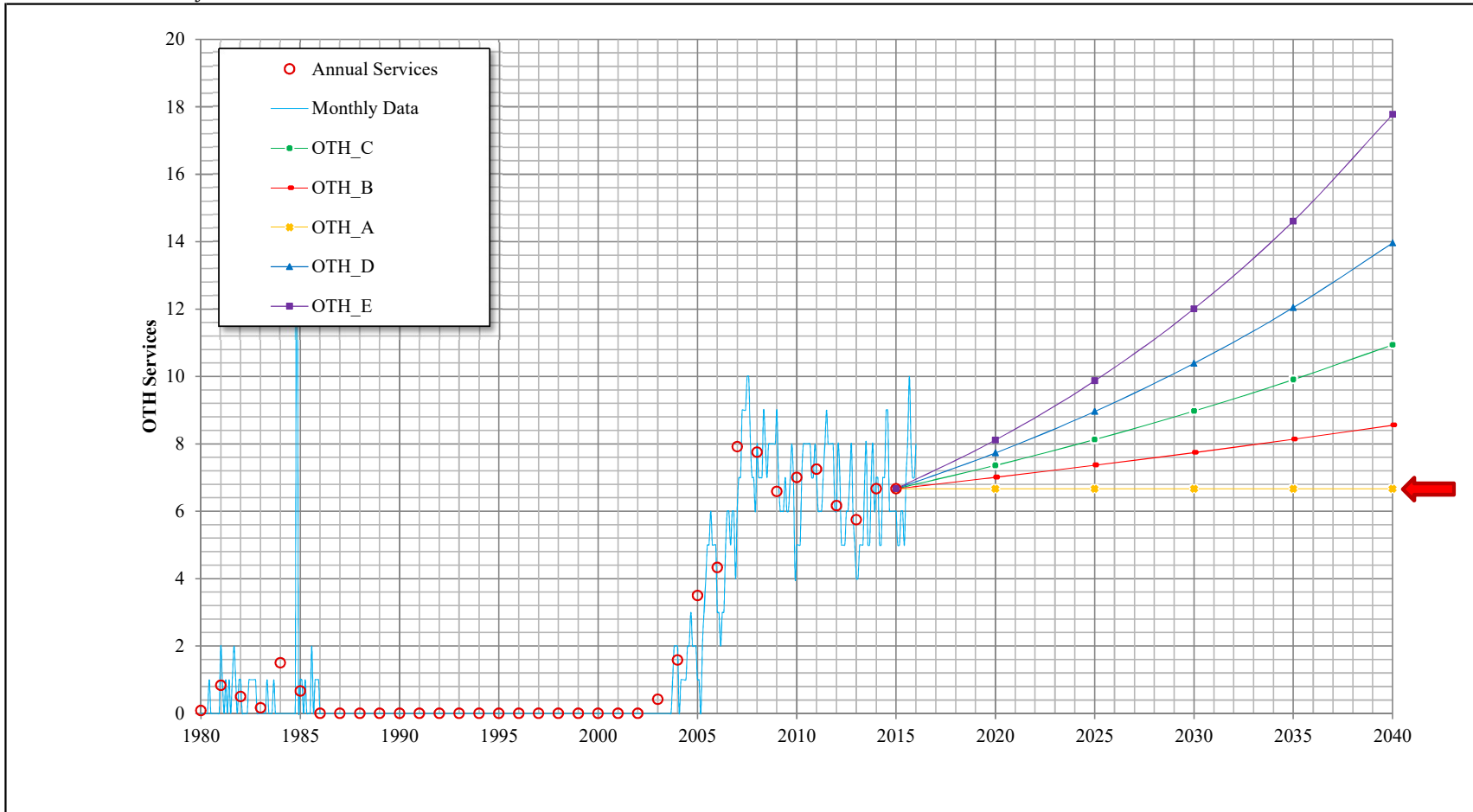


Customer Category	Trend	Growth Rate	Actual				Projected					
			2000	2005	2010	Base Year	Services	Services	Services	Services	Services	Services
						2015	2015	2020	2025	2030	2035	2040
GOV	>	GOV_A Zero Growth Rate	116	120	119	86	86	86	86	86	86	86
		GOV_B 5 Yr. Avg.				86	86	65	49	37	28	21
		GOV_C 10 Yr. Avg.				86	86	74	64	56	48	42
		GOV_D 15 Yr. Avg.				86	86	79	73	67	62	57
		GOV_E 20 Yr. Avg.				86	86	86	85	85	85	85

# California Water Service Company - Oroville Districts

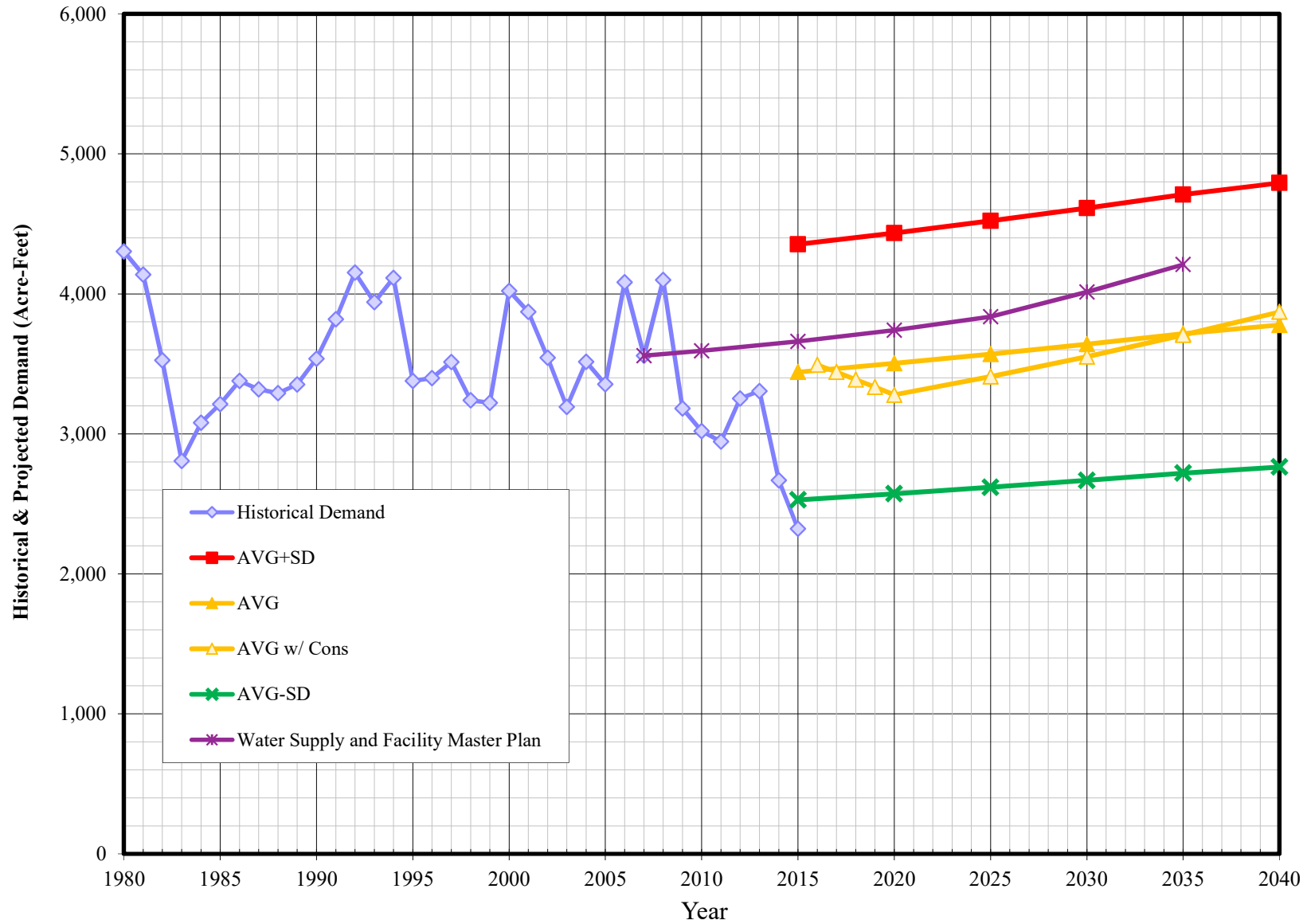
## Water Supply and Demand Analysis and Projections

### OTH Historical & Projected Services



Customer Category	Trend	Growth Rate	Actual				Projected								
			2000	2005	2010	Base Year 2015	Services	Services	Services	Services	Services	Services			
							2015	2020	2025	2030	2035	2040			
OTH	>		0	4	7	7	7	7	7	7	7	7	7	7	7
	OTH_A	Zero Growth Rate	0.00%				7	7	7	7	7	7	7	7	7
	OTH_B	1% Growth Rate	1.00%				7	7	7	8	8	8	8	9	9
	OTH_C	2% Growth Rate	2.00%				7	7	8	9	10	10	11	11	11
	OTH_D	3% Growth Rate	3.00%				7	7	8	9	10	12	12	14	14
	OTH_E	4% Growth Rate	4.00%				7	7	8	10	12	15	15	18	18

# Historical & Projected Demand (ORO)

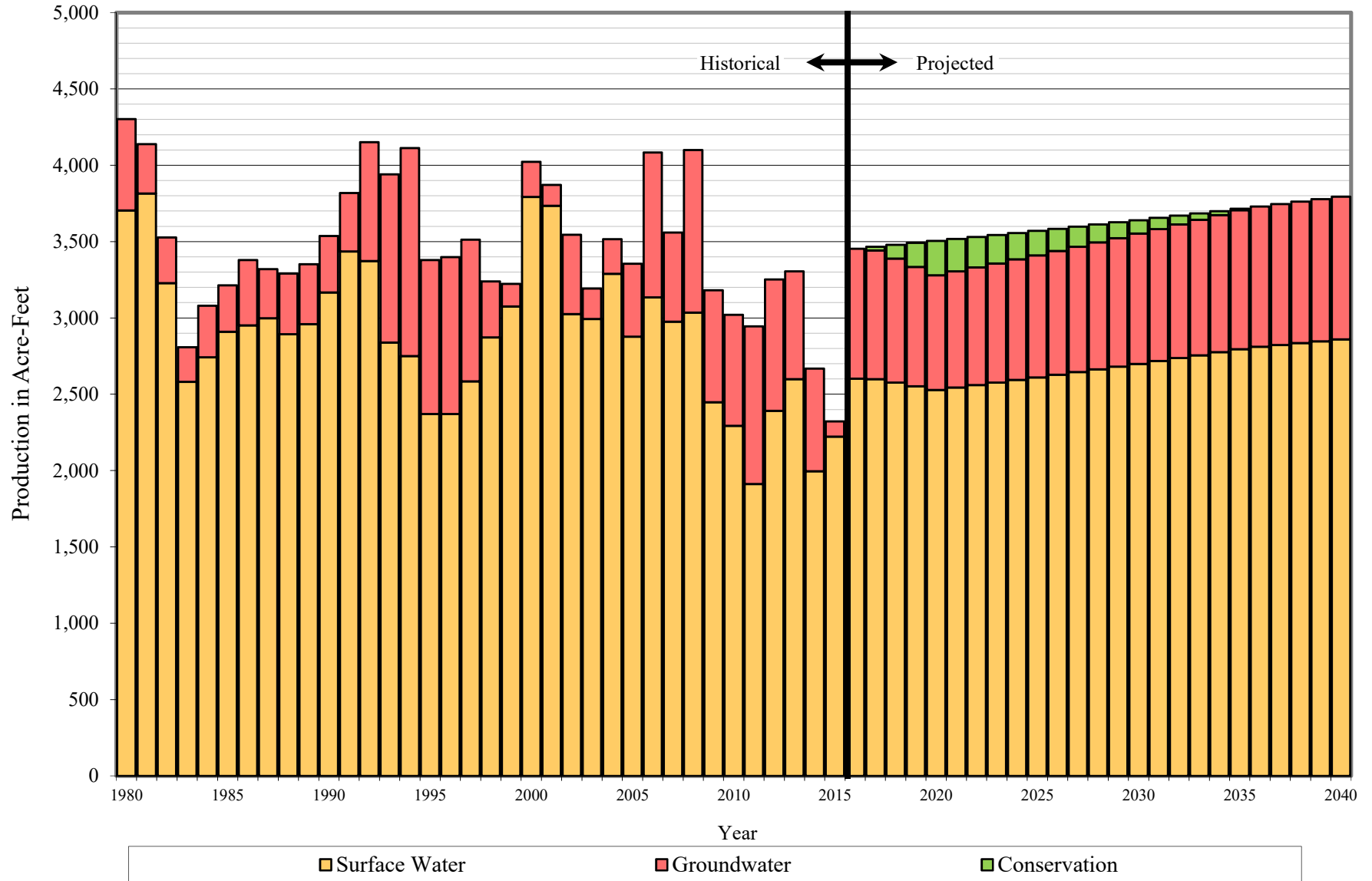


**California Water Service Company - Oroville Districts**  
**Water Supply and Demand Analysis and Projections**  
 Actual & Projected Demand in Acre-Feet

Worksheet 9

Customer Category	Actual Demand (AFY)								Projected Demand (AFY)					
	1980	1985	1990	1995	2000	2005	2010	2015	2015	2020	2025	2030	2035	2040
SFR	2,300	1,428	1,463	1,368	1,794	1,268	1,080	690	1,632	1,642	1,653	1,663	1,673	1,681
									1,237	1,244	1,252	1,260	1,268	1,274
									841	846	852	857	862	866
MFR	53	89	92	130	171	146	139	144	587	639	694	755	820	877
									426	463	503	547	594	635
									264	287	312	339	368	394
COM	743	767	845	895	951	989	801	630	905	923	941	960	980	996
									797	813	830	846	863	877
									690	704	718	732	747	759
IND	640	442	615	483	524	416	445	507	673	671	670	668	666	665
									484	483	482	481	480	479
									296	295	294	294	293	292
GOV	222	224	239	233	262	261	300	171	225	225	225	225	225	225
									202	202	202	202	202	202
									178	178	178	178	178	178
OTH	1	6	0	0	0	7	14	5	10	10	10	10	10	10
									7	7	7	7	7	7
									5	5	5	5	5	5
UAWF	344	257	283	270	322	268	242	175	322	325	328	332	335	338
									289	291	294	298	301	303
									255	258	261	263	266	269
TOTAL (AFY)	4,303	3,213	3,537	3,378	4,022	3,355	3,020	2,322	4,354	4,435	4,521	4,613	4,710	4,792
									3,441	3,504	3,570	3,640	3,715	3,778
									2,529	2,573	2,619	2,668	2,720	2,763
TOTAL (MGD)	3.841	2.868	3.157	3.016	3.591	2.995	2.696	2.073	3.887	3.959	4.036	4.118	4.205	4.278
									3.072	3.128	3.187	3.250	3.316	3.373
									2.257	2.297	2.338	2.382	2.428	2.467

# Historical and Projected Distribution of Demand by Source

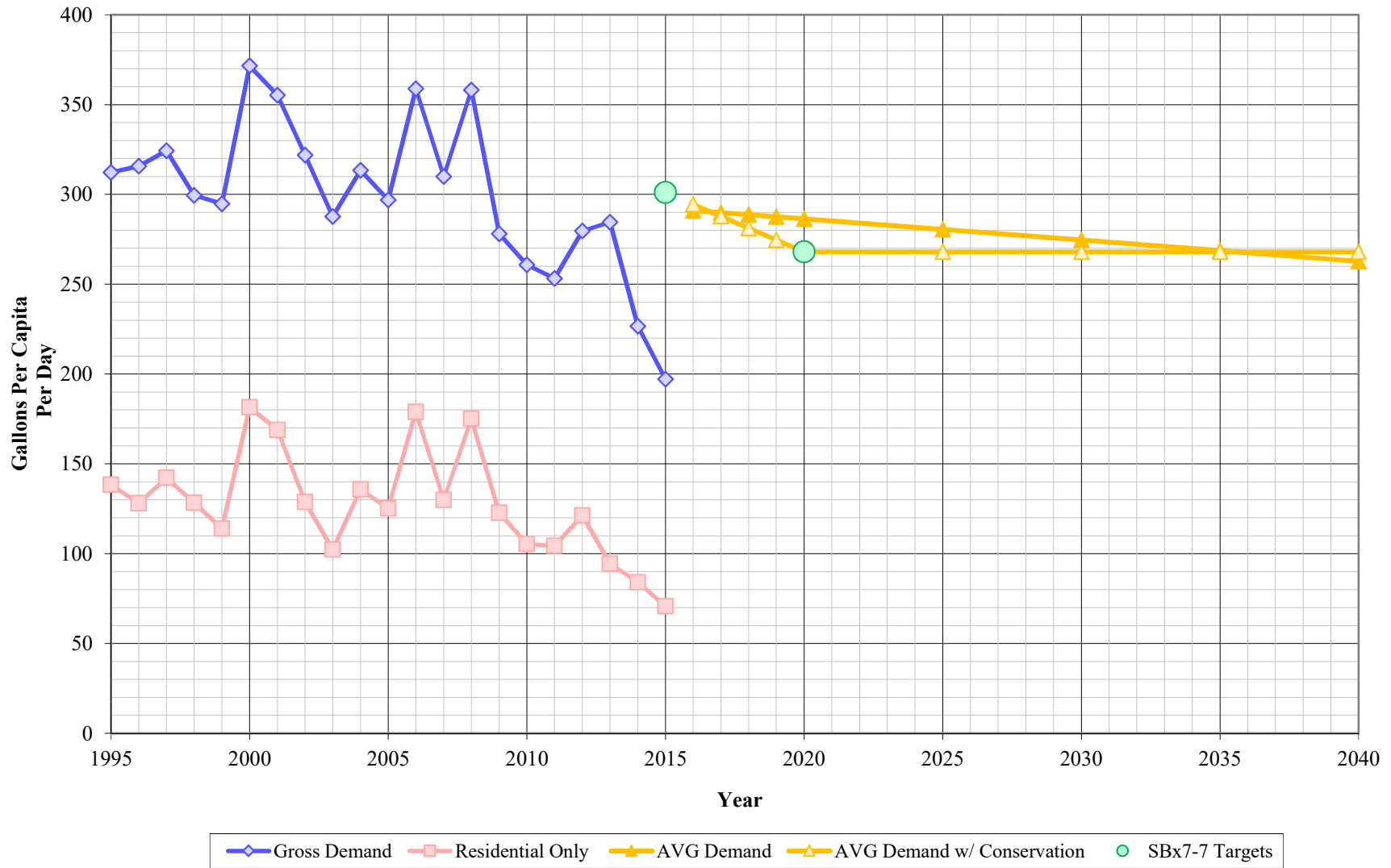


**California Water Service Company - Oroville Districts**  
**Water Supply and Demand Analysis and Projections**  
**Historical and Projected Distribution of Demand by Source**

Worksheet 10

Year	Surface Water		Groundwater		Conservation		Total	
	MGD	AFY	MGD	AFY	MGD	AFY	MGD	AFY
1980	3.31	3,705	0.53	598			3.84	4,303
1981	3.41	3,815	0.29	323			3.69	4,138
1982	2.88	3,228	0.27	299			3.15	3,527
1983	2.30	2,581	0.20	226			2.51	2,807
1984	2.45	2,741	0.30	339			2.75	3,080
1985	2.60	2,909	0.27	304			2.87	3,213
1986	2.63	2,950	0.38	428			3.02	3,379
1987	2.68	2,998	0.29	321			2.96	3,319
1988	2.58	2,893	0.35	398			2.94	3,290
1989	2.64	2,959	0.35	393			2.99	3,352
1990	2.83	3,167	0.33	370			3.16	3,537
1991	3.07	3,436	0.34	383			3.41	3,819
1992	3.01	3,372	0.70	780			3.71	4,152
1993	2.53	2,838	0.98	1,102			3.52	3,940
1994	2.45	2,750	1.22	1,363			3.67	4,113
1995	2.12	2,370	0.90	1,009			3.02	3,378
1996	2.12	2,370	0.92	1,028			3.03	3,399
1997	2.31	2,584	0.83	928			3.14	3,513
1998	2.56	2,872	0.33	368			2.89	3,240
1999	2.75	3,075	0.13	148			2.88	3,223
2000	3.39	3,792	0.21	230			3.59	4,022
2001	3.33	3,734	0.12	137			3.46	3,871
2002	2.70	3,025	0.46	520			3.16	3,545
2003	2.67	2,993	0.18	199			2.85	3,192
2004	2.94	3,289	0.20	226			3.14	3,515
2005	2.57	2,877	0.43	478			3.00	3,355
2006	2.80	3,135	0.85	949			3.65	4,083
2007	2.66	2,976	0.52	583			3.18	3,559
2008	2.71	3,034	0.95	1,066			3.66	4,100
2009	2.19	2,448	0.65	733			2.84	3,181
2010	2.05	2,293	0.65	727			2.70	3,020
2011	1.71	1,912	0.92	1,032	0.00	0	2.63	2,945
2012	2.13	2,390	0.77	862	0.00	0	2.90	3,252
2013	2.32	2,598	0.63	707	0.00	0	2.95	3,305
2014	1.78	1,995	0.60	672	0.00	0	2.38	2,668
2015	1.98	2,222	0.09	100	0.00	0	2.07	2,322
2016	2.32	2,602	0.76	851	0.00	0	3.08	3,454
2017	2.32	2,599	0.75	842	0.02	25	3.09	3,466
2018	2.30	2,576	0.72	812	0.08	90	3.11	3,478
2019	2.28	2,552	0.70	782	0.14	157	3.12	3,491
2020	2.26	2,528	0.67	751	0.20	225	3.13	3,504
2021	2.27	2,544	0.68	760	0.19	213	3.14	3,517
2022	2.29	2,560	0.69	770	0.18	200	3.15	3,530
2023	2.30	2,577	0.70	780	0.17	187	3.16	3,543
2024	2.32	2,593	0.71	790	0.15	173	3.18	3,557
2025	2.33	2,610	0.71	800	0.14	160	3.19	3,570
2026	2.35	2,627	0.72	810	0.13	146	3.20	3,584
2027	2.36	2,645	0.73	821	0.12	132	3.21	3,598
2028	2.38	2,663	0.74	831	0.11	118	3.22	3,612
2029	2.39	2,681	0.75	842	0.09	103	3.24	3,626
2030	2.41	2,699	0.76	853	0.08	88	3.25	3,640
2031	2.43	2,718	0.77	864	0.07	73	3.26	3,655
2032	2.44	2,736	0.78	876	0.05	58	3.28	3,670
2033	2.46	2,755	0.79	887	0.04	42	3.29	3,684
2034	2.48	2,775	0.80	899	0.02	26	3.30	3,700
2035	2.49	2,795	0.81	911	0.01	9	3.32	3,715
2036	2.51	2,811	0.82	919	0.00	0	3.33	3,730
2037	2.52	2,823	0.82	923	0.00	0	3.34	3,746
2038	2.53	2,835	0.83	927	0.00	0	3.36	3,762
2039	2.54	2,847	0.83	931	0.00	0	3.37	3,778
2040	2.55	2,859	0.83	935	0.00	0	3.39	3,794

# Per Capita Consumption (ORO)



**California Water Service Company - Oroville Districts**  
**Water Supply and Demand Analysis and Projections**  
**Per Capita Water Demand Calculation**

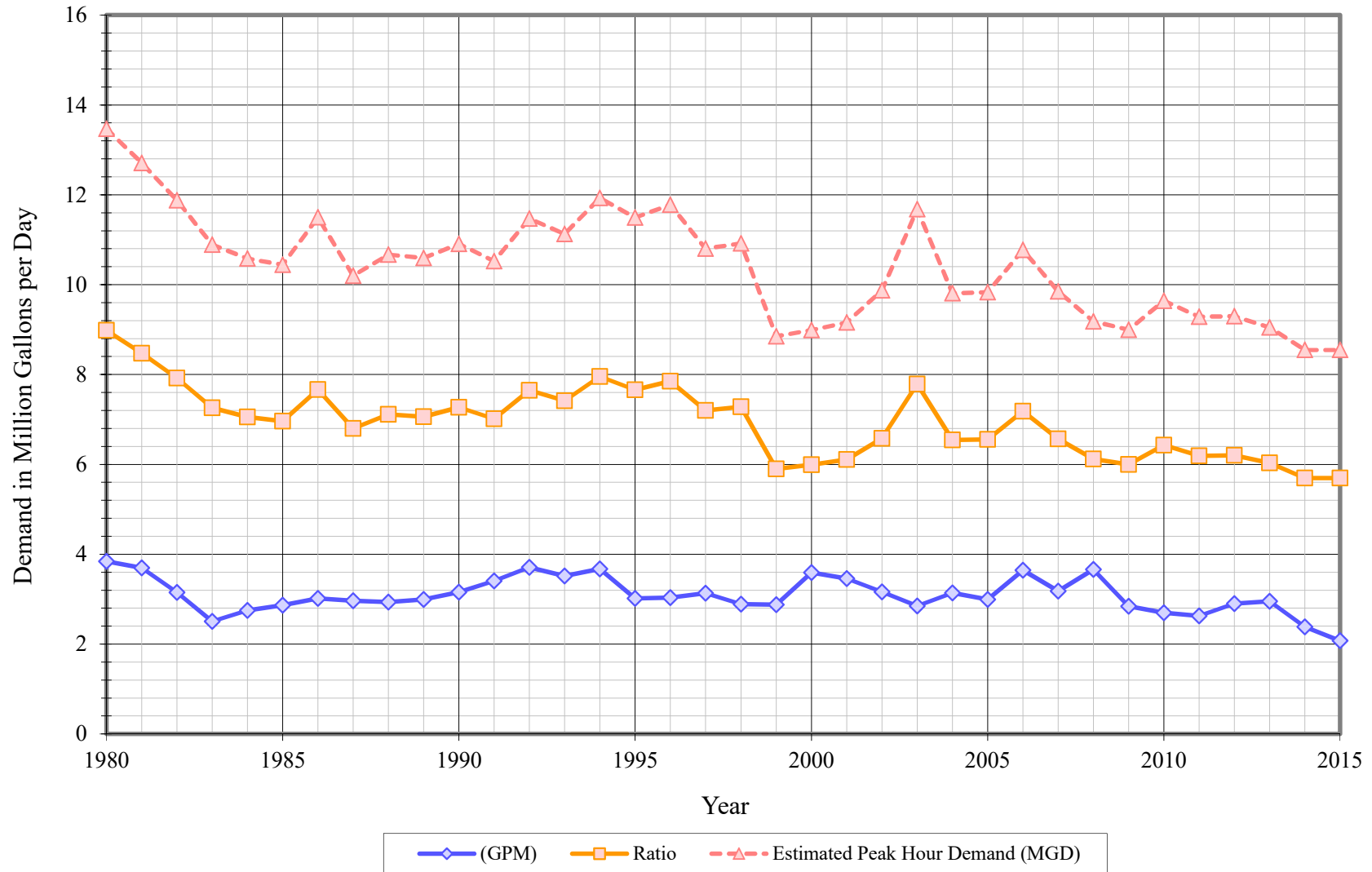
Worksheet 15

Year	POP	Historical				Projected			
		Gross Demand		Residential Only		Avg Demand		Avg Demand w/ Cons	
		Usage (AFY)	Per Capita (GPCPD)	Usage (AFY)	Per Capita (GPCPD)	Demand (AFY)	Per Capita (GPCPD)	Demand (AFY)	Per Capita (GPCPD)
1995	9,658	3,378	312	1,497	138				
1996	9,611	3,399	316	1,378	128				
1997	9,668	3,513	324	1,541	142				
1998	9,657	3,240	300	1,388	128				
1999	9,761	3,223	295	1,246	114				
2000	9,663	4,022	372	1,964	181				
2001	9,728	3,871	355	1,840	169				
2002	9,829	3,545	322	1,418	129				
2003	9,904	3,192	288	1,136	102				
2004	10,009	3,515	313	1,523	136				
2005	10,088	3,355	297	1,414	125				
2006	10,159	4,083	359	2,036	179				
2007	10,249	3,559	310	1,492	130				
2008	10,220	4,100	358	2,006	175				
2009	10,213	3,181	278	1,404	123				
2010	10,337	3,020	261	1,219	105				
2011	10,380	2,945	253	1,214	104				
2012	10,383	3,252	280	1,411	121				
2013	10,370	3,305	285	1,098	94				
2014	10,508	2,668	227	990	84				
2015	10,517	2,322	197	834	71				
2016	10,595					3,454	291	3,494	294
2017	10,675					3,466	290	3,441	288
2018	10,756					3,478	289	3,388	281
2019	10,838					3,491	288	3,334	275
2020	10,922					3,504	286	3,279	268
2025	11,360					3,570	281	3,410	268
2030	11,832					3,640	275	3,552	268
2035	12,343					3,715	269	3,705	268
2040	12,895					3,794	263	3,871	268

*SBx7-7 Targets*

2015	301
2020	268

## Average Day, Maximum Day, Peak Demand

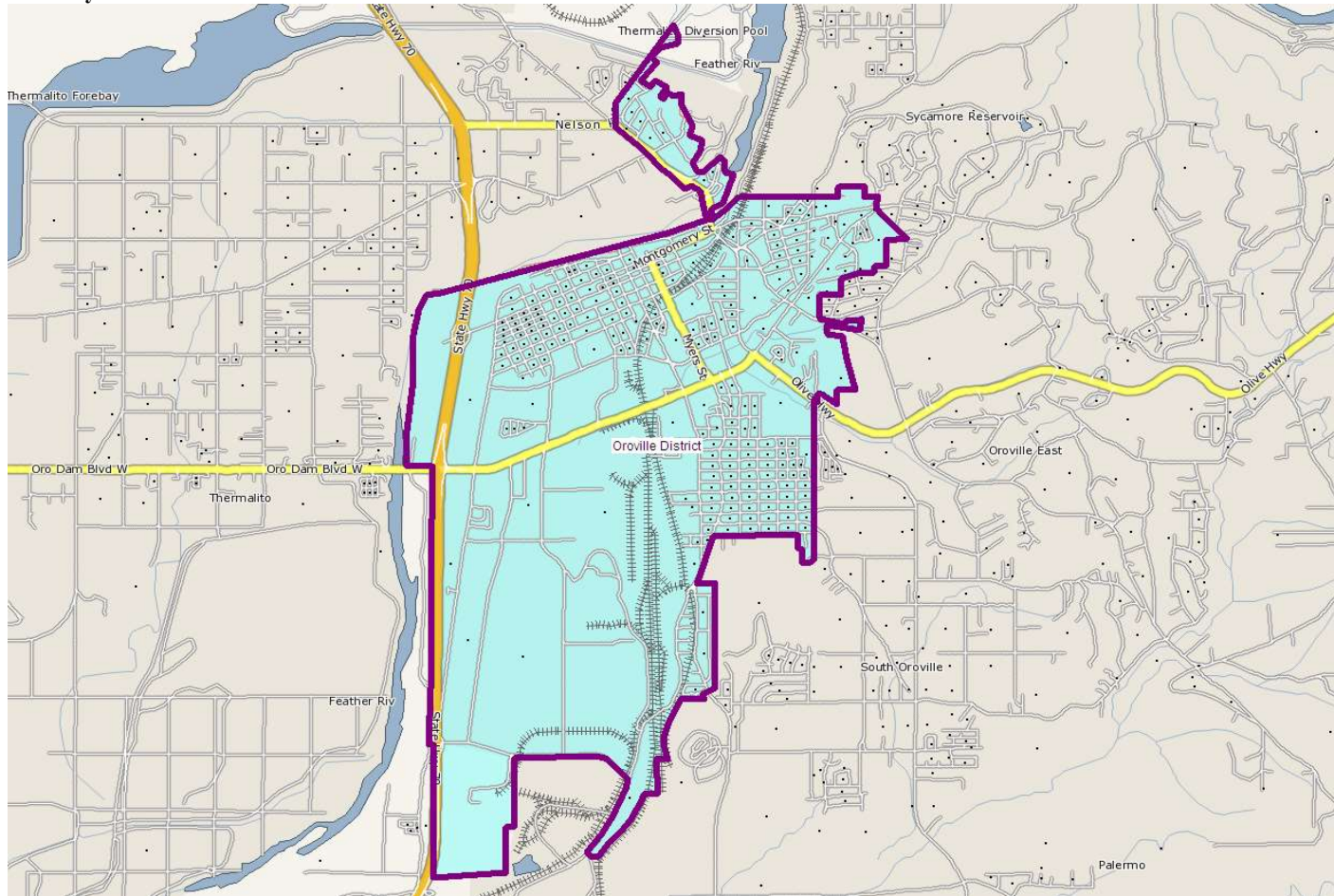


**California Water Service Company - Oroville Districts**  
**Water Supply and Demand Analysis and Projections**  
**Historical and Projected Average Day, Maximum Day, and Peak Demand**

Worksheet 11

Year	Historical Annual Demand		Average Day Demand		Maximum Day Demand		MDD ADD Ratio	Estimated Peak Hour Demand		PHD MDD Ratio	PHD ADD Ratio	Measured Peak Hour Demand		PHD MDD Ratio	
	(AFY)	(MGY)	(MGD)	(GPD)	(MGD)	(GPD)		(MGD)	(GPM)			(MGD)	(GPM)		
1980	4,303	1,402	3.84	1,170	8.98	2,735	2.34	13.47	9,355	1.50	3.51				
1981	4,138	1,348	3.69	1,122	8.47	2,572	2.29	12.71	8,824	1.50	3.44				
1982	3,527	1,149	3.15	956	7.92	2,405	2.52	11.88	8,249	1.50	3.77				
1983	2,807	915	2.51	762	7.26	2,207	2.90	10.89	7,560	1.50	4.34				
1984	3,080	1,003	2.75	840	7.06	2,154	2.57	10.58	7,349	1.50	3.85				
1985	3,213	1,047	2.87	875	6.96	2,125	2.43	10.44	7,252	1.50	3.64				
1986	3,379	1,101	3.02	913	7.67	2,321	2.54	11.50	7,985	1.50	3.81				
1987	3,319	1,081	2.96	886	6.80	2,032	2.29	10.20	7,081	1.50	3.44				
1988	3,290	1,072	2.94	876	7.11	2,120	2.42	10.67	7,407	1.50	3.63				
1989	3,352	1,092	2.99	889	7.06	2,099	2.36	10.59	7,357	1.50	3.54				
1990	3,537	1,152	3.16	934	7.27	2,152	2.30	10.91	7,575	1.50	3.45				
1991	3,819	1,244	3.41	1,004	7.02	2,066	2.06	10.52	7,307	1.50	3.09				
1992	4,152	1,353	3.71	1,088	7.65	2,244	2.06	11.47	7,966	1.50	3.09				
1993	3,940	1,284	3.52	1,029	7.42	2,170	2.11	11.13	7,727	1.50	3.16				
1994	4,113	1,340	3.67	1,069	7.95	2,315	2.17	11.93	8,284	1.50	3.25				
1995	3,378	1,101	3.02	875	7.66	2,224	2.54	11.49	7,981	1.50	3.81				
1996	3,399	1,107	3.03	887	7.85	2,296	2.59	11.78	8,180	1.50	3.88				
1997	3,513	1,145	3.14	919	7.20	2,110	2.30	10.80	7,502	1.50	3.44				
1998	3,240	1,056	2.89	853	7.28	2,147	2.52	10.92	7,582	1.50	3.78				
1999	3,223	1,050	2.88	843	5.90	1,729	2.05	8.85	6,145	1.50	3.08				
2000	4,022	1,311	3.59	1,049	5.99	1,751	1.67	8.99	6,243	1.50	2.50				
2001	3,871	1,261	3.46	1,011	6.11	1,786	1.77	9.16	6,361	1.50	2.65				
2002	3,545	1,155	3.16	919	6.58	1,911	2.08	9.87	6,854	1.50	3.12				
2003	3,192	1,040	2.85	827	7.79	2,259	2.73	11.68	8,109	1.50	4.10				
2004	3,515	1,145	3.14	905	6.54	1,887	2.08	9.81	6,814	1.50	3.13				
2005	3,355	1,093	3.00	860	6.55	1,881	2.19	9.83	6,826	1.50	3.28				
2006	4,083	1,331	3.65	1,045	7.18	2,059	1.97	10.77	7,481	1.50	2.96				
2007	3,559	1,160	3.18	905	6.57	1,871	2.07	9.85	6,839	1.50	3.10				
2008	4,100	1,336	3.66	1,050	6.12	1,755	1.67	9.18	6,375	1.50	2.51				
2009	3,181	1,037	2.84	822	6.00	1,735	2.11	8.99	6,246	1.50	3.17				
2010	3,020	984	2.70	774	6.43	1,846	2.38	9.64	6,696	1.50	3.58				
2011	2,945	960	2.63	752	6.19	1,770	2.35	9.29	6,448	1.50	3.53				
2012	3,252	1,060	2.90	832	6.20	1,775	2.14	9.30	6,457	1.50	3.20				
2013	3,305	1,077	2.95	850	6.03	1,736	2.04	9.05	6,281	1.50	3.07				
2014	2,668	869	2.38	684	5.70	1,637	2.39	8.55	5,934	1.50	3.59				
2015	2,322	757	2.07	595	5.70	1,636	2.75	8.55	5,934	1.50	4.12				
10 year Average (2006-2015)			2.90	912	6.59	1,899	2.11	9.88	6,727	1.50	3.06				
5 year Average (2011-2015)			2.59	919	6.46	1,853	2.04	9.69	6,860	1.50	3.16				

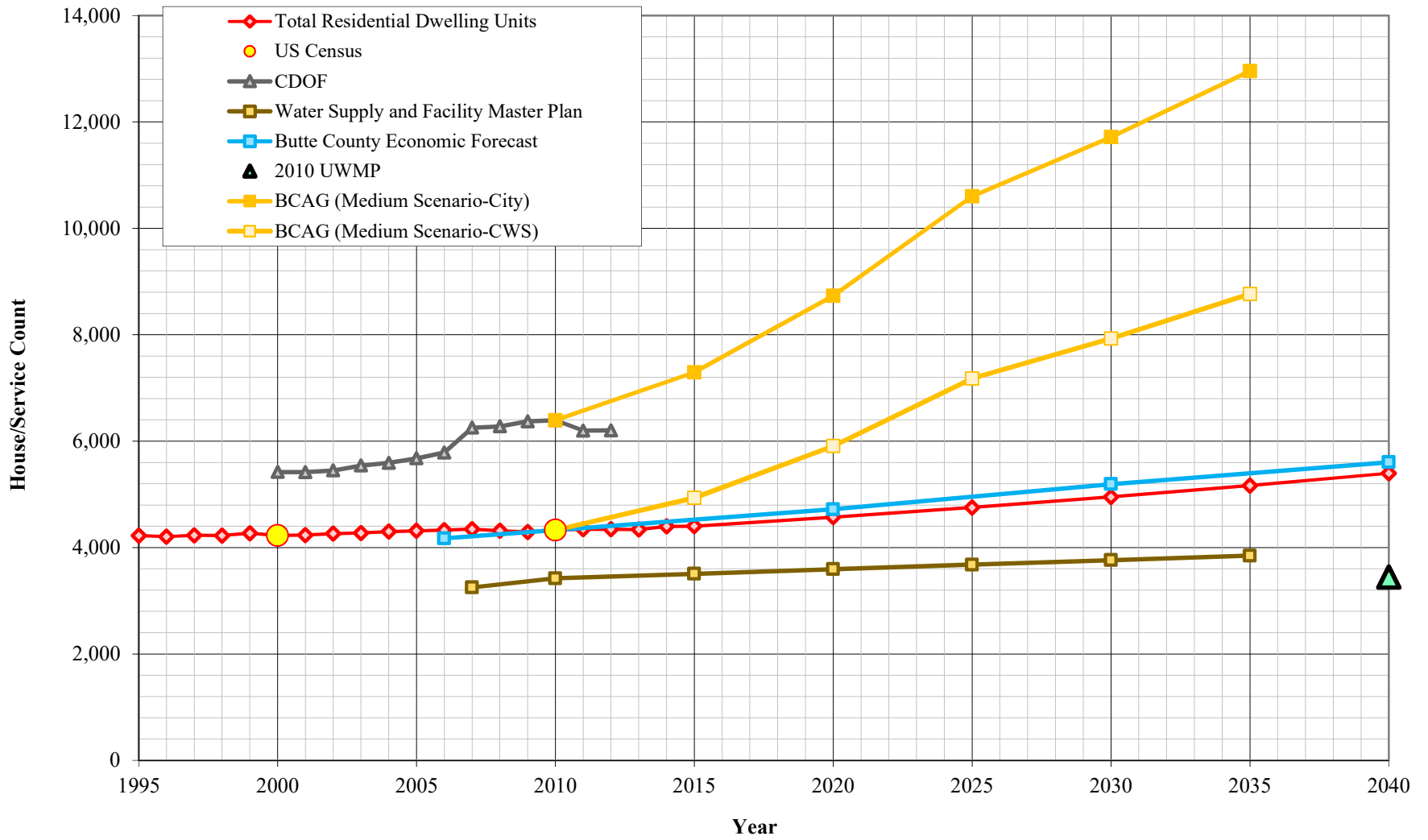
**California Water Service Company - Oroville Districts**  
**Water Supply and Demand Analysis and Projections**  
**MarPlot Summary**



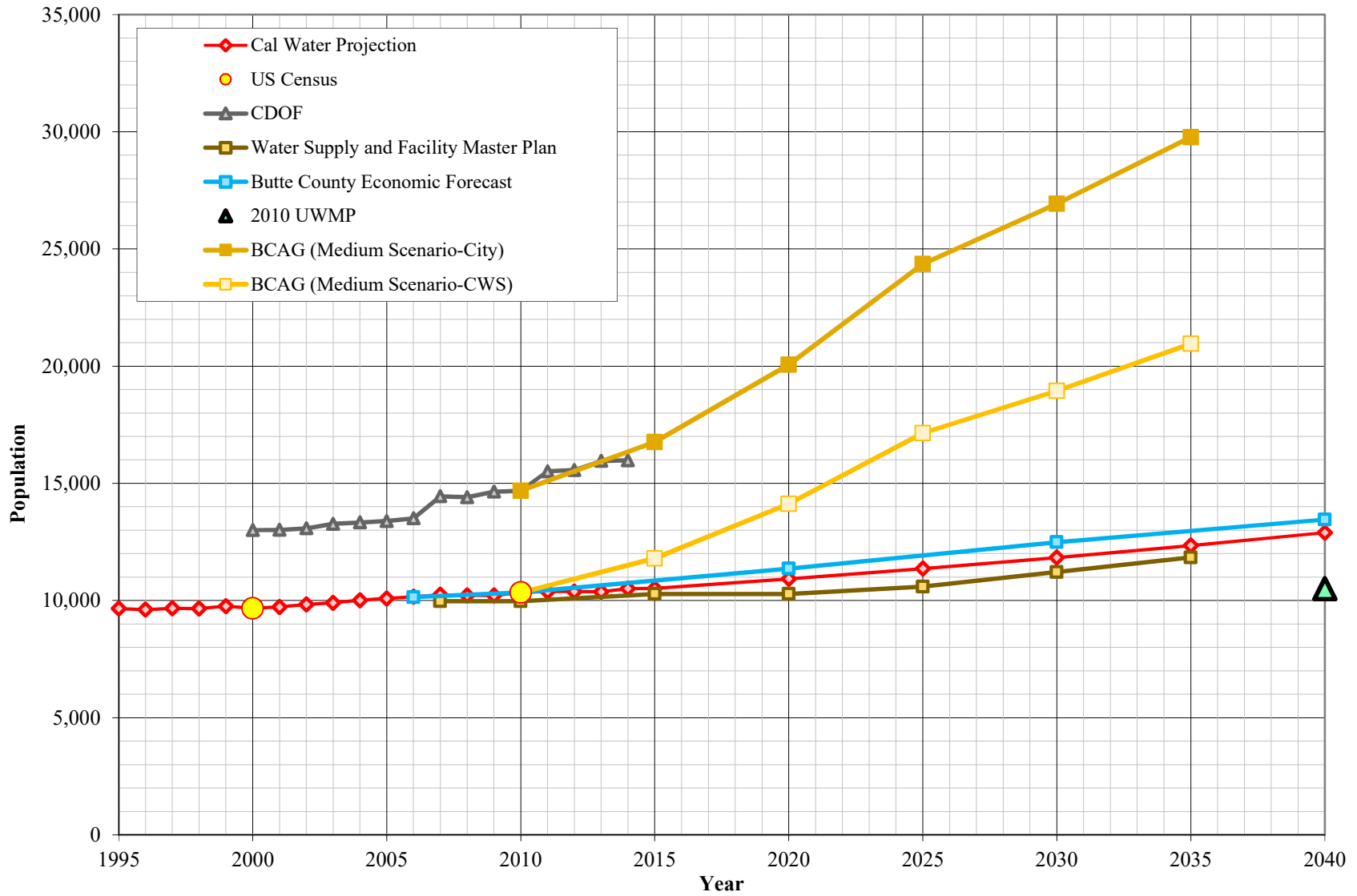
System	US Census 2000 Summary				US Census 2010 Summary				2000-2010 Change		
	Census Blocks	Population	Housing Units (HU)	Density	Census Blocks	Population	Housing Units (HU)	Density	Percentage Population Change	Percentage HU Change	Density Change
Oroville	218	9,663	4,227	2.29	250	10,337	4,326	2.39	7.0%	2.3%	4.5%
Oroville	218	9,663	4,227	2.29	250	10,337	4,326	2.39	7.0%	2.3%	4.5%

MARPLOT disclaimer: The population and housing number given above are only rough estimates. They are based on the US Census Blocks. Although Census Blocks are polygons, MARPLOT uses the centroid, or center point, rather than the entire polygon. If a Census Block centroid is within any of the MARPLOT selected objects, the population and housing numbers for that block are tallied, even if only part of the block is within the selected object. It is possible for a block not be counted if its centroid is not within selected objects, even though part of the block is within the selected objects.

# Housing Projections



# Population Projections



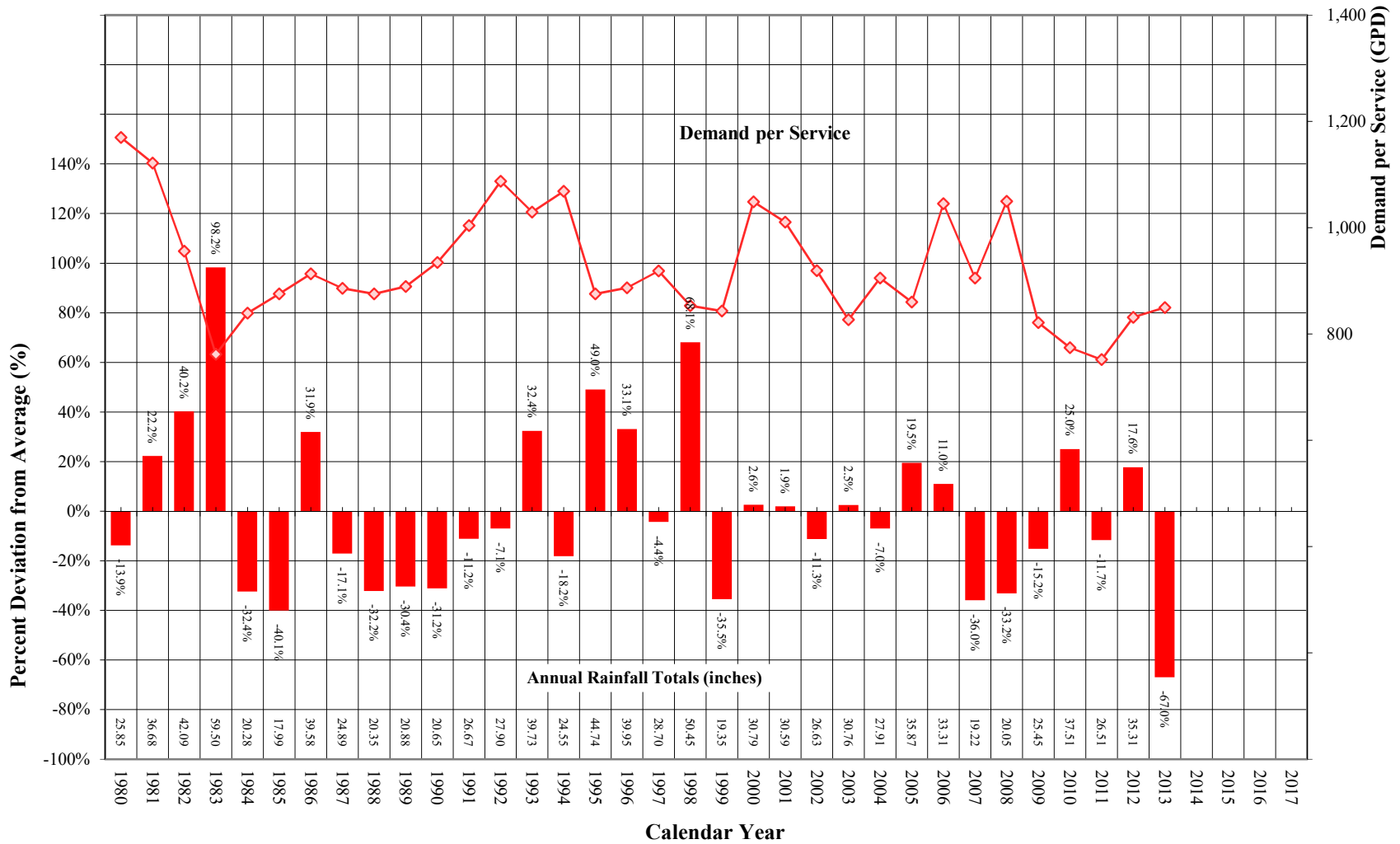
**California Water Service Company - Oroville Districts**  
**Water Supply and Demand Analysis and Projections**  
**Population Estimate**

Year	US Census		Persons per Housing Unit	Single Family	Multi Family Residential			Flat Rate
	Population	Housing Units		Residential	Residential	Unit	Residential	
				Services (DU)	Services	Units (DU)	Density	Services (DU)
2000	9,663	4,227	2.286	2,180	14	1,639	117.8	408
2010	10,337	4,326	2.390	2,405	15	1,722	116.7	199
	7.0%	2.3%	4.5%	10.3%	6.0%	5.0%	-0.9%	-51.2%

Year	Single Family Residential Services (DU)	Multi Family Residential			Flat Rate Residential Services (DU)	Total Residential Dwelling Units	Persons per Housing Unit	Estimated District Population
		Services	Residential Units (DU)	Unit Density				
1995	1,982	14	1,649	117.8	594	4,225	2.286	9,658
1996	2,010	14	1,649	117.8	546	4,204	2.286	9,611
1997	2,070	14	1,649	117.8	510	4,229	2.286	9,668
1998	2,097	14	1,649	117.8	479	4,224	2.286	9,657
1999	2,153	14	1,678	117.8	439	4,270	2.286	9,761
2000	2,180	14	1,639	117.8	408	4,227	2.286	9,663
2001	2,200	14	1,647	119.1	389	4,236	2.296	9,728
2002	2,224	14	1,655	118.2	382	4,261	2.307	9,829
2003	2,238	14	1,664	118.8	373	4,274	2.317	9,904
2004	2,275	14	1,672	120.1	354	4,301	2.327	10,009
2005	2,302	14	1,680	120.0	333	4,315	2.338	10,088
2006	2,319	14	1,688	120.6	320	4,327	2.348	10,159
2007	2,342	14	1,697	121.2	307	4,346	2.358	10,249
2008	2,344	14	1,705	121.8	265	4,315	2.369	10,220
2009	2,358	14	1,713	122.4	222	4,293	2.379	10,213
2010	2,405	15	1,722	116.7	199	4,326	2.390	10,337
2011	2,471	44	1,730	39.2	144	4,344	2.390	10,380
2012	2,521	49	1,738	35.8	86	4,345	2.390	10,383
2013	2,594	58	1,746	30.1	0	4,340	2.390	10,370
2014	2,643	67	1,755	26.3	0	4,398	2.390	10,508
2015	2,638	70	1,763	25.2	0	4,401	2.390	10,517
2020	2,655	76	1,916	25.2	0	4,571	2.390	10,922
2025	2,671	83	2,083	25.2	0	4,754	2.390	11,360
2030	2,687	90	2,264	25.2	0	4,952	2.390	11,832
2035	2,704	98	2,462	25.2	0	5,166	2.390	12,343
2040	2,721	106	2,676	25.2	0	5,396	2.390	12,895

Notes: linear extrapolation used to estimated MFR-DU from 2000. Estimate extend until 2011 due to reclassification, afterwards a constant MFR Unit Density is used.

# Comparison of Annual Rainfall to Historical Average



**California Water Service Company - Oroville Districts**  
**Water Supply and Demand Analysis and Projections**  
 Temperature & Rainfall History

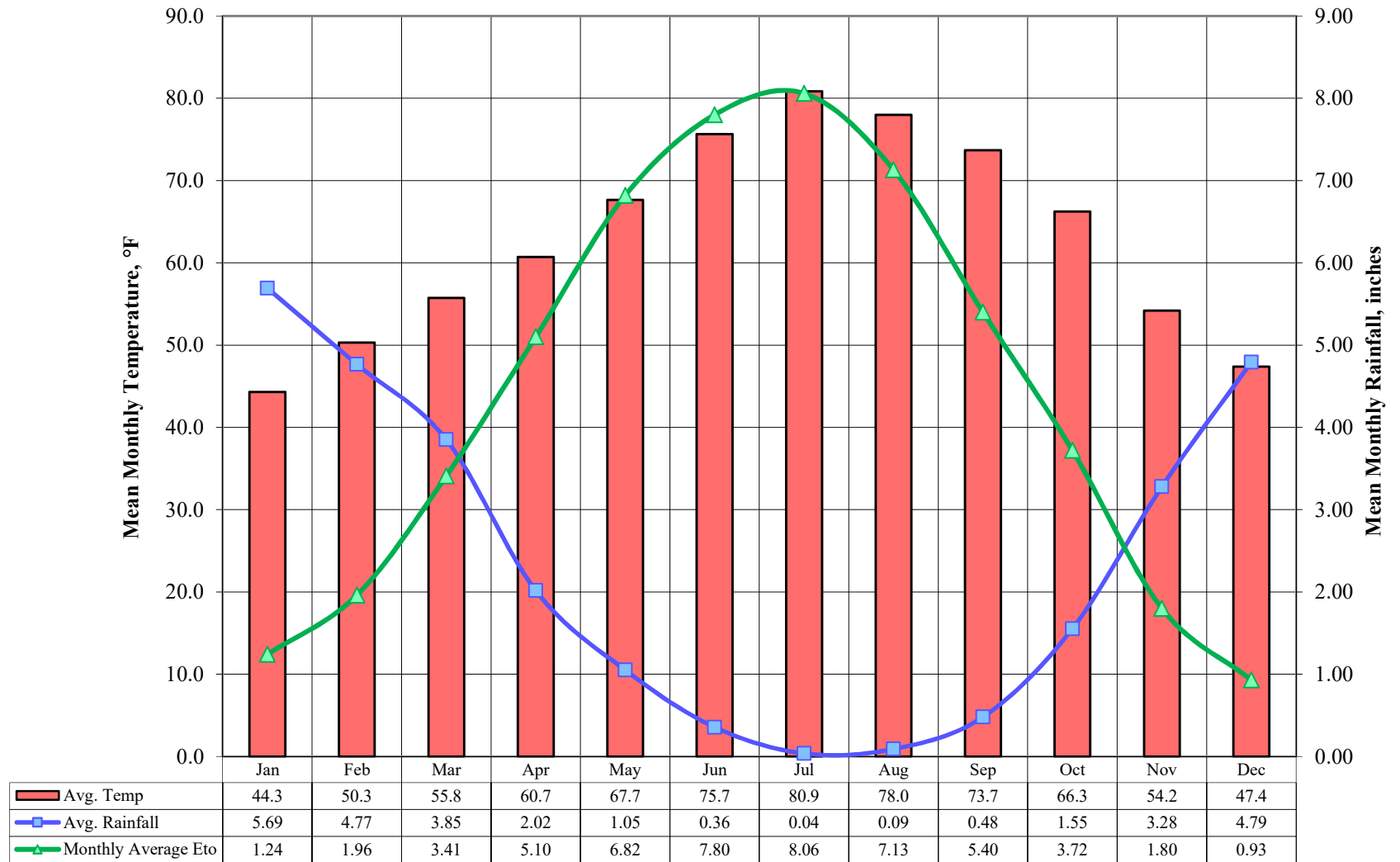
Year	Precipitation		Temperature			Demand per Service (gpd)	Percent of Average Demand
	Annual (in)	Percent Variation	Tmax (°F)	Tmin (°F)	Mean (°F)		
1980	25.85	-13.9%	94.40	39.40	66.9	1,170	26.7%
1981	36.68	22.2%	96.40	39.90	68.2	1,122	21.5%
1982	42.09	40.2%	92.20	34.70	63.5	956	3.5%
1983	59.50	98.2%	93.20	37.40	65.3	762	-17.5%
1984	20.28	-32.4%	100.30	36.90	68.6	840	-9.1%
1985	17.99	-40.1%	96.80	34.10	65.5	875	-5.2%
1986	39.58	31.9%	95.20	36.80	66.0	913	-1.1%
1987	24.89	-17.1%	93.70	34.80	64.3	886	-4.0%
1988	20.35	-32.2%	99.30	35.90	67.6	876	-5.2%
1989	20.88	-30.4%	96.20	33.40	64.8	889	-3.7%
1990	20.65	-31.2%	95.60	30.00	62.8	934	1.2%
1991	26.67	-11.2%	95.80	33.60	64.7	1,004	8.8%
1992	27.90	-7.1%	96.30	33.90	65.1	1,088	17.8%
1993	39.73	32.4%	93.50	35.70	64.6	1,029	11.5%
1994	24.55	-18.2%	96.10	34.20	65.2	1,069	15.8%
1995	44.74	49.0%	93.90	40.10	67.0	875	-5.2%
1996	39.95	33.1%	98.50	39.30	68.9	887	-3.9%
1997	28.70	-4.4%	97.60	37.10	67.4	919	-0.5%
1998	50.45	68.1%	95.60	35.50	65.6	853	-7.6%
1999	19.35	-35.5%	91.60	37.30	64.5	843	-8.7%
2000	30.79	2.6%	93.60	38.00	65.8	1,049	13.6%
2001	30.59	1.9%	93.80	35.80	64.8	1,011	9.5%
2002	26.63	-11.3%	95.30	37.60	66.5	919	-0.4%
2003	30.76	2.5%	97.70	39.60	68.7	827	-10.4%
2004	27.91	-7.0%	94.80	39.10	67.0	905	-1.9%
2005	35.87	19.5%	98.50	39.60	69.1	860	-6.9%
2006	33.31	11.0%	99.90	38.30	69.1	1,045	13.2%
2007	19.22	-36.0%	95.00	33.10	64.1	905	-1.9%
2008	20.05	-33.2%	95.90	36.00	66.0	1,050	13.7%
2009	25.45	-15.2%	96.50	36.10	66.3	822	-11.0%
2010	37.51	25.0%	94.80	41.70	68.3	774	-16.1%
2011	26.51	-11.7%	93.90	35.30	64.6	752	-18.6%
2012	35.31	17.6%	96.90	37.00	67.0	832	-9.9%
2013	9.91	-67.0%	96.80	33.60	65.2	850	-8.0%
2014							
2015							
2016							
2017							
2018							
2019							
2020							

Precipitation (1895 - present)						Monthly Average Eto
	Mean	High	Year	Low	Year	
	in.	in.	-	in.	-	
Jan	5.69	17.66	1909	0.04	2007	1.24
Feb	4.77	14.45	1998	0.07	1953	1.96
Mar	3.85	14.24	1991	0.04	1956	3.41
Apr	2.02	7.13	1926	0.00	1909	5.10
May	1.05	5.08	1915	0.00	1904	6.82
Jun	0.36	2.44	2011	0.00	1902	7.80
Jul	0.04	1.93	1974	0.00	1959	8.06
Aug	0.09	1.41	1965	0.00	1958	7.13
Sep	0.48	4.05	1895	0.00	1902	5.40
Oct	1.55	11.71	1962	0.00	1906	3.72
Nov	3.28	10.35	1983	0.00	1929	1.80
Dec	4.79	15.78	1955	0.00	1989	0.93
Annual	27.97	59.50	1983	9.05	1976	53.30

Temperature (1895 - present)			
	Tmax	Tmin	Mean
	°F	°F	°F
Jan	61.2	27.4	44.3
Feb	67.9	32.7	50.3
Mar	74.6	36.9	55.8
Apr	80.5	40.9	60.7
May	88.8	46.5	67.7
Jun	99.0	52.3	75.7
Jul	104.7	57.0	80.9
Aug	101.2	54.8	78.0
Sep	97.2	50.2	73.7
Oct	88.2	44.3	66.3
Nov	73.9	34.5	54.2
Dec	64.8	30.0	47.4
Annual	104.7	27.4	66.1

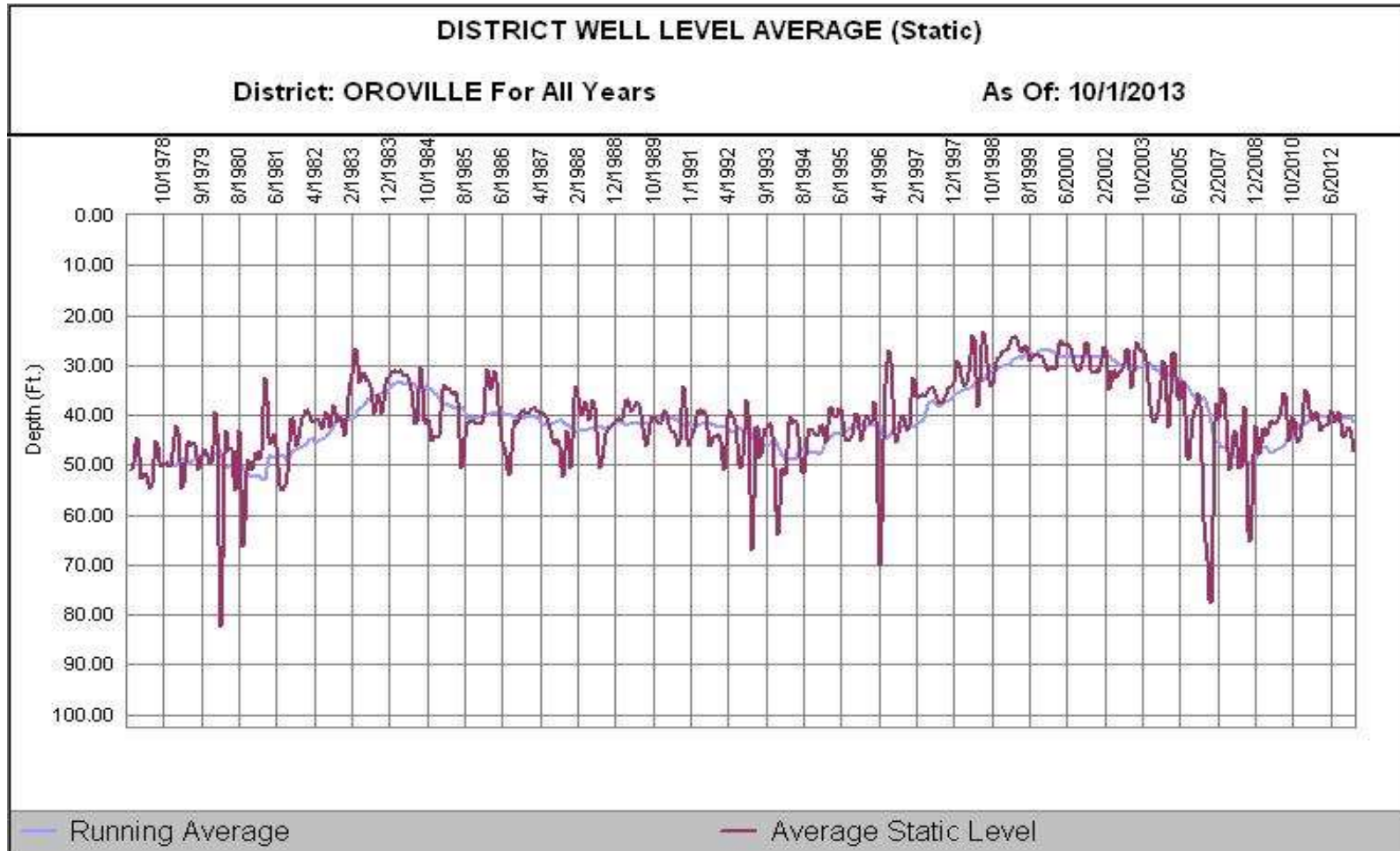
- 1) Eto values based on California Irrigation Management Information System (CIMIS), <http://www.cimis.water.ca.gov/cimis/welcome.jsp>, EvapoTranspiration (Eto) Zones Map, Zone 12
- 2) PPT, Tmax, Tmin obtained from PRISM where, PPT is total monthly rainfall, Tmax is average of maximum temperatures for given month, and Tmin is average of minimum temperatures for given month
- 3) Percent variation based on average of 1980 to present values

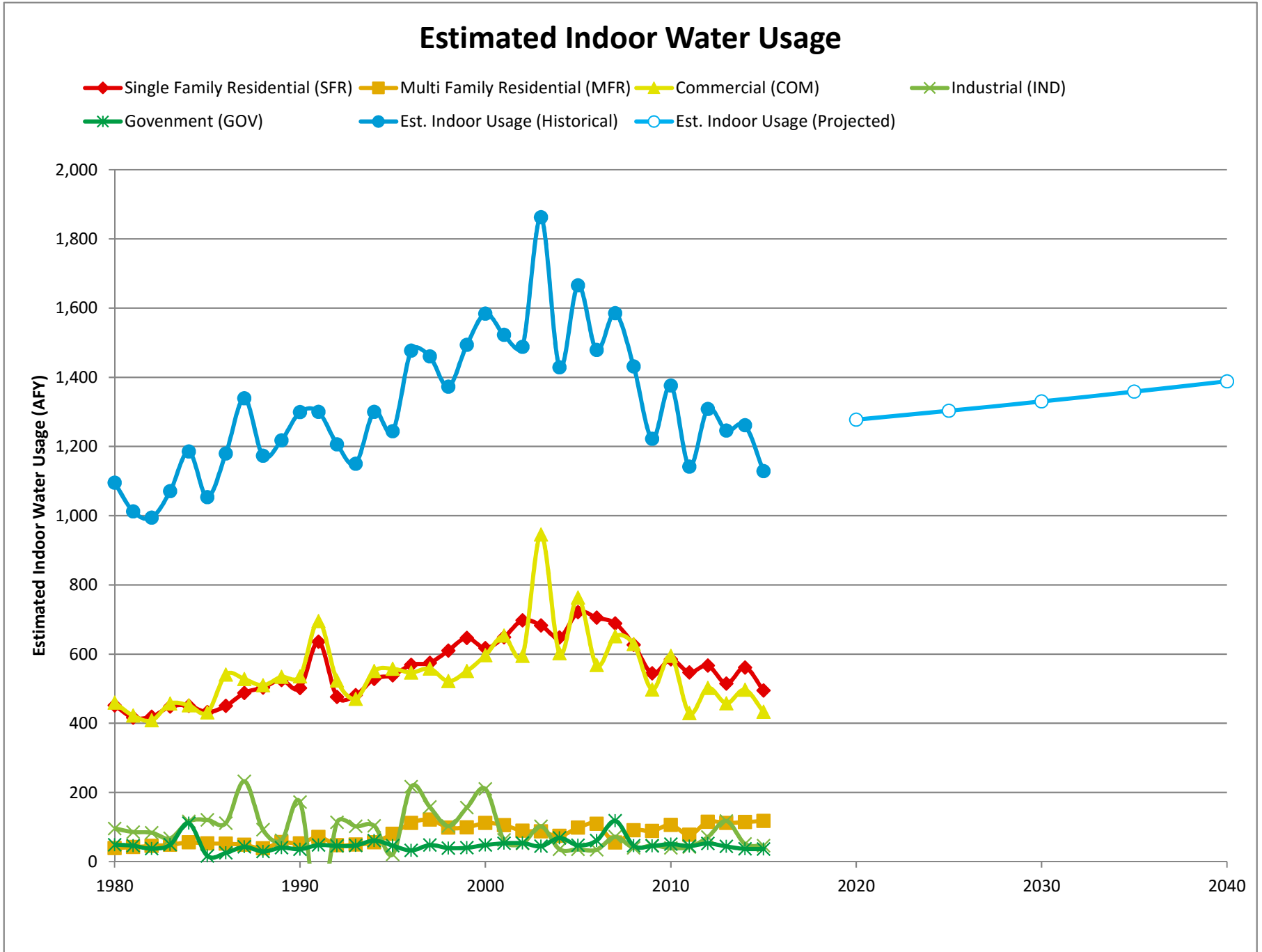
## Average Monthly Temperature, Rainfall, and Monthly Eto



# California Water Service Company - Oroville Districts Water Supply and Demand Analysis and Projections

## Groundwater Production Facilities





**California Water Service Company - Oroville Districts**  
**Water Supply and Demand Analysis and Projections**

**Estimated Indoor/Outdoor Water Usage**

Year	Single Family Residential (SFR)								Multi Family Residential (MFR)				Commercial (COM)			
	SFR Jan Usage	Metered SFR Indoor Use (Annualized 90% of January Total)			Indoor Flat Rate Usage (AFY)	Total SFR Indoor Usage			MFR Jan Usage	MFR Indoor Use (Annualized 90% of January Total)			COM Jan Usage	COM Indoor Use (Annualized 90% of January Total)		
		JAN (CCF)	AFY	AF/Serv		AFY	GPD/Serv	%		(CCF)	AFY	GPD/Serv		%	(CCF)	AFY
1980	9,877	245	0.179	207	451	160	20%	1,570	39	2,896	73%	18,543	460	622	62%	
1981	9,340	232	0.165	185	416	147	17%	1,709	42	3,131	64%	17,020	422	563	63%	
1982	10,024	249	0.166	170	419	148	22%	1,830	45	3,136	61%	16,473	408	547	63%	
1983	11,121	276	0.178	173	449	159	34%	1,970	49	3,354	55%	18,423	457	612	70%	
1984	11,172	277	0.180	174	451	161	33%	2,251	56	3,833	59%	18,218	452	597	66%	
1985	10,890	270	0.173	162	432	154	30%	2,123	53	3,615	59%	17,392	431	568	56%	
1986	11,443	284	0.178	166	450	159	35%	2,101	52	3,577	57%	21,798	540	711	68%	
1987	12,483	309	0.191	178	488	171	35%	1,958	49	3,334	54%	21,286	528	678	65%	
1988	12,637	313	0.197	190	503	176	36%	1,562	39	2,660	50%	20,547	509	652	65%	
1989	13,144	326	0.206	199	525	184	36%	2,274	56	3,872	64%	21,536	534	678	66%	
1990	12,601	312	0.197	190	502	176	34%	2,133	53	3,632	58%	21,606	536	671	63%	
1991	16,266	403	0.248	233	636	221	34%	2,877	71	4,898	81%	28,043	695	873	84%	
1992	13,001	322	0.185	154	476	165	21%	1,924	48	3,276	61%	21,097	523	651	64%	
1993	14,047	348	0.187	133	481	167	24%	1,992	49	3,392	59%	18,976	470	578	59%	
1994	15,907	394	0.205	134	529	183	26%	2,251	56	3,646	60%	22,229	551	669	60%	
1995	16,718	414	0.209	124	539	187	39%	3,244	80	5,129	62%	22,477	557	668	62%	
1996	18,047	447	0.223	122	569	199	46%	4,519	112	7,145	76%	22,046	547	669	59%	
1997	18,590	461	0.223	114	575	199	42%	4,903	122	7,752	75%	22,496	558	728	62%	
1998	20,043	497	0.237	113	610	212	49%	3,976	99	6,286	67%	21,045	522	692	61%	
1999	21,675	537	0.250	110	647	223	60%	4,001	99	6,215	62%	22,216	551	727	61%	
2000	20,967	520	0.238	97	617	213	34%	4,506	112	7,167	66%	24,049	596	771	63%	
2001	22,228	551	0.250	97	649	224	38%	4,255	105	6,808	83%	26,331	653	853	69%	
2002	24,019	596	0.268	102	698	239	54%	3,596	89	5,685	70%	23,989	595	769	57%	
2003	23,608	585	0.262	98	683	234	68%	3,516	87	5,559	69%	38,117	945	1,222	85%	
2004	22,610	561	0.246	87	648	220	47%	2,997	74	4,767	55%	24,291	602	780	59%	
2005	25,406	630	0.274	91	721	244	57%	3,957	98	6,256	67%	30,791	763	982	77%	
2006	24,995	620	0.267	85	705	239	37%	4,420	110	6,988	78%	22,910	568	733	57%	
2007	24,551	609	0.260	80	689	232	50%	2,229	55	3,524	45%	26,264	651	828	65%	
2008	22,712	563	0.240	64	627	214	33%	3,646	90	5,764	70%	25,347	628	783	64%	
2009	20,059	497	0.211	47	544	188	43%	3,573	89	5,649	65%	20,054	497	618	59%	
2010	21,782	540	0.225	45	585	200	54%	4,284	106	6,429	76%	23,982	595	737	74%	
2011	20,860	517	0.209	30	547	187	51%	3,136	78	1,572	53%	17,309	429	553	58%	
2012	22,110	548	0.217	19	567	194	45%	4,640	115	2,114	77%	20,256	502	652	62%	
2013	20,756	515	0.198	0	515	177	55%	4,509	112	1,721	66%	18,461	458	602	56%	
2014	22,639	561	0.212	0	561	190	67%	4,617	114	1,531	73%	20,036	497	671	68%	
2015	19,954	495		0	495			4,754	118			17,466	433			
2016					553	187			138	1,734			463	619		
2017					554	187			140	1,734			465	619		
2018					554	187			143	1,734			467	619		
2019					555	187			145	1,734			469	619		
2020					556	187			148	1,734			470	619		
2025					559	187			161	1,734			480	619		
2030					563	187			174	1,734			490	619		
2035					566	187			190	1,734			499	619		
2040					570	187			206	1,734			510	619		

Note: GPD/Service is estimated as the average of the last 5 years for given customer class.

**California Water Service Company - Oroville Districts**  
**Water Supply and Demand Analysis and Projections**

**Estimated Indoor/Outdoor Water Usage**

Year	Industrial (IND)				Government (GOV)			
	IND Jan Usage	IND Indoor Use (Annualized 90% of January Total)			GOV Jan Usage	GOV Indoor Use (Annualized 90% of January Total)		
	(CCF)	AFY	GPD/Serv	%	(CCF)	AFY	GPD/Serv	%
1980	3,870	96	9,097	15%	1,982	49	558	22%
1981	3,460	86	8,355	19%	1,860	46	502	20%
1982	3,375	84	8,457	22%	1,522	38	422	19%
1983	2,724	68	6,891	22%	1,983	49	543	25%
1984	4,691	116	10,559	25%	4,484	111	1,274	47%
1985	4,869	121	10,777	27%	682	17	207	8%
1986	4,496	111	9,257	15%	1,023	25	300	12%
1987	9,377	232	18,868	43%	1,730	43	493	19%
1988	3,724	92	7,273	17%	1,182	29	322	13%
1989	2,489	62	3,983	11%	1,638	41	434	20%
1990	6,952	172	9,469	28%	1,454	36	374	15%
1991	-6,086	-151	-8,332	-31%	1,936	48	486	21%
1992	4,590	114	5,947	24%	1,834	45	464	19%
1993	4,113	102	5,355	20%	1,892	47	459	20%
1994	4,182	104	5,392	23%	2,460	61	572	23%
1995	849	21	1,084	4%	1,871	46	443	20%
1996	8,747	217	11,389	38%	1,308	32	279	13%
1997	6,381	158	9,161	33%	1,935	48	359	16%
1998	4,138	103	6,106	21%	1,591	39	312	17%
1999	6,297	156	9,292	29%	1,628	40	314	15%
2000	8,474	210	12,504	40%	1,949	48	372	18%
2001	2,537	63	3,786	13%	2,141	53	400	19%
2002	2,121	53	3,130	10%	2,165	54	408	18%
2003	4,128	102	6,091	24%	1,803	45	345	17%
2004	1,442	36	2,048	10%	2,768	69	522	22%
2005	1,442	36	2,005	9%	1,910	47	351	18%
2006	1,394	35	1,928	8%	2,470	61	445	20%
2007	2,898	72	4,009	15%	4,764	118	879	38%
2008	1,602	40	2,216	9%	1,860	46	334	14%
2009	1,880	47	2,601	12%	1,835	45	332	16%
2010	1,596	40	2,174	9%	2,057	51	384	17%
2011	1,721	43	2,230	8%	1,819	45	332	20%
2012	2,879	71	3,540	14%	2,131	53	381	20%
2013	4,755	118	6,101	21%	1,776	44	330	16%
2014	2,081	52	2,709	10%	1,491	37	384	18%
2015	1,870	46			1,486	37		
2016		0	3,645			34	357	
2017		0	3,645			34	357	
2018		0	3,645			34	357	
2019		0	3,645			34	357	
2020		69	3,645			34	357	
2025		69	3,645			34	357	
2030		69	3,645			34	357	
2035		69	3,645			34	357	
2040		69	3,645			34	357	

Estimated Indoor/Outdoor Usage			
Est. Indoor Usage	Est. Outdoor Usage	Est. Indoor Usage	Est. Outdoor Usage
AFY	AFY	%	%
1,095	3,208	25%	75%
1,013	3,126	24%	76%
994	2,533	28%	72%
1,071	1,737	38%	62%
1,186	1,894	38%	62%
1,054	2,159	33%	67%
1,180	2,199	35%	65%
1,339	1,979	40%	60%
1,173	2,117	36%	64%
1,218	2,134	36%	64%
1,299	2,238	37%	63%
1,300	2,519	34%	66%
1,206	2,946	29%	71%
1,150	2,790	29%	71%
1,300	2,813	32%	68%
1,244	2,134	37%	63%
1,477	1,922	43%	57%
1,460	2,053	42%	58%
1,373	1,867	42%	58%
1,493	1,729	46%	54%
1,584	2,438	39%	61%
1,523	2,348	39%	61%
1,488	2,057	42%	58%
1,862	1,330	58%	42%
1,429	2,086	41%	59%
1,666	1,689	50%	50%
1,479	2,605	36%	64%
1,585	1,974	45%	55%
1,432	2,668	35%	65%
1,222	1,959	38%	62%
1,376	1,644	46%	54%
1,142	1,803	39%	61%
1,308	1,944	40%	60%
1,246	2,059	38%	62%
1,261	1,407	47%	53%
1,129	1,194	49%	51%
1,189	2,265	34%	66%
1,193	2,272	34%	66%
1,198	2,280	34%	66%
1,203	2,288	34%	66%
1,278	2,226	36%	64%
1,303	2,267	37%	63%
1,330	2,310	37%	63%
1,358	2,356	37%	63%
1,388	2,406	37%	63%

**California Water Service Company - Oroville Districts**

**Water Supply and Demand Analysis and Projections**

**Comparison of Projected Demand and Conservation Savings Between SBx7-7 Compliance Targets and Actual Proposed Programs**

Year	SBx7-7 Compliance Target (gpcd)	Anticipated GPCD with Proposed Programs*	Estimated Population	Unadjusted Baseline Demand (AFY)	SBx7-7 Compliance Target Demand (AFY)	Anticipated Demand with Proposed Programs (AFY)	Compliance Target Savings Requirement (AFY)	Savings Due to Proposed Programs (AFY)
2005-2009 Average	320	320	10,188	3,656	3,656	3,656	0	0
2010	320	320	10,337	3,709	3,709	3,709	0	0
2011	316	328	10,428	3,742	3,697	3,831	45	-89
2012	313	324	10,434	3,744	3,654	3,787	90	-43
2013	309	320	10,507	3,770	3,634	3,766	137	4
2014	305	315	10,581	3,797	3,613	3,733	183	63
2015	301	309	10,655	3,823	3,592	3,688	231	135
2016	294	301	10,729	3,850	3,538	3,615	312	235
2017	288	293	10,803	3,877	3,483	3,541	394	336
2018	281	284	10,878	3,903	3,426	3,465	477	438
2019	275	276	10,953	3,930	3,369	3,389	561	542
2020	268	268	11,028	3,957	3,311	3,311	647	647
2021	268	268	11,103	3,984	3,333	3,333	651	651
2022	268	268	11,179	4,011	3,356	3,356	656	656
2023	268	268	11,255	4,039	3,379	3,379	660	660
2024	268	268	11,331	4,066	3,402	3,402	664	664
2025	268	268	11,407	4,093	3,424	3,424	669	669
2026	268	268	11,484	4,121	3,448	3,448	673	673
2027	268	268	11,561	4,149	3,471	3,471	678	678
2028	268	268	11,638	4,176	3,494	3,494	682	682
2029	268	268	11,716	4,204	3,517	3,517	687	687
2030	268	268	11,793	4,232	3,540	3,540	692	692
2031	268	268	11,871	4,260	3,564	3,564	696	696
2032	268	268	11,950	4,288	3,587	3,587	701	701
2033	268	268	12,028	4,316	3,611	3,611	705	705
2034	268	268	12,107	4,344	3,634	3,634	710	710
2035	268	268	12,186	4,373	3,658	3,658	715	715
2036	268	268	12,265	4,401	3,682	3,682	719	719
2037	268	268	12,345	4,430	3,706	3,706	724	724
2038	268	268	12,424	4,458	3,730	3,730	729	729
2039	268	268	12,505	4,487	3,754	3,754	733	733
2040	268	268	12,585	4,516	3,778	3,778	738	738

\*Note: The district is not projected to achieve its district-specific 2015 SBx7-7 compliance target through the proposed 2011-2015 conservation program portfolio. The district will achieve compliance with its 2015 SBx7-7 compliance target through a regional alliance. For the purpose of this analysis it is assumed that there will be a linear reduction in GPCD from 2015-2020 to achieve the district-specific 2020 SBx7-7 compliance target. The district may ultimately elect to achieve 2020 SBx7-7 compliance through a regional alliance. GPCD will remain flat from 2020 through 2040.

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