

Water Resources Planning Department

**Projection Analysis Work Sheets
for
Marysville District**

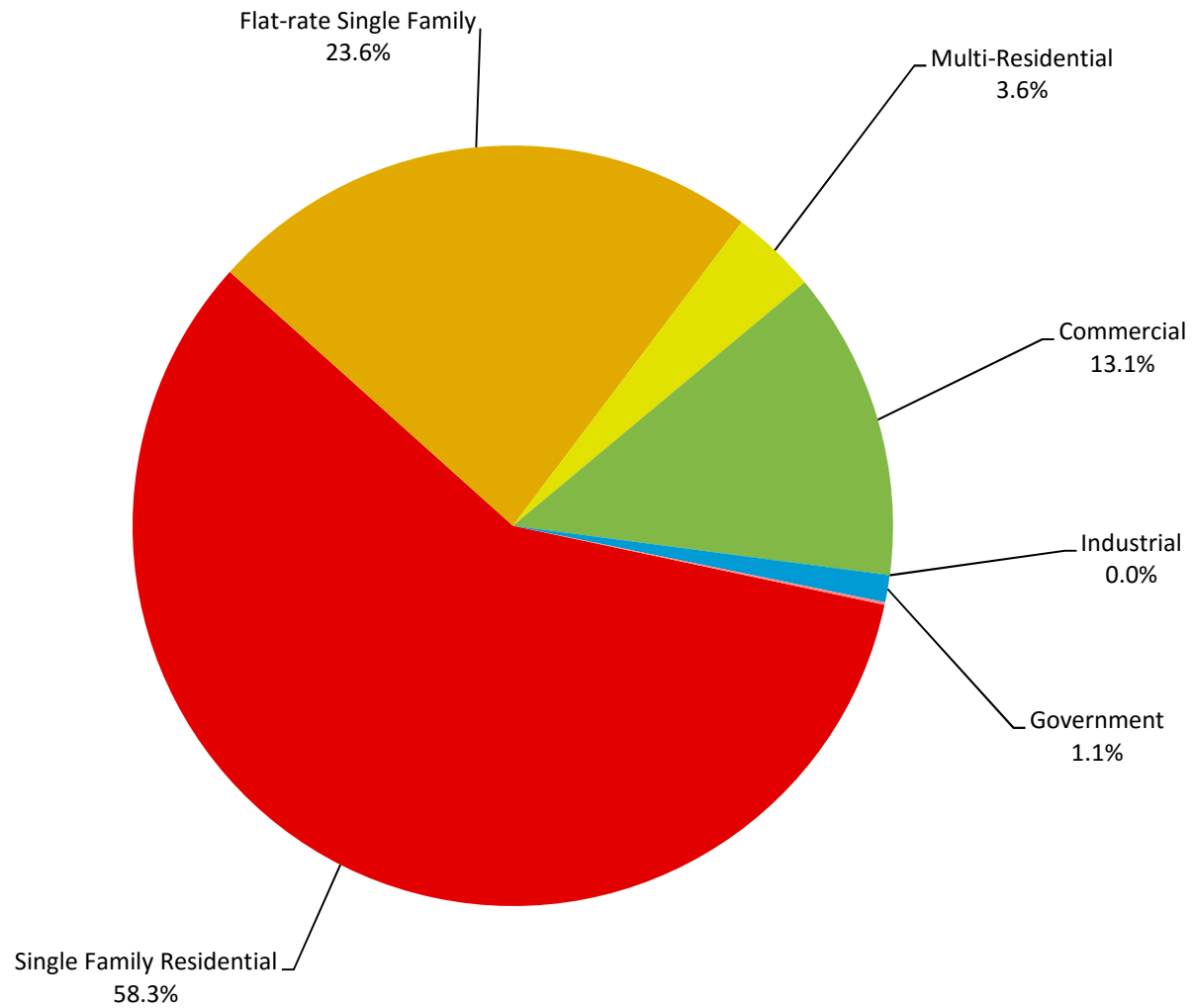
2015



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Distribution of Services (2015)



Historical Services



California Water Service Company - Marysville District **Water Supply and Demand Analysis and Projections**

Worksheet 1

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	237	2,636	2,873	47	623	3	57	1	3,604	
1981	234	2,686	2,920	48	627	3	56	1	3,655	51
1982	227	2,703	2,930	49	639	3	57	1	3,679	24
1983	239	2,696	2,934	50	633	3	56	1	3,677	-2
1984	252	2,701	2,953	50	633	4	58	1	3,698	21
1985	251	2,720	2,971	51	624	4	59	1	3,710	12
1986	258	2,733	2,992	58	630	4	58	3	3,744	35
1987	272	2,722	2,993	59	638	4	57	0	3,750	6
1988	286	2,708	2,994	62	638	4	56	0	3,753	3
1989	290	2,705	2,994	65	636	4	57	0	3,756	3
1990	300	2,699	2,999	65	637	4	58	0	3,763	7
1991	308	2,693	3,001	65	640	4	57	1	3,769	6
1992	314	2,684	2,997	65	635	4	62	2	3,765	-3
1993	323	2,678	3,001	65	632	4	63	2	3,767	2
1994	324	2,664	2,987	65	633	4	64	1	3,754	-13
1995	330	2,652	2,982	65	625	3	64	2	3,741	-13
1996	340	2,643	2,983	65	620	3	66	2	3,740	-1
1997	341	2,623	2,964	65	613	3	67	2	3,714	-26
1998	342	2,618	2,960	66	607	3	67	2	3,705	-9
1999	350	2,612	2,962	67	607	3	67	2	3,708	4
2000	352	2,609	2,961	67	613	4	67	3	3,715	6
2001	357	2,611	2,968	67	607	4	72	3	3,721	7
2002	362	2,619	2,981	67	609	4	72	3	3,735	14
2003	398	2,612	3,010	125	536	4	73	2	3,750	15
2004	423	2,591	3,013	127	526	4	71	2	3,744	25
2005	439	2,569	3,009	126	528	3	70	2	3,738	-12
2006	455	2,548	3,003	126	528	3	71	3	3,734	-10
2007	478	2,519	2,997	125	531	4	69	5	3,729	-9
2008	525	2,441	2,965	126	523	4	71	5	3,694	-40
2009	662	2,273	2,935	124	506	4	64	7	3,640	-89
2010	954	2,013	2,967	128	488	2	53	6	3,644	-51
2011	1,406	1,576	2,982	129	489	1	45	4	3,650	10
2012	1,731	1,250	2,980	132	485	1	48	6	3,651	8
2013	1,964	1,020	2,983	133	485	2	47	5	3,655	5
2014	2,034	957	2,991	133	481	3	43	4	3,655	3
2015	2,145	870	3,014	134	483	1	42	4	3,678	23
5 Yr Avg.	1,856	1,134	2,990	132	484	1	45	5	3,658	6
10 Yr Avg.	1,235	1,747	2,982	129	500	2	55	5	3,673	6
15 Yr Avg.	955	2,031	2,987	120	520	3	61	4	3,695	10
20 Yr Avg.	803	2,179	2,982	106	543	3	62	4	3,700	10

Note: Reclassification occurred between categories from 2007 to 2009

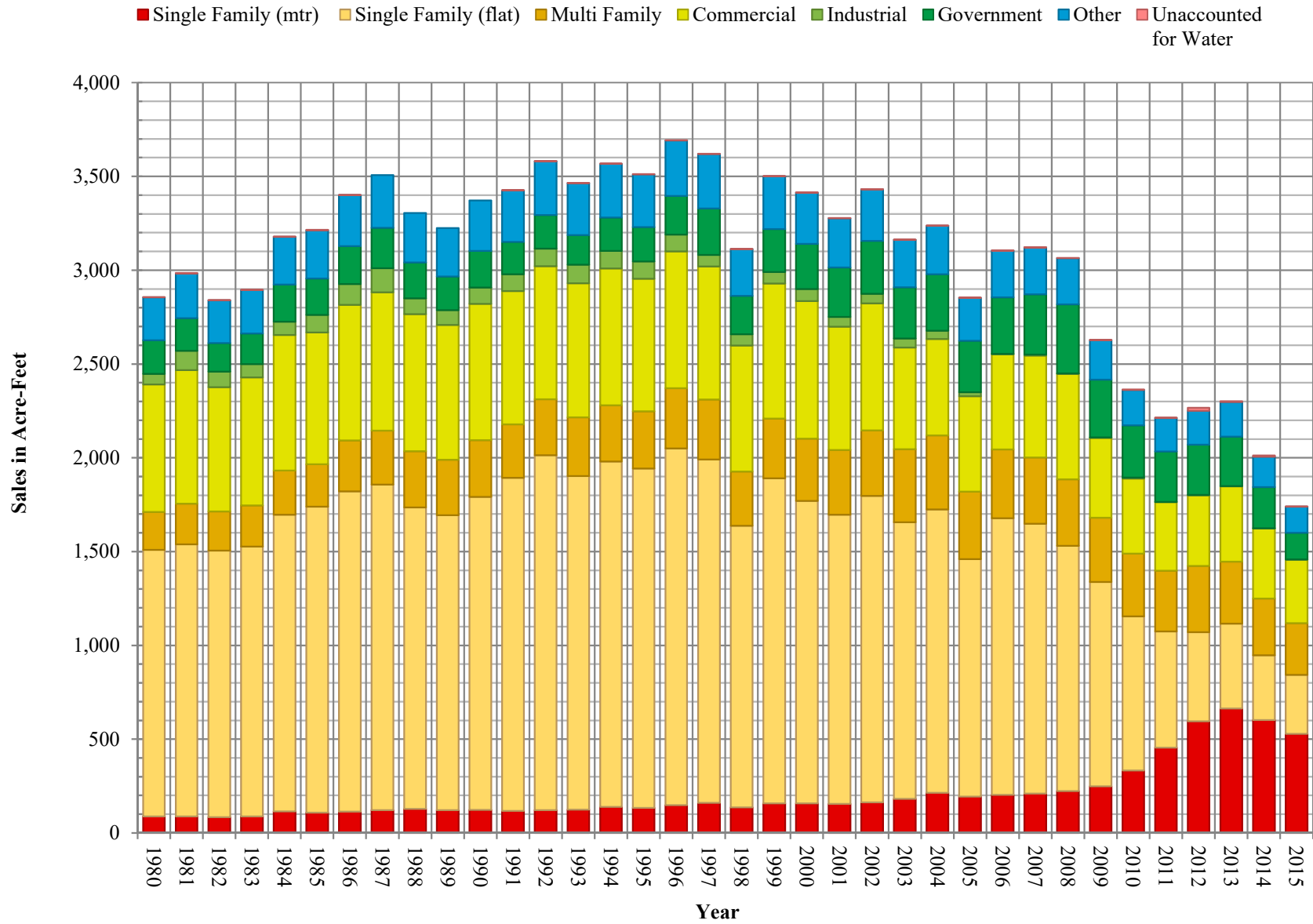
California Water Service Company - Marysville District
Water Supply and Demand Analysis and Projections
Service Growth Percentage

Worksheet 2

Year	Single Family (SFR)	Single Family (FLT)	Single Family (Total)	Multi Family (MFR)	Commercial (COM)	Industrial (IND)	Government (GOV)	Other (OTH)	Total
1981	-1.48%	1.91%	1.63%	1.41%	0.70%	0.00%	-1.33%	30.77%	1.42%
1982	-2.68%	0.62%	0.35%	2.95%	1.87%	0.00%	1.64%	-29.41%	0.66%
1983	4.95%	-0.27%	0.13%	1.18%	-0.81%	0.00%	-1.91%	0.00%	-0.05%
1984	5.52%	0.21%	0.64%	-0.17%	-0.03%	16.67%	3.29%	0.00%	0.57%
1985	-0.50%	0.70%	0.60%	2.34%	-1.42%	14.29%	1.88%	0.00%	0.31%
1986	3.13%	0.49%	0.71%	13.05%	0.91%	0.00%	-1.28%	200.00%	0.94%
1987	5.13%	-0.44%	0.04%	1.88%	1.26%	0.00%	-2.02%	-100.00%	0.16%
1988	5.34%	-0.50%	0.03%	5.10%	-0.03%	0.00%	-1.18%	0.00%	0.08%
1989	1.25%	-0.12%	0.01%	4.99%	-0.26%	0.00%	2.08%	0.00%	0.08%
1990	3.39%	-0.20%	0.14%	0.13%	0.22%	0.00%	1.46%	0.00%	0.18%
1991	2.75%	-0.22%	0.08%	0.00%	0.42%	2.08%	-1.58%	0.00%	0.15%
1992	1.92%	-0.36%	-0.12%	0.26%	-0.77%	-2.04%	8.76%	33.33%	-0.08%
1993	3.00%	-0.20%	0.14%	-0.26%	-0.58%	0.00%	2.15%	20.00%	0.05%
1994	0.26%	-0.55%	-0.46%	0.26%	0.17%	0.00%	0.66%	-45.83%	-0.35%
1995	1.85%	-0.43%	-0.19%	-0.13%	-1.21%	-25.00%	0.39%	76.92%	-0.35%
1996	3.16%	-0.34%	0.05%	-0.26%	-0.73%	0.00%	2.99%	17.39%	-0.03%
1997	0.15%	-0.74%	-0.64%	0.13%	-1.24%	0.00%	1.39%	-7.41%	-0.69%
1998	0.27%	-0.21%	-0.15%	1.28%	-0.91%	0.00%	0.12%	4.00%	-0.24%
1999	2.41%	-0.22%	0.08%	1.65%	-0.05%	0.00%	0.62%	0.00%	0.10%
2000	0.67%	-0.13%	-0.04%	0.00%	1.02%	25.00%	-0.12%	26.92%	0.17%
2001	1.37%	0.07%	0.23%	0.12%	-0.91%	6.67%	7.30%	9.09%	0.18%
2002	1.33%	0.33%	0.45%	0.00%	0.22%	0.00%	-0.92%	-11.11%	0.37%
2003	9.95%	-0.26%	0.98%	86.07%	-11.92%	0.00%	2.21%	-21.88%	0.41%
2004	6.20%	-0.84%	0.09%	1.94%	-1.83%	0.00%	-2.96%	0.00%	-0.18%
2005	3.98%	-0.82%	-0.15%	-0.92%	0.38%	-16.67%	-1.76%	8.00%	-0.14%
2006	3.53%	-0.81%	-0.17%	-0.26%	0.03%	-12.50%	1.79%	18.52%	-0.11%
2007	5.07%	-1.16%	-0.22%	-0.60%	0.39%	37.14%	-3.40%	68.75%	-0.12%
2008	9.73%	-3.09%	-1.05%	0.53%	-1.35%	0.00%	3.04%	18.52%	-0.94%
2009	26.20%	-6.87%	-1.02%	-1.13%	-3.36%	0.00%	-8.84%	23.44%	-1.47%
2010	44.11%	-11.45%	1.08%	2.82%	-3.51%	-50.00%	-18.11%	-3.80%	0.10%
2011	47.39%	-21.72%	0.50%	1.05%	0.22%	-50.00%	-14.22%	-31.58%	0.18%
2012	23.09%	-20.70%	-0.05%	2.26%	-0.92%	0.00%	5.34%	38.46%	0.03%
2013	13.46%	-18.39%	0.11%	0.88%	-0.02%	66.67%	-0.52%	-13.89%	0.10%
2014	3.58%	-6.12%	0.26%	-0.06%	-0.72%	60.00%	-9.84%	-22.58%	-0.02%
2015	5.45%	-9.17%	0.77%	0.75%	0.40%	-62.50%	-2.14%	-2.08%	0.64%
5 Yr. Avg.	18.59%	-15.22%	0.32%	0.98%	-0.21%	2.83%	-4.28%	-6.33%	0.19%
10 Yr. Avg.	18.16%	-9.95%	0.02%	0.62%	-0.88%	-1.12%	-4.69%	9.38%	-0.16%
15 Yr. Avg.	13.63%	-6.73%	0.12%	6.23%	-1.53%	-1.41%	-2.87%	5.19%	-0.06%
20 Yr. Avg.	10.56%	-5.13%	0.06%	4.81%	-1.24%	0.19%	-1.90%	5.94%	-0.08%

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Historical Sales

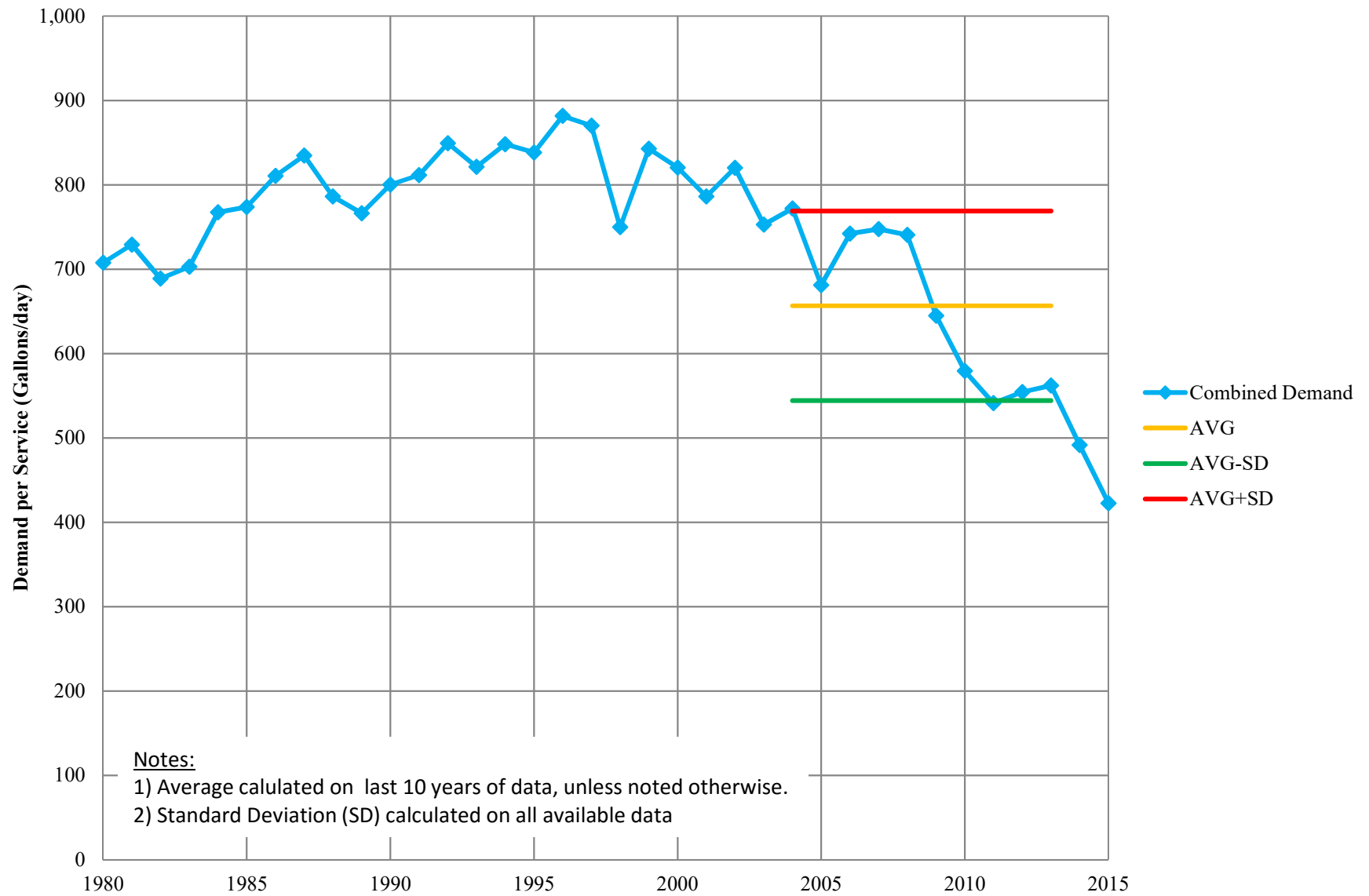


California Water Service Company - Marysville District
Water Supply and Demand Analysis and Projections
Sales (AF)

Worksheet 3

Year	Single Family			Multi Family	Commercial	Industrial	Government	Other	Unaccounted for Water	Total Sales	Total Demand	Total Demand
	(SFR)	(FLT)	(Total)	(MFR)	(COM)	(IND)	(GOV)	(OTH)	(UAFW)	(AF)	(AF)	(MGal)
1980	88	1,422	1,510	202	680	57	179	1	228	2,628	2,856	931
1981	89	1,451	1,539	216	712	102	174	3	239	2,747	2,986	973
1982	84	1,422	1,505	208	663	83	152	1	227	2,612	2,840	925
1983	88	1,439	1,527	218	683	71	164	0	232	2,663	2,895	943
1984	116	1,582	1,697	236	723	71	198	0	254	2,924	3,179	1,036
1985	108	1,632	1,739	226	702	94	194	2	257	2,958	3,215	1,048
1986	114	1,707	1,821	271	723	111	202	0	272	3,128	3,400	1,108
1987	121	1,735	1,857	288	737	128	216	0	281	3,227	3,507	1,143
1988	128	1,607	1,736	299	731	85	191	0	264	3,041	3,305	1,077
1989	122	1,572	1,694	296	718	79	179	0	258	2,967	3,224	1,051
1990	124	1,668	1,792	303	726	87	196	0	270	3,103	3,372	1,099
1991	117	1,776	1,893	285	710	90	172	0	274	3,151	3,425	1,116
1992	122	1,893	2,014	298	708	94	179	1	287	3,296	3,582	1,167
1993	125	1,778	1,902	313	715	98	159	1	277	3,188	3,466	1,129
1994	139	1,842	1,981	299	730	93	179	0	285	3,282	3,567	1,162
1995	134	1,808	1,942	305	707	92	184	1	281	3,232	3,513	1,145
1996	149	1,902	2,050	321	730	88	206	2	295	3,398	3,693	1,204
1997	160	1,830	1,990	320	709	61	248	1	290	3,330	3,620	1,180
1998	137	1,502	1,638	288	672	61	204	0	249	2,863	3,112	1,014
1999	158	1,732	1,890	319	720	61	230	1	280	3,221	3,501	1,141
2000	157	1,612	1,770	333	734	63	241	1	273	3,141	3,414	1,112
2001	155	1,541	1,697	346	657	52	263	0	262	3,015	3,277	1,068
2002	164	1,634	1,797	348	677	51	282	1	275	3,157	3,432	1,118
2003	182	1,475	1,656	390	541	49	273	0	253	2,910	3,163	1,031
2004	214	1,510	1,724	395	514	45	301	0	259	2,979	3,238	1,055
2005	194	1,265	1,460	360	509	21	275	0	228	2,625	2,853	930
2006	203	1,474	1,678	367	507	3	301	0	248	2,855	3,104	1,011
2007	210	1,438	1,648	354	543	5	320	2	250	2,873	3,123	1,017
2008	223	1,307	1,530	355	562	3	368	2	245	2,820	3,065	999
2009	249	1,089	1,338	342	425	2	308	3	210	2,419	2,630	857
2010	334	822	1,155	334	401	5	278	2	189	2,175	2,365	770
2011	455	618	1,074	324	366	1	269	2	177	2,037	2,214	721
2012	595	475	1,070	354	376	1	268	16	181	2,086	2,267	739
2013	664	452	1,115	330	401	2	263	4	184	2,117	2,301	750
2014	602	344	947	303	373	2	220	8	161	1,852	2,013	656
2015	529	314	843	276	339	1.1	142	2	139	1,602	1,741	567

Combined Demand per Service

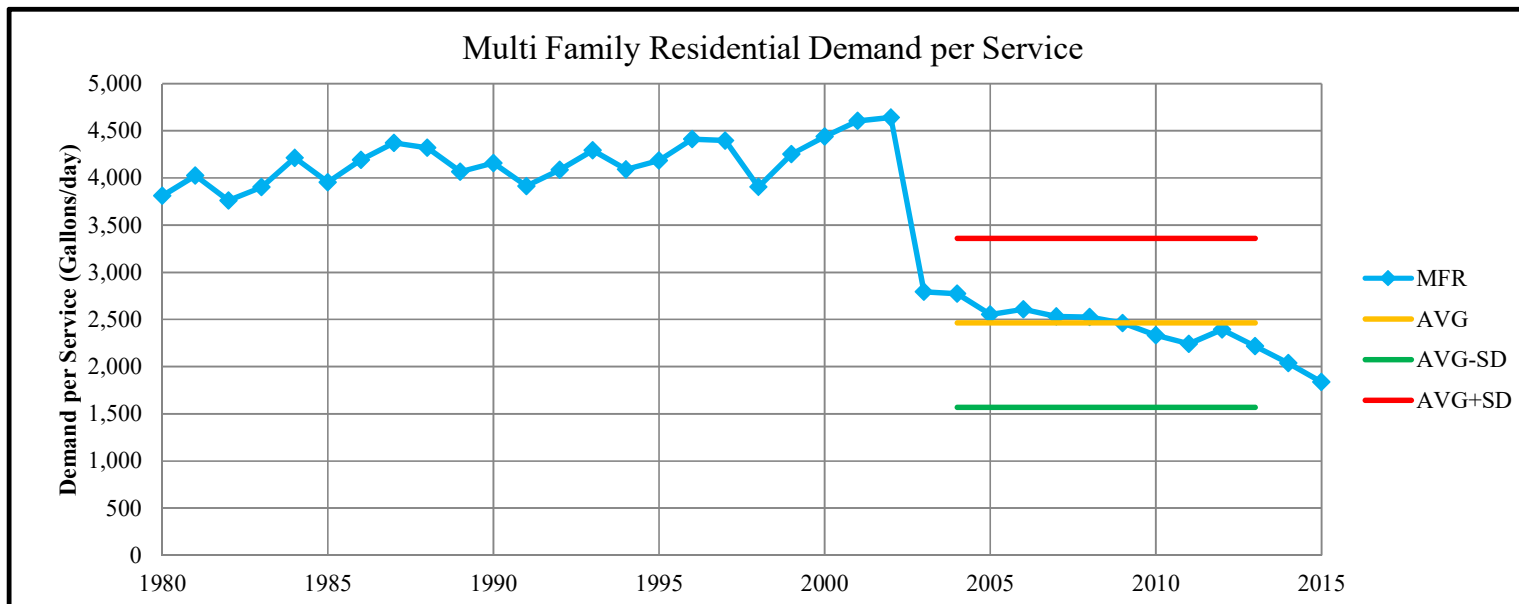
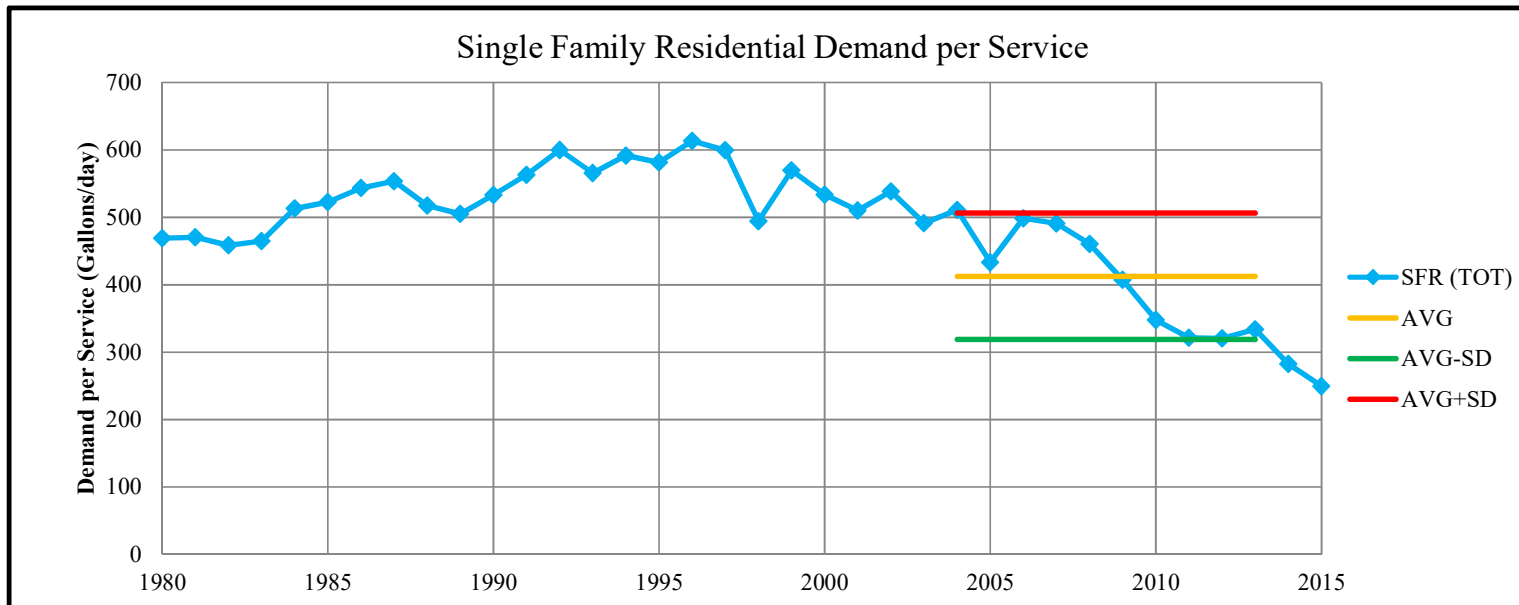


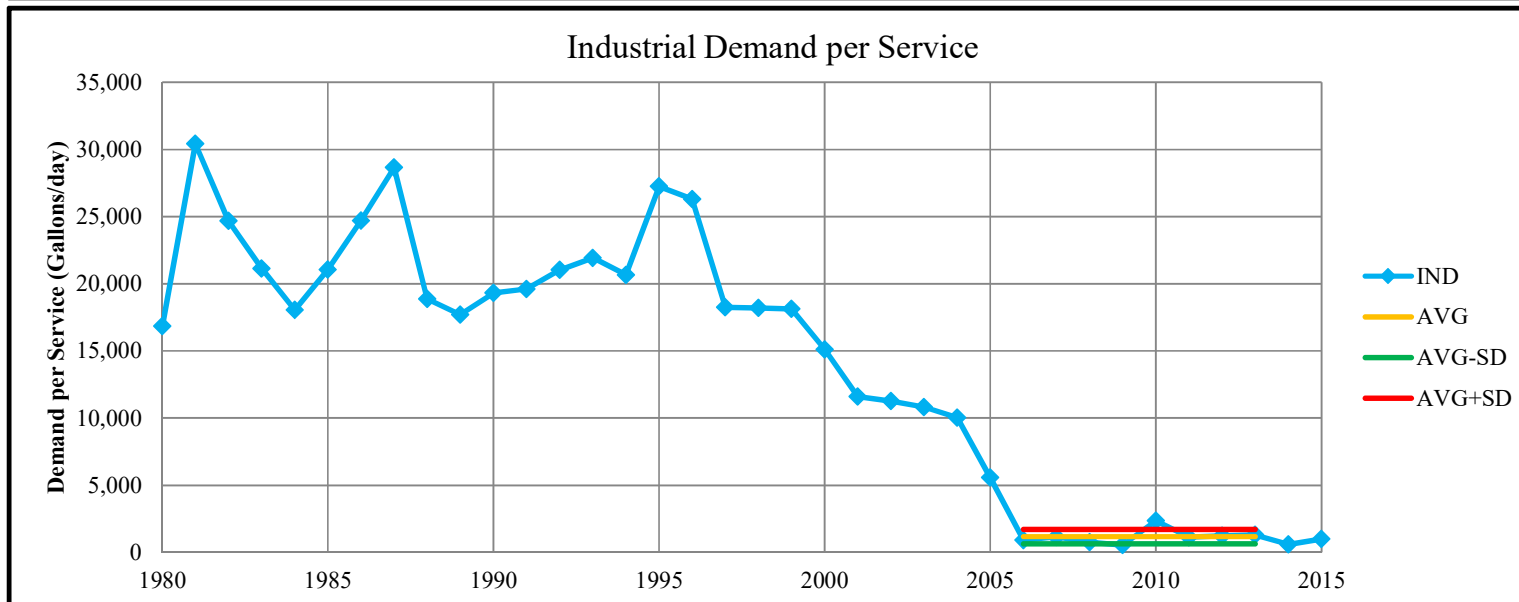
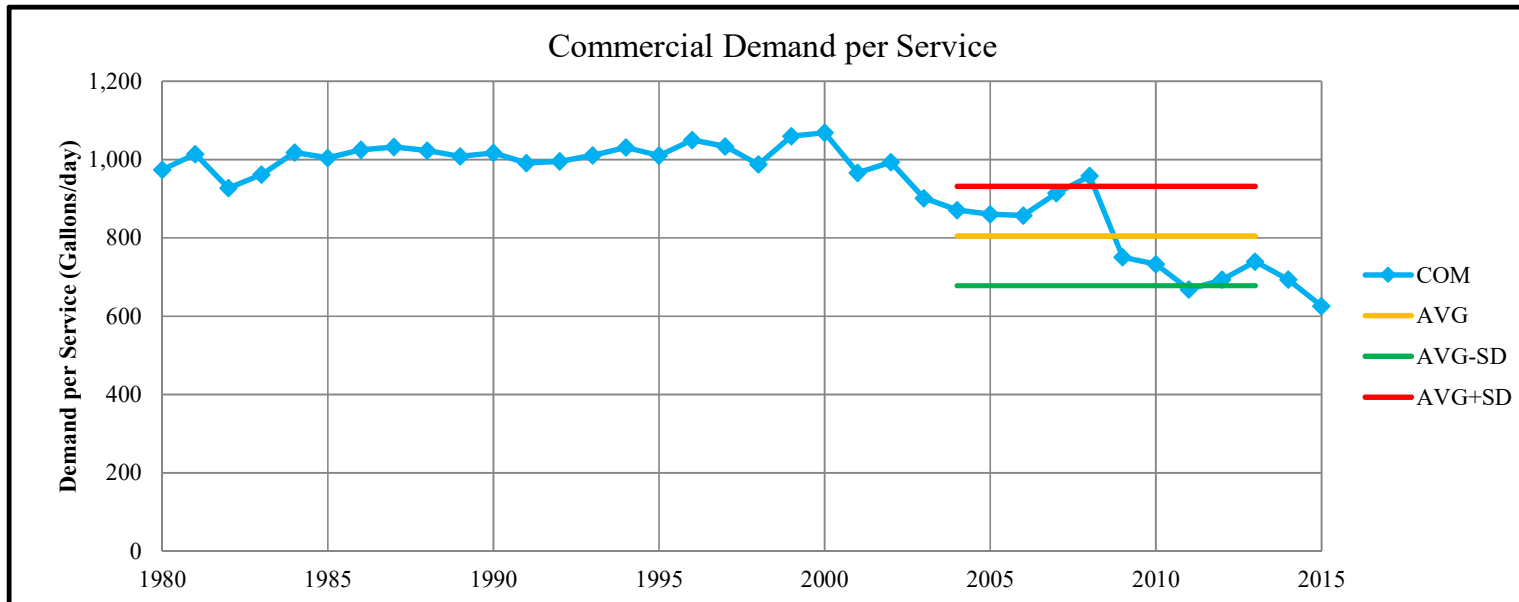
California Water Service Company - Marysville District
Water Supply and Demand Analysis and Projections
Demand per Service (Gallons per Day)

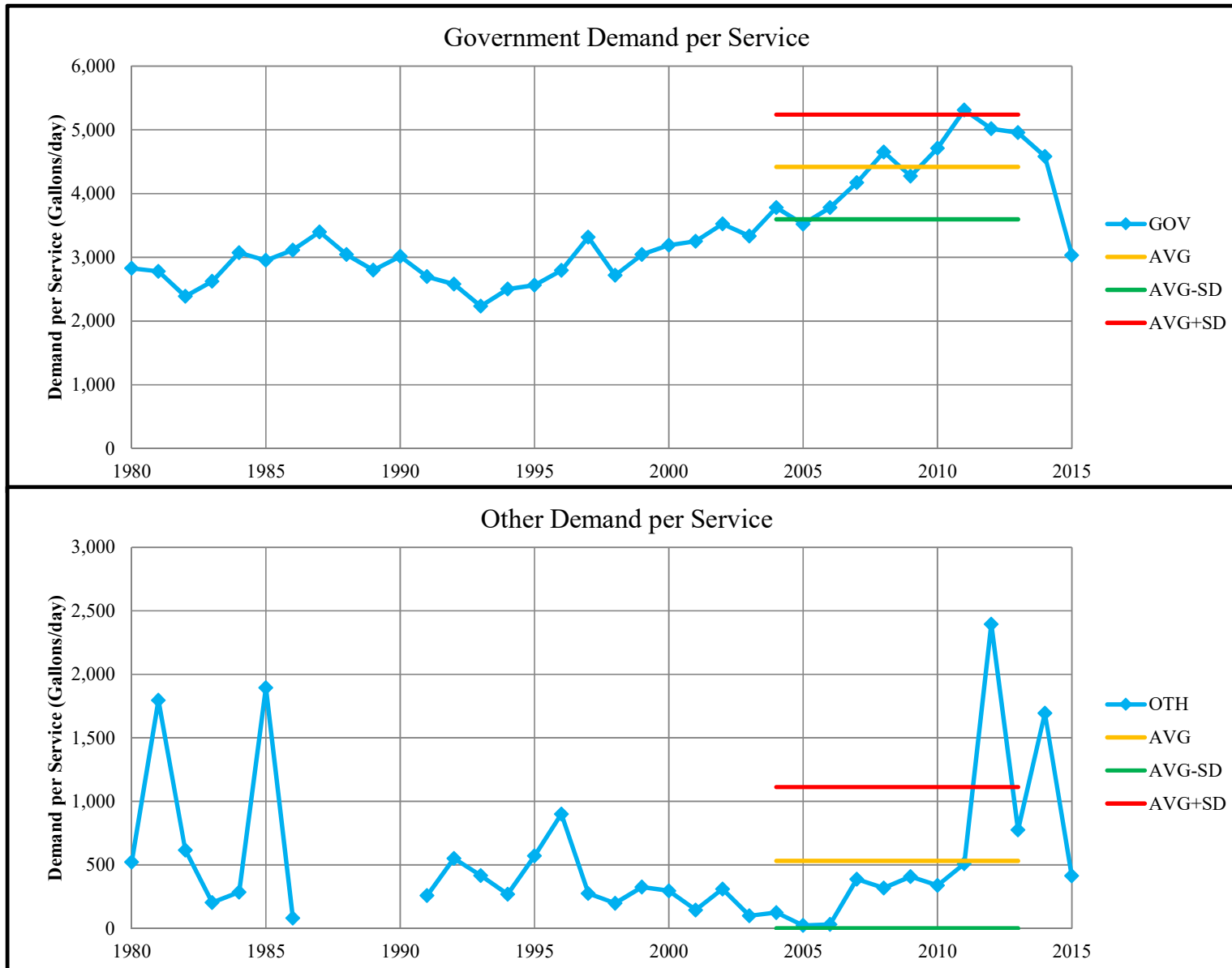
Worksheet 4

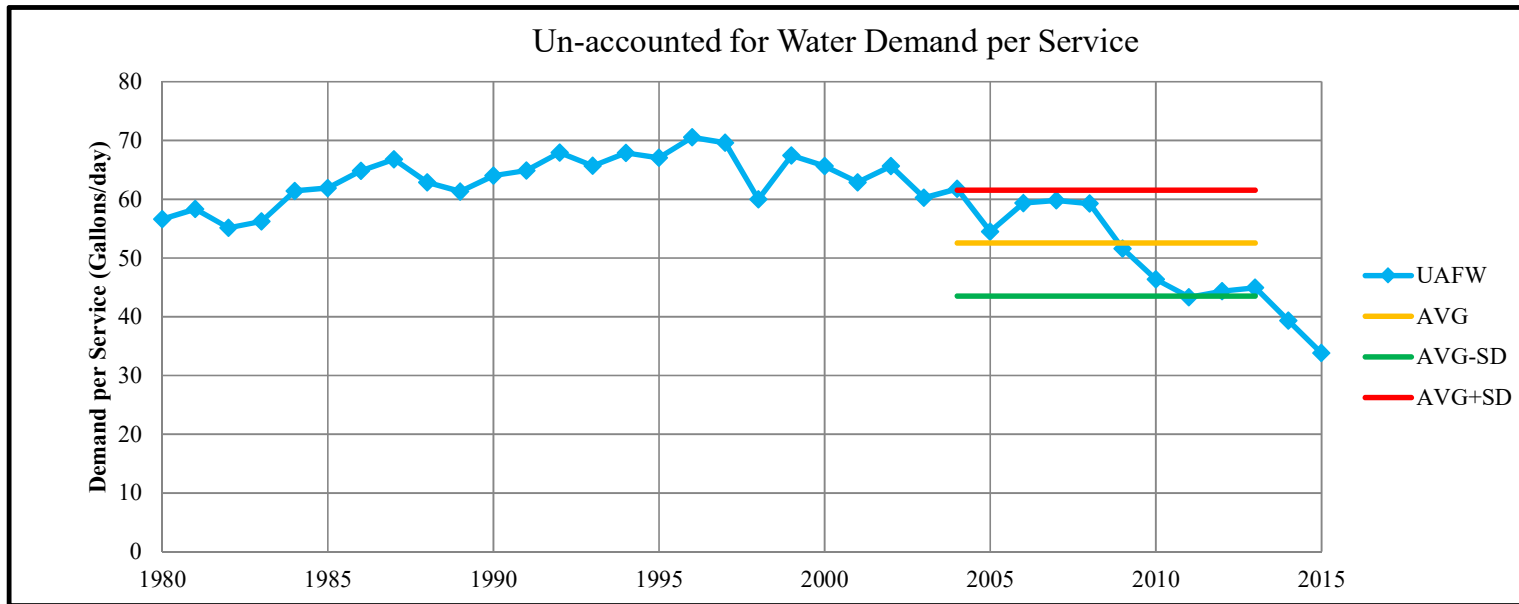
Year	SFR (MTR)	SFR (FLT)	SFR (TOT)	MFR	COM	IND	GOV	OTH	UAFW	Combined Demand/Serv
1980	332	481	469	3,810	975	16,847	2,828	522	57	708
1981	339	482	471	4,025	1,014	30,430	2,781	1,795	58	729
1982	329	470	459	3,763	927	24,667	2,388	617	55	689
1983	330	477	465	3,901	962	21,139	2,623	205	56	703
1984	410	523	513	4,214	1,019	18,048	3,075	285	61	767
1985	384	536	523	3,956	1,004	21,044	2,953	1,896	62	774
1986	393	558	543	4,193	1,025	24,696	3,113	81	65	811
1987	399	569	554	4,372	1,032	28,670	3,400		67	835
1988	401	530	518	4,321	1,023	18,865	3,043		63	786
1989	377	519	505	4,069	1,008	17,701	2,800		61	766
1990	369	552	533	4,159	1,017	19,314	3,013		64	800
1991	340	589	563	3,915	991	19,613	2,696	259	65	811
1992	346	630	600	4,085	996	21,037	2,580	551	68	849
1993	345	593	566	4,294	1,011	21,935	2,234	415	66	821
1994	383	617	592	4,092	1,031	20,673	2,502	269	68	848
1995	362	609	582	4,185	1,010	27,258	2,564	572	67	838
1996	390	642	614	4,412	1,050	26,298	2,793	901	71	882
1997	420	623	599	4,396	1,034	18,238	3,314	276	70	870
1998	357	512	494	3,905	988	18,205	2,717	200	60	750
1999	403	592	570	4,253	1,059	18,145	3,045	326	67	843
2000	398	552	534	4,439	1,068	15,105	3,191	296	66	820
2001	388	527	510	4,606	966	11,596	3,253	146	63	786
2002	404	557	538	4,643	993	11,282	3,523	311	66	820
2003	407	504	491	2,793	902	10,831	3,332	100	60	753
2004	453	520	511	2,773	871	10,026	3,782	126	62	772
2005	395	440	433	2,553	860	5,573	3,520	24	55	681
2006	399	517	499	2,607	857	912	3,780	31	59	742
2007	392	510	491	2,530	914	1,163	4,172	389	60	748
2008	380	478	461	2,524	958	765	4,652	318	59	741
2009	335	428	407	2,462	751	546	4,274	409	52	645
2010	312	364	348	2,334	733	2,346	4,711	339	46	579
2011	289	350	321	2,242	668	1,121	5,312	510	43	541
2012	307	340	321	2,394	693	1,242	5,019	2,395	44	554
2013	302	395	334	2,218	739	1,301	4,957	775	45	562
2014	264	321	283	2,035	693	588	4,585	1,695	39	492
2015	220	322	250	1,837	626	1,008	3,034	414	34	423
AVG	356	434	412	2,464	805	1,174	4,418	531	53	657
SD	48	89	94	896	127	538	822	581	9	112

Note: Average calculated based on ten-years 2004 to 2013 due to sharp downward trend.
Average and Standard Deviation for Industrial customer class limited to 2006 to 2013 due to significant change in sales level.









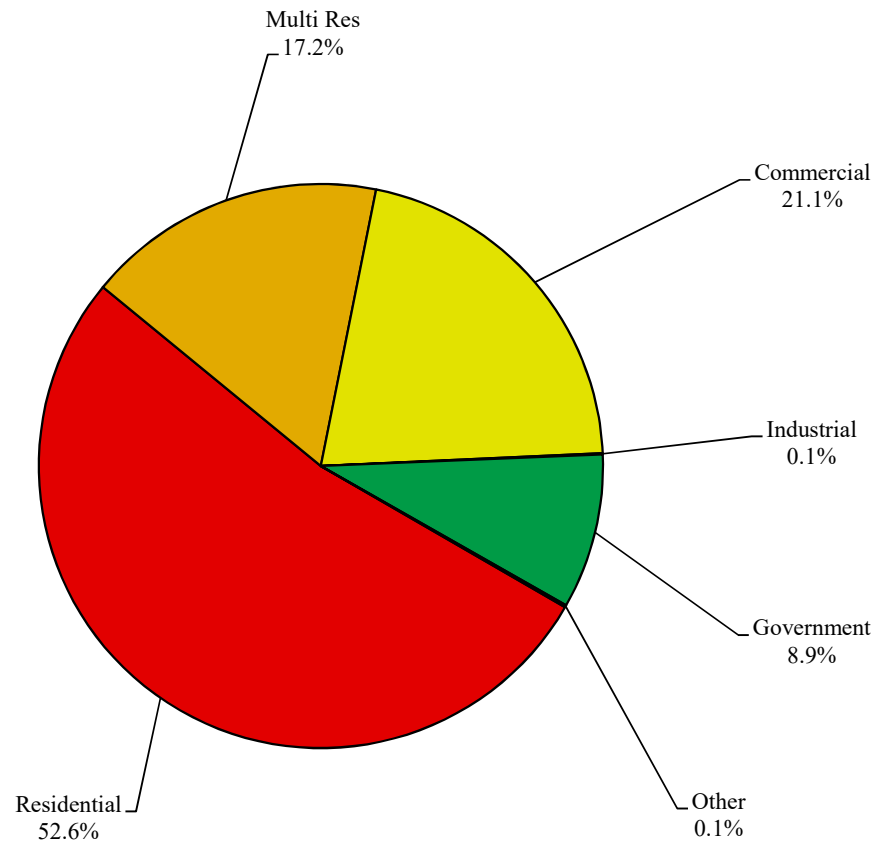
California Water Service Company - Marysville District
Water Supply and Demand Analysis and Projections
Percentage Change in Annual Demand

Worksheet 5

Year	Residential	Multi Res	Commercial	Industrial	Government	Other	Unaccounted	Total
1981	0.73%	7.15%	4.78%	80.63%	-2.99%	349.64%	4.53%	4.53%
1982	-5.54%	-3.76%	-6.83%	-18.94%	-12.72%	-75.75%	-4.89%	-4.89%
1983	5.13%	4.90%	2.89%	-14.30%	7.75%	-66.78%	1.94%	1.94%
1984	31.22%	7.85%	5.86%	-0.39%	21.10%	39.00%	9.81%	9.81%
1985	-6.84%	-3.94%	-2.83%	33.26%	-2.15%	565.47%	1.15%	1.15%
1986	5.75%	19.83%	2.99%	17.35%	4.07%	-87.14%	5.74%	5.74%
1987	6.53%	6.24%	1.98%	16.09%	7.00%	-100.00%	3.15%	3.15%
1988	5.82%	3.87%	-0.91%	-34.20%	-11.56%		-5.75%	-5.75%
1989	-4.69%	-1.15%	-1.72%	-6.17%	-6.05%		-2.45%	-2.45%
1990	1.11%	2.36%	1.07%	9.12%	9.18%		4.59%	4.59%
1991	-5.10%	-5.89%	-2.14%	3.66%	-11.96%		1.56%	1.56%
1992	3.60%	4.61%	-0.27%	5.07%	4.07%	183.54%	4.58%	4.58%
1993	2.70%	4.85%	0.97%	4.27%	-11.54%	-9.60%	-3.25%	-3.25%
1994	11.40%	-4.46%	2.11%	-5.75%	12.73%	-64.94%	2.93%	2.93%
1995	-3.81%	2.16%	-3.16%	-1.11%	2.91%	276.76%	-1.52%	-1.52%
1996	11.12%	5.14%	3.17%	-3.52%	12.17%	84.86%	5.15%	5.15%
1997	7.91%	-0.24%	-2.78%	-30.65%	20.31%	-71.59%	-1.99%	-1.99%
1998	-14.84%	-10.01%	-5.34%	-0.18%	-17.92%	-24.91%	-14.02%	-14.02%
1999	15.75%	10.68%	7.22%	-0.33%	12.76%	63.51%	12.48%	12.48%
2000	-0.61%	4.38%	1.87%	4.05%	4.67%	15.07%	-2.48%	-2.48%
2001	-1.25%	3.88%	-10.43%	-18.11%	9.40%	-46.35%	-4.01%	-4.01%
2002	5.49%	0.80%	3.08%	-2.71%	7.29%	90.14%	4.71%	4.71%
2003	10.90%	11.93%	-20.06%	-3.99%	-3.32%	-74.81%	-7.84%	-7.84%
2004	18.02%	1.20%	-5.14%	-7.44%	10.12%	25.49%	2.37%	2.37%
2005	-9.30%	-8.77%	-0.92%	-53.67%	-8.56%	-79.69%	-11.89%	-11.89%
2006	4.66%	1.83%	-0.32%	-85.68%	9.31%	53.85%	8.80%	8.80%
2007	3.22%	-3.50%	7.05%	74.88%	6.61%	2035.00%	0.61%	0.61%
2008	6.38%	0.28%	3.44%	-34.19%	14.91%	-3.16%	-1.83%	-1.83%
2009	11.35%	-3.57%	-24.28%	-28.71%	-16.24%	58.77%	-14.21%	-14.21%
2010	34.19%	-2.52%	-5.82%	114.93%	-9.75%	-20.26%	-10.09%	-10.09%
2011	36.41%	-2.91%	-8.60%	-76.10%	-3.26%	2.96%	-6.37%	-6.37%
2012	30.65%	9.20%	2.80%	10.79%	-0.47%	550.37%	2.41%	2.41%
2013	11.57%	-6.56%	6.62%	74.59%	-1.76%	-72.13%	1.51%	1.51%
2014	-9.25%	-8.28%	-6.96%	-27.69%	-16.61%	69.34%	-12.53%	-12.53%
2015	-12.16%	-9.06%	-9.33%	-35.69%	-35.23%	-76.07%	-13.49%	-13.49%

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Percent of Total Sales by Type of Use (2015)

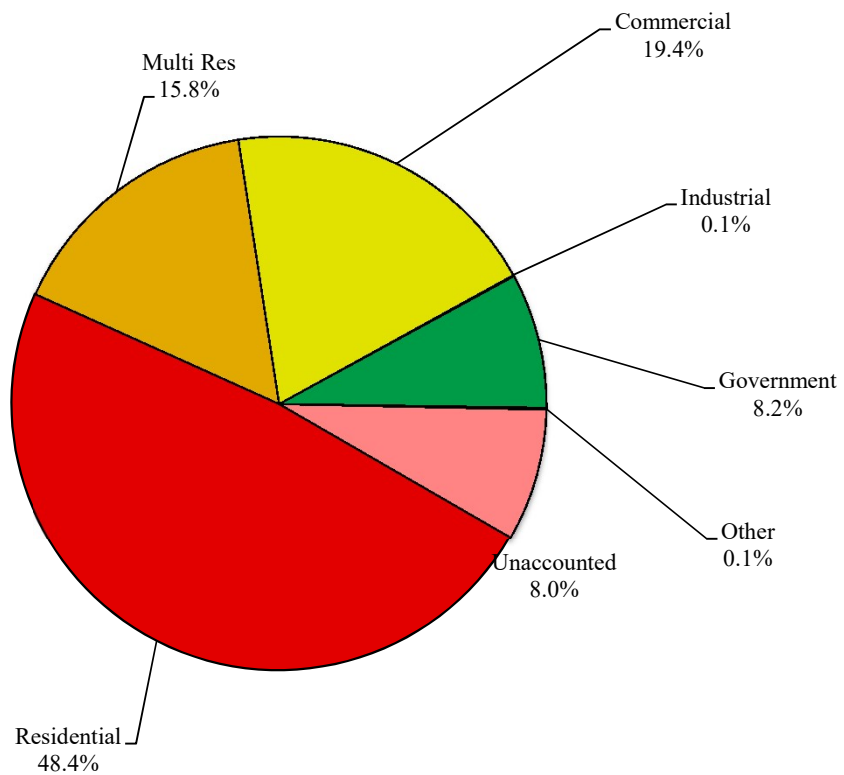


California Water Service Company - Marysville District
Water Supply and Demand Analysis and Projections
Percentage of Total Sales

Worksheet 6

Year	Residential	Multi Res	Commercial	Industrial	Government	Other	Percent Total
1980	57.45%	7.69%	25.86%	2.15%	6.82%	0.02%	100.00%
1981	56.04%	7.88%	25.92%	3.72%	6.33%	0.10%	100.00%
1982	57.62%	7.97%	25.40%	3.17%	5.81%	0.03%	100.00%
1983	57.35%	8.20%	25.63%	2.67%	6.14%	0.01%	100.00%
1984	58.03%	8.06%	24.71%	2.42%	6.77%	0.01%	100.00%
1985	58.80%	7.65%	23.74%	3.19%	6.55%	0.07%	100.00%
1986	58.22%	8.67%	23.12%	3.54%	6.45%	0.01%	100.00%
1987	57.54%	8.93%	22.86%	3.98%	6.69%	0.00%	100.00%
1988	57.07%	9.84%	24.03%	2.78%	6.28%	0.00%	100.00%
1989	57.10%	9.97%	24.21%	2.67%	6.04%	0.00%	100.00%
1990	57.74%	9.76%	23.40%	2.79%	6.31%	0.00%	100.00%
1991	60.08%	9.04%	22.54%	2.85%	5.47%	0.01%	100.00%
1992	61.12%	9.05%	21.50%	2.86%	5.44%	0.03%	100.00%
1993	59.67%	9.81%	22.44%	3.08%	4.98%	0.03%	100.00%
1994	60.36%	9.10%	22.26%	2.82%	5.45%	0.01%	100.00%
1995	60.10%	9.44%	21.89%	2.83%	5.70%	0.04%	100.00%
1996	60.34%	9.44%	21.48%	2.60%	6.08%	0.07%	100.00%
1997	59.77%	9.61%	21.30%	1.84%	7.46%	0.02%	100.00%
1998	57.21%	10.06%	23.45%	2.14%	7.12%	0.02%	100.00%
1999	58.69%	9.90%	22.36%	1.89%	7.14%	0.02%	100.00%
2000	56.34%	10.59%	23.36%	2.02%	7.66%	0.03%	100.00%
2001	56.27%	11.46%	21.79%	1.72%	8.73%	0.02%	100.00%
2002	56.93%	11.04%	21.45%	1.60%	8.95%	0.03%	100.00%
2003	56.93%	13.40%	18.61%	1.67%	9.39%	0.01%	100.00%
2004	57.89%	13.25%	17.24%	1.51%	10.10%	0.01%	100.00%
2005	55.62%	13.72%	19.39%	0.79%	10.48%	0.00%	100.00%
2006	58.76%	12.84%	17.76%	0.10%	10.53%	0.00%	100.00%
2007	57.38%	12.32%	18.90%	0.18%	11.16%	0.07%	100.00%
2008	54.26%	12.58%	19.92%	0.12%	13.06%	0.07%	100.00%
2009	55.31%	14.14%	17.58%	0.10%	12.75%	0.12%	100.00%
2010	53.11%	15.33%	18.41%	0.24%	12.80%	0.11%	100.00%
2011	52.72%	15.90%	17.98%	0.06%	13.22%	0.12%	100.00%
2012	51.31%	16.95%	18.05%	0.07%	12.85%	0.77%	100.00%
2013	52.68%	15.60%	18.95%	0.11%	12.43%	0.21%	100.00%
2014	51.12%	16.36%	20.16%	0.09%	11.85%	0.41%	100.00%
2015	52.61%	17.20%	21.13%	0.07%	8.88%	0.11%	100.00%

Percent of Total Demand by Type of Use (2015)

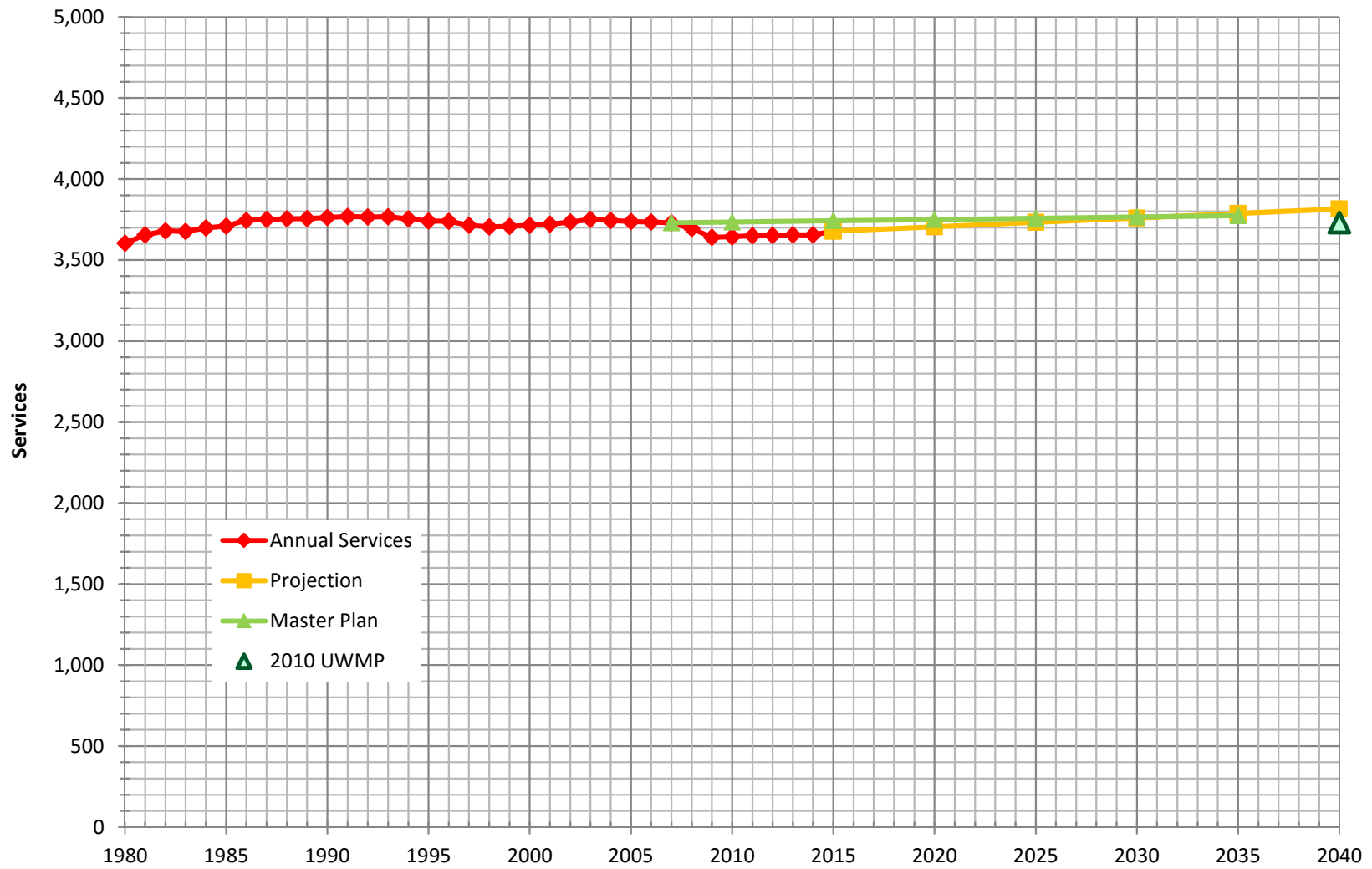


California Water Service Company - Marysville District
Water Supply and Demand Analysis and Projections
Percentage of Total Demand

Worksheet 7

Year	Residential	Multi Res	Commercial	Industrial	Government	Other	Unaccounted	Percent Total
1980	52.86%	7.07%	23.79%	1.98%	6.28%	0.02%	8.00%	100.00%
1981	51.56%	7.25%	23.85%	3.43%	5.82%	0.10%	8.00%	100.00%
1982	53.01%	7.34%	23.36%	2.92%	5.35%	0.02%	8.00%	100.00%
1983	52.76%	7.55%	23.58%	2.45%	5.65%	0.01%	8.00%	100.00%
1984	53.39%	7.41%	22.73%	2.23%	6.23%	0.01%	8.00%	100.00%
1985	54.10%	7.04%	21.84%	2.93%	6.03%	0.07%	8.00%	100.00%
1986	53.56%	7.98%	21.27%	3.25%	5.93%	0.01%	8.00%	100.00%
1987	52.94%	8.22%	21.03%	3.66%	6.15%	0.00%	8.00%	100.00%
1988	52.51%	9.05%	22.11%	2.56%	5.77%	0.00%	8.00%	100.00%
1989	52.53%	9.18%	22.27%	2.46%	5.56%	0.00%	8.00%	100.00%
1990	53.13%	8.98%	21.52%	2.57%	5.80%	0.00%	8.00%	100.00%
1991	55.28%	8.32%	20.74%	2.62%	5.03%	0.01%	8.00%	100.00%
1992	56.23%	8.32%	19.78%	2.63%	5.01%	0.03%	8.00%	100.00%
1993	54.90%	9.02%	20.64%	2.84%	4.58%	0.03%	8.00%	100.00%
1994	55.53%	8.37%	20.48%	2.60%	5.01%	0.01%	8.00%	100.00%
1995	55.29%	8.69%	20.14%	2.61%	5.24%	0.03%	8.00%	100.00%
1996	55.51%	8.69%	19.76%	2.39%	5.59%	0.06%	8.00%	100.00%
1997	54.99%	8.84%	19.60%	1.69%	6.86%	0.02%	8.00%	100.00%
1998	52.64%	9.25%	21.58%	1.97%	6.55%	0.02%	8.00%	100.00%
1999	53.99%	9.11%	20.57%	1.74%	6.57%	0.02%	8.00%	100.00%
2000	51.83%	9.75%	21.49%	1.86%	7.05%	0.03%	8.00%	100.00%
2001	51.77%	10.55%	20.05%	1.59%	8.03%	0.01%	8.00%	100.00%
2002	52.38%	10.15%	19.74%	1.47%	8.23%	0.03%	8.00%	100.00%
2003	52.37%	12.33%	17.12%	1.53%	8.64%	0.01%	8.00%	100.00%
2004	53.26%	12.19%	15.86%	1.39%	9.29%	0.01%	8.00%	100.00%
2005	51.17%	12.62%	17.84%	0.73%	9.64%	0.00%	8.00%	100.00%
2006	54.06%	11.81%	16.34%	0.10%	9.68%	0.00%	8.00%	100.00%
2007	52.79%	11.33%	17.39%	0.17%	10.26%	0.06%	8.00%	100.00%
2008	49.92%	11.57%	18.32%	0.11%	12.01%	0.06%	8.00%	100.00%
2009	50.88%	13.01%	16.17%	0.09%	11.73%	0.11%	8.00%	100.00%
2010	48.86%	14.10%	16.94%	0.22%	11.77%	0.10%	8.00%	100.00%
2011	48.50%	14.63%	16.54%	0.06%	12.16%	0.11%	8.00%	100.00%
2012	47.21%	15.60%	16.60%	0.06%	11.82%	0.71%	8.00%	100.00%
2013	48.47%	14.36%	17.44%	0.11%	11.44%	0.19%	8.00%	100.00%
2014	47.03%	15.05%	18.55%	0.09%	10.91%	0.38%	8.00%	100.00%
2015	48.40%	15.83%	19.44%	0.06%	8.17%	0.10%	8.00%	100.00%

Historical & Projected Services



California Water Service Company - Marysville District
Water Supply and Demand Analysis and Projections

Worksheet 8

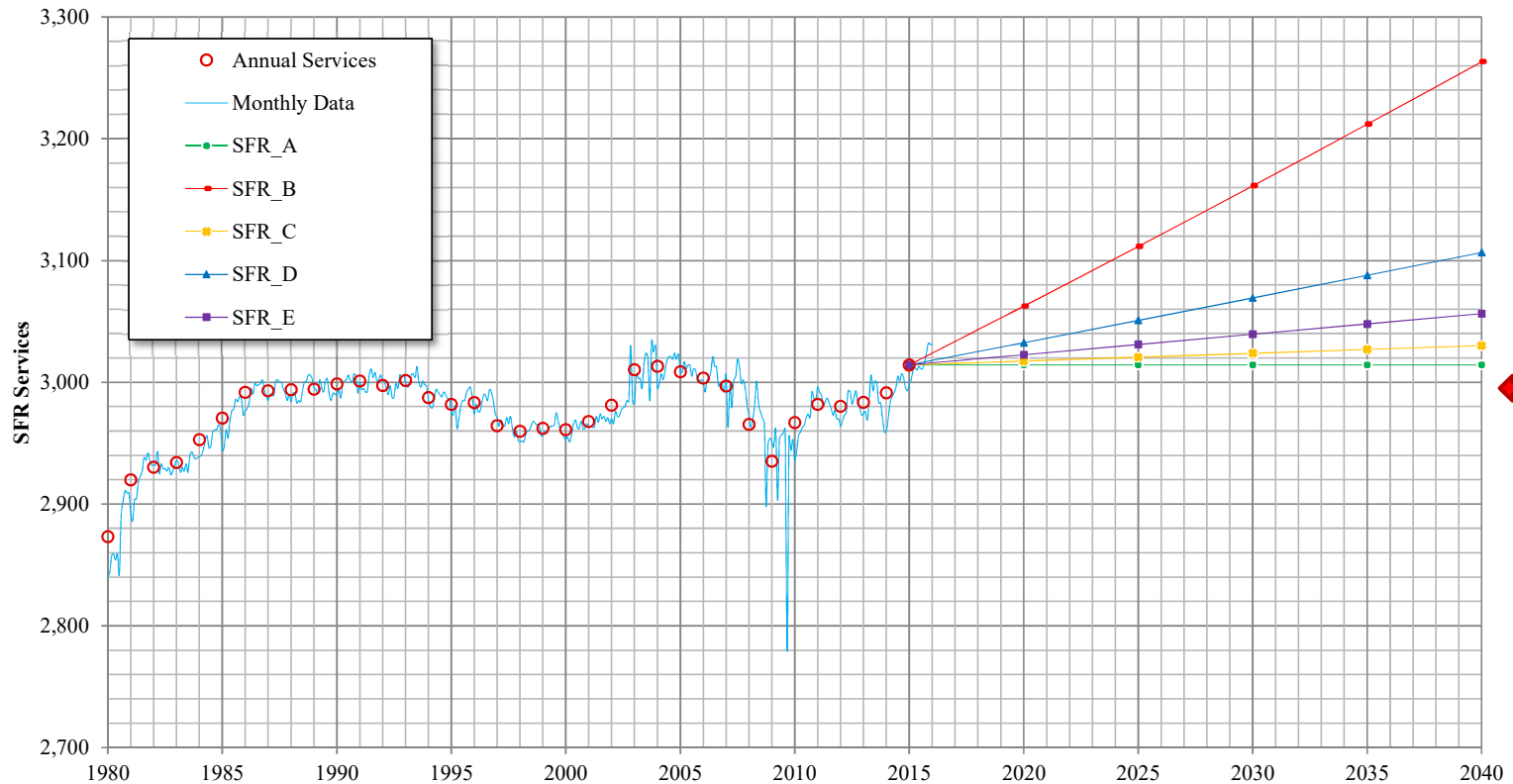
Customer Category		Selected Trend	Growth Rate	Actual Services				Projected Services					
				2000	2005	2010	Base Year 2015	2015	2020	2025	2030	2035	2040
SFR	SFR_D	15 Yr. Avg.	0.12%	2,961	3,009	2,967	3,014	3,014	3,032	3,051	3,069	3,088	3,107
MFR	MFR_C	10 Yr. Avg.	0.62%	67	126	128	134	134	138	143	147	152	156
COM	COM_E	Overall 5 Yr. Avg.	0.19%	613	528	488	483	483	487	492	497	501	506
IND	IND_A	Zero Growth Rate	0.00%	4	3	2	1	1	1	1	1	1	1
GOV	GOV_A	Zero Growth Rate	0.00%	67	70	53	42	42	42	42	42	42	42
OTH	OTH_A	Zero Growth Rate	0.00%	3	2	6	4	4	4	4	4	4	4
TOTAL	Average growth rate 2011-2040		0.15%	3,715	3,738	3,644	3,678	3,678	3,705	3,732	3,760	3,787	3,816

California Water Service Company - Marysville District

Water Supply and Demand Analysis and Projections

SFR Historical & Projected Services

Worksheet 8a



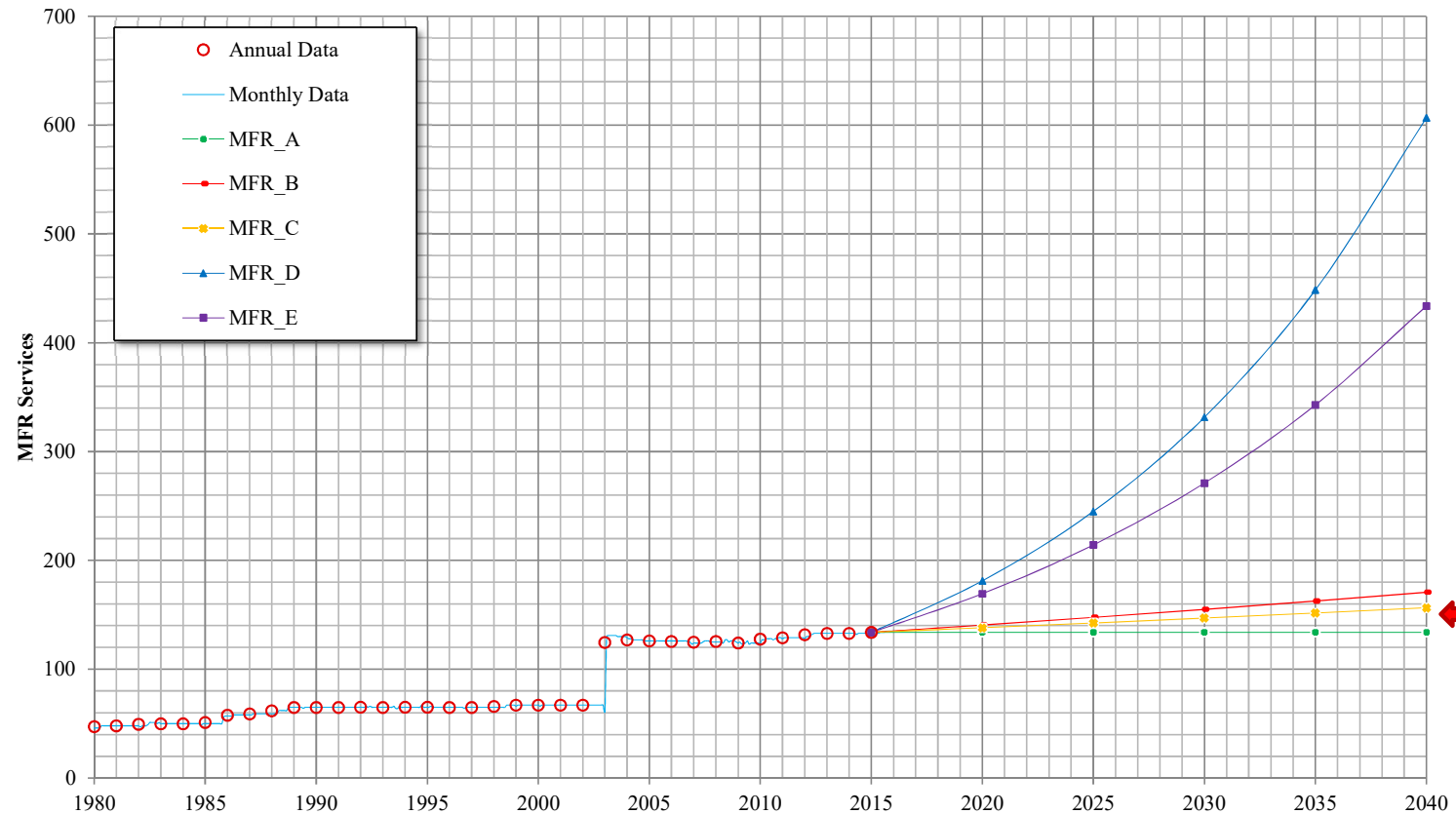
Customer Category	Trend			Growth Rate	Actual			Base Year 2015	Projected					
					2000	2005	2010		Services 2015	Services 2020	Services 2025	Services 2030	Services 2035	Services 2040
SFR		SFR_A	Zero Growth Rate	0.00%	2,961	3,009	2,967	3,014	3,014	3,014	3,014	3,014	3,014	3,014
		SFR_B	5 Yr. Avg.	0.32%				3,014	3,014	3,062	3,111	3,161	3,212	3,263
		SFR_C	10 Yr. Avg.	0.02%				3,014	3,014	3,017	3,021	3,024	3,027	3,030
	>	SFR_D	15 Yr. Avg.	0.12%				3,014	3,014	3,032	3,051	3,069	3,088	3,107
		SFR_E	20 Yr. Avg.	0.06%				3,014	3,014	3,023	3,031	3,039	3,048	3,056

California Water Service Company - Marysville District

Worksheet 8b

Water Supply and Demand Analysis and Projections

MFR 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
MFR		MFR_A	Zero Growth Rate	0.00%	67	126	128	134	134	134	134	134	134	134
		MFR_B	5 Yr. Avg.	0.98%				134	134	141	148	155	163	171
	>	MFR_C	10 Yr. Avg.	0.62%				134	134	138	143	147	152	156
		MFR_D	15 Yr. Avg.	6.23%				134	134	181	245	332	449	607
		MFR_E	20 Yr. Avg.	4.81%				134	134	169	214	271	343	434

California Water Service Company - Marysville District

Worksheet 8c

Water Supply and Demand Analysis and Projections

COM Historical & Projected Services



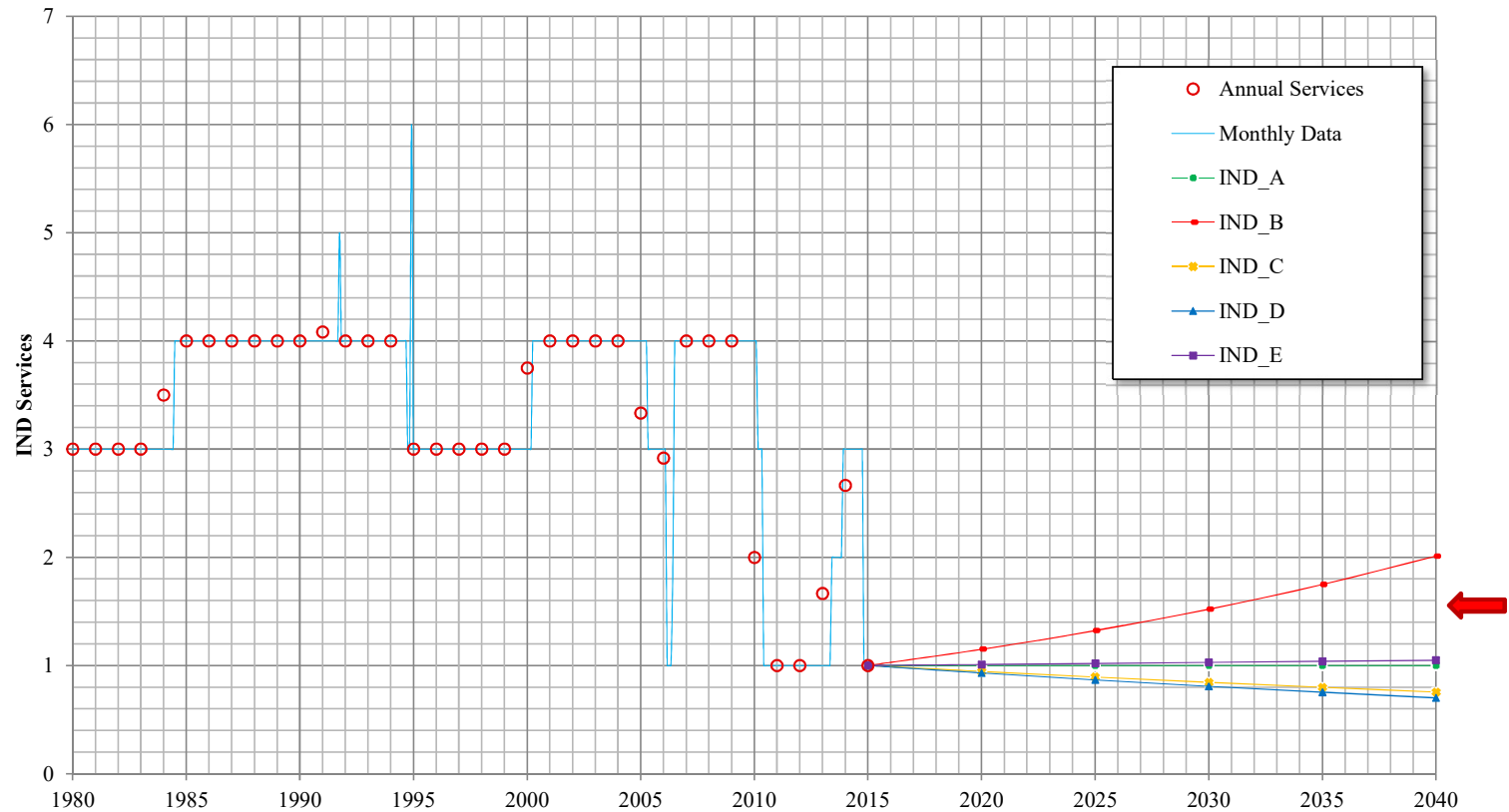
Customer Category	Trend		Growth Rate	Actual				Projected					
				2000	2005	2010	Base Year 2015	Services 2015	Services 2020	Services 2025	Services 2030	Services 2035	Services 2040
COM		COM_A	Zero Growth Rate	613	528	488	483	483	483	483	483	483	483
		COM_B	5 Yr. Avg.				483	483	478	473	468	463	458
		COM_C	10 Yr. Avg.				483	483	462	442	423	404	387
		COM_D	15 Yr. Avg.				483	483	447	414	383	355	329
	>	COM_E	Overall 5 Yr. Avg.				483	483	487	492	497	501	506

California Water Service Company - Marysville District

Water Supply and Demand Analysis and Projections

IND Historical & Projected Services

Worksheet 8d



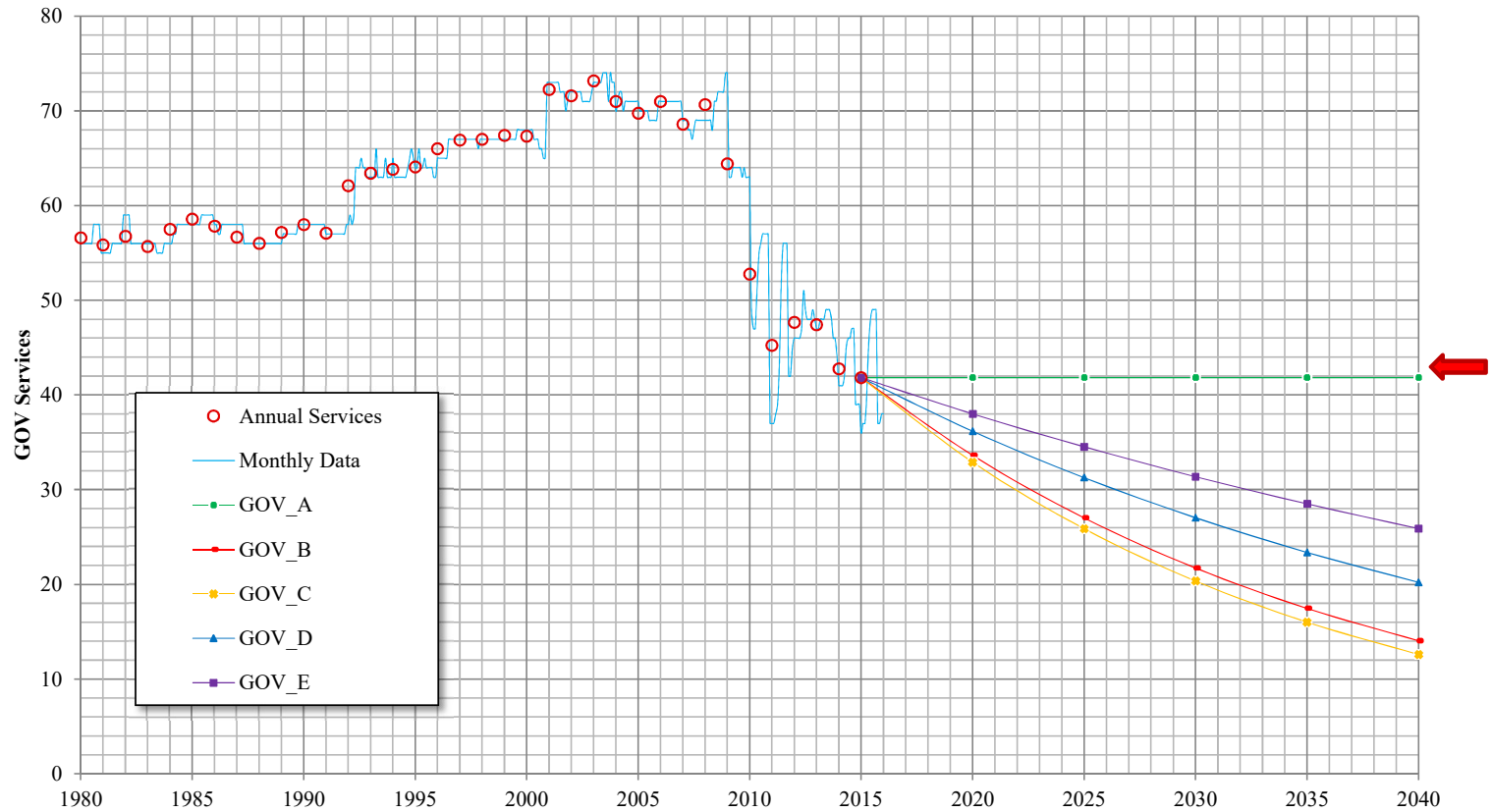
Customer Category	Trend			Growth Rate	Actual				Projected					
					2000	2005	2010	Base Year 2015	Services 2015	Services 2020	Services 2025	Services 2030	Services 2035	Services 2040
IND	>	IND_A	Zero Growth Rate	0.00%	4	3	2	1	1	1	1	1	1	1
		IND_B	5 Yr. Avg.	2.83%				1	1	1	1	2	2	2
		IND_C	10 Yr. Avg.	-1.12%				1	1	1	1	1	1	1
		IND_D	15 Yr. Avg.	-1.41%				1	1	1	1	1	1	1
		IND_E	20 Yr. Avg.	0.19%				1	1	1	1	1	1	1

California Water Service Company - Marysville District

Water Supply and Demand Analysis and Projections

GOV Historical & Projected Services

Worksheet 8e



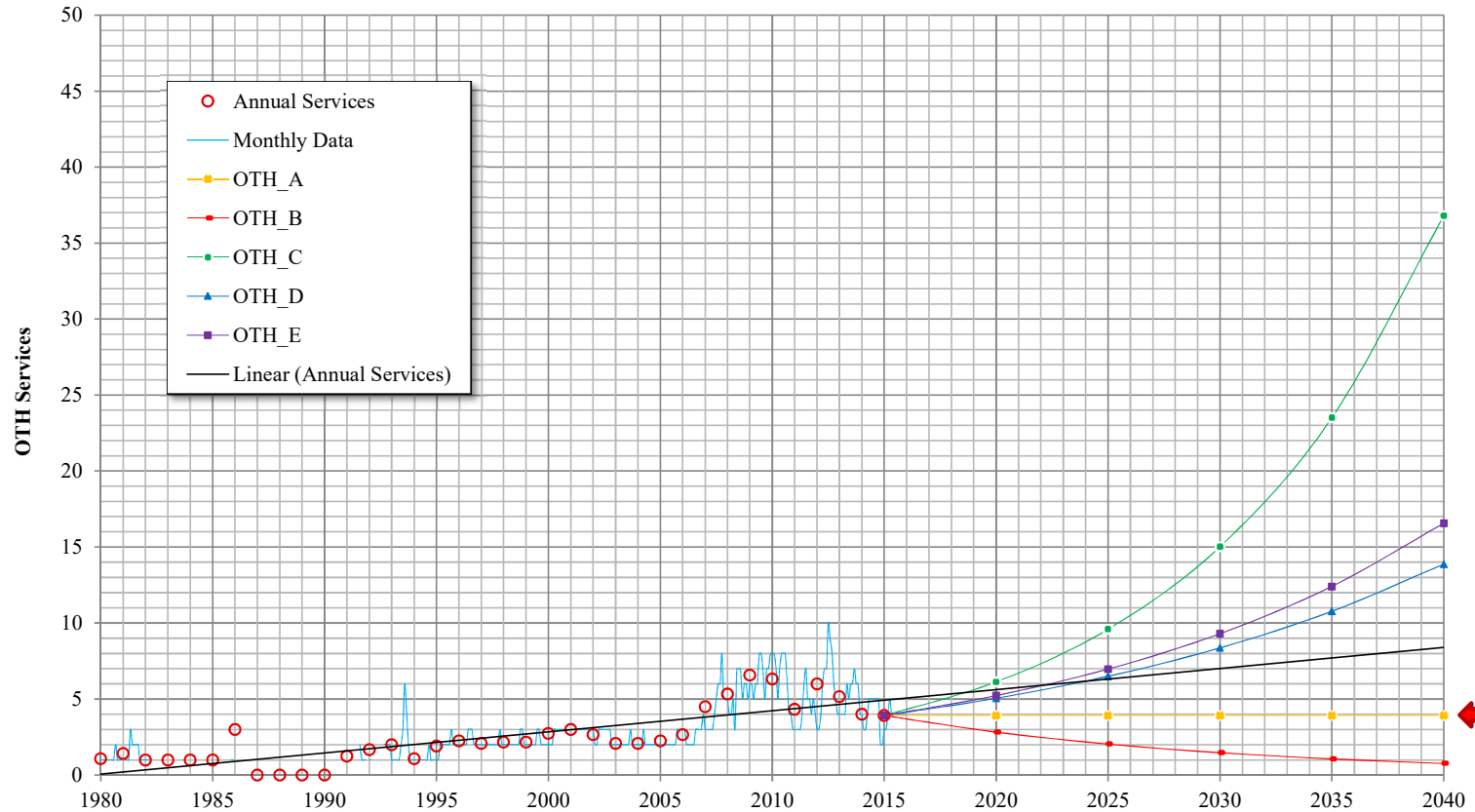
Customer Category	Trend			Growth Rate	Actual			Base Year 2015	Projected					
					2000	2005	2010		Services 2015	Services 2020	Services 2025	Services 2030	Services 2035	Services 2040
GOV	>	GOV_A	Zero Growth Rate	0.00%	67	70	53	42	42	42	42	42	42	42
		GOV_B	5 Yr. Avg.	-4.28%				42	42	34	27	22	17	14
		GOV_C	10 Yr. Avg.	-4.69%				42	42	33	26	20	16	13
		GOV_D	15 Yr. Avg.	-2.87%				42	42	36	31	27	23	20
		GOV_E	20 Yr. Avg.	-1.90%				42	42	38	35	31	28	26

California Water Service Company - Marysville District

Water Supply and Demand Analysis and Projections

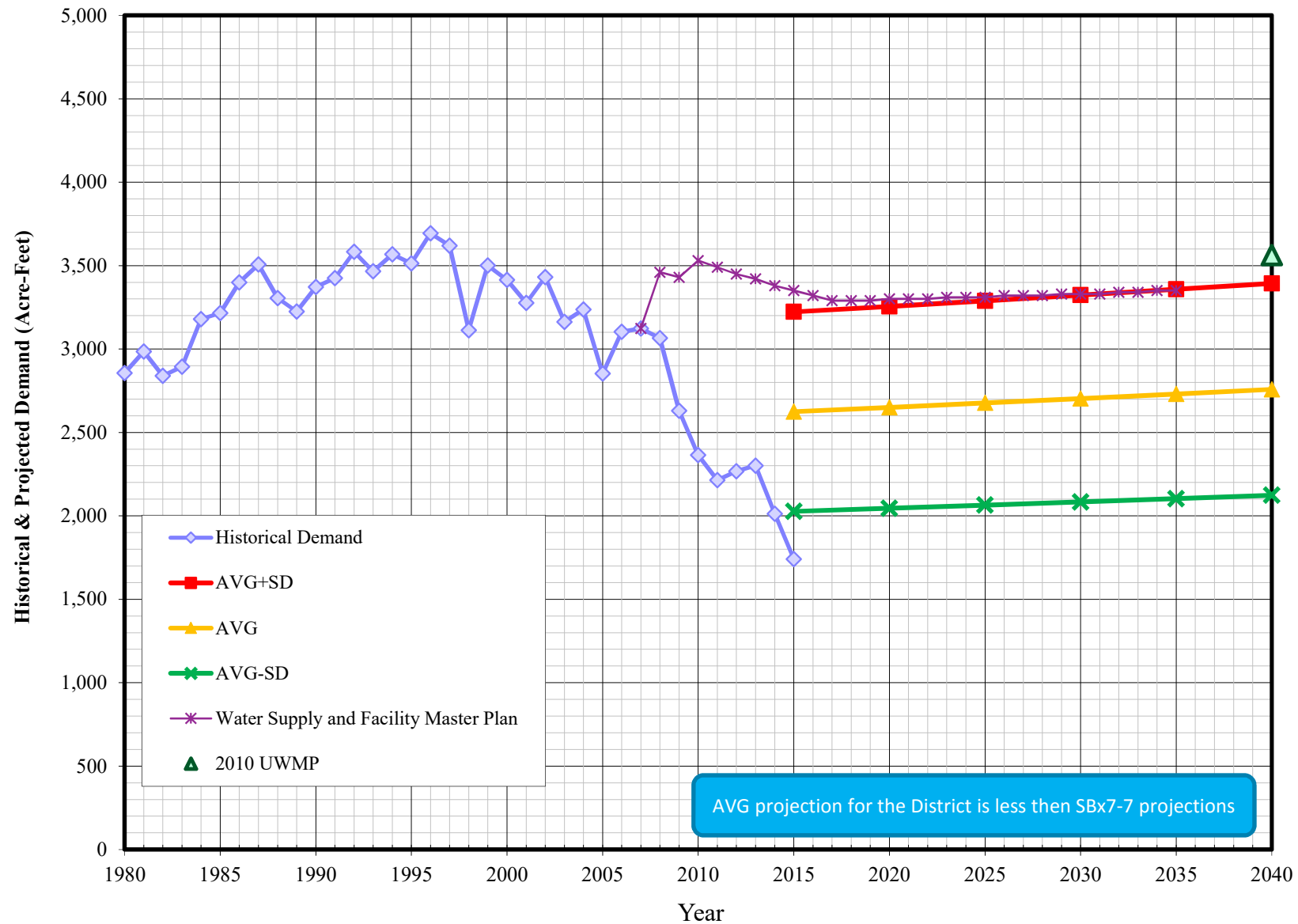
OTH Historical & Projected Services

Worksheet 8f



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
OTH	>	OTH_A	Zero Growth Rate	3	2	6	4	4	4	4	4	4	4
		OTH_B	5 Yr. Avg.				4	4	3	2	1	1	1
		OTH_C	10 Yr. Avg.				4	4	6	10	15	24	37
		OTH_D	15 Yr. Avg.				4	4	5	6	8	11	14
		OTH_E	20 Yr. Avg.				4	4	5	7	9	12	17

Historical & Projected Demand (MRL)

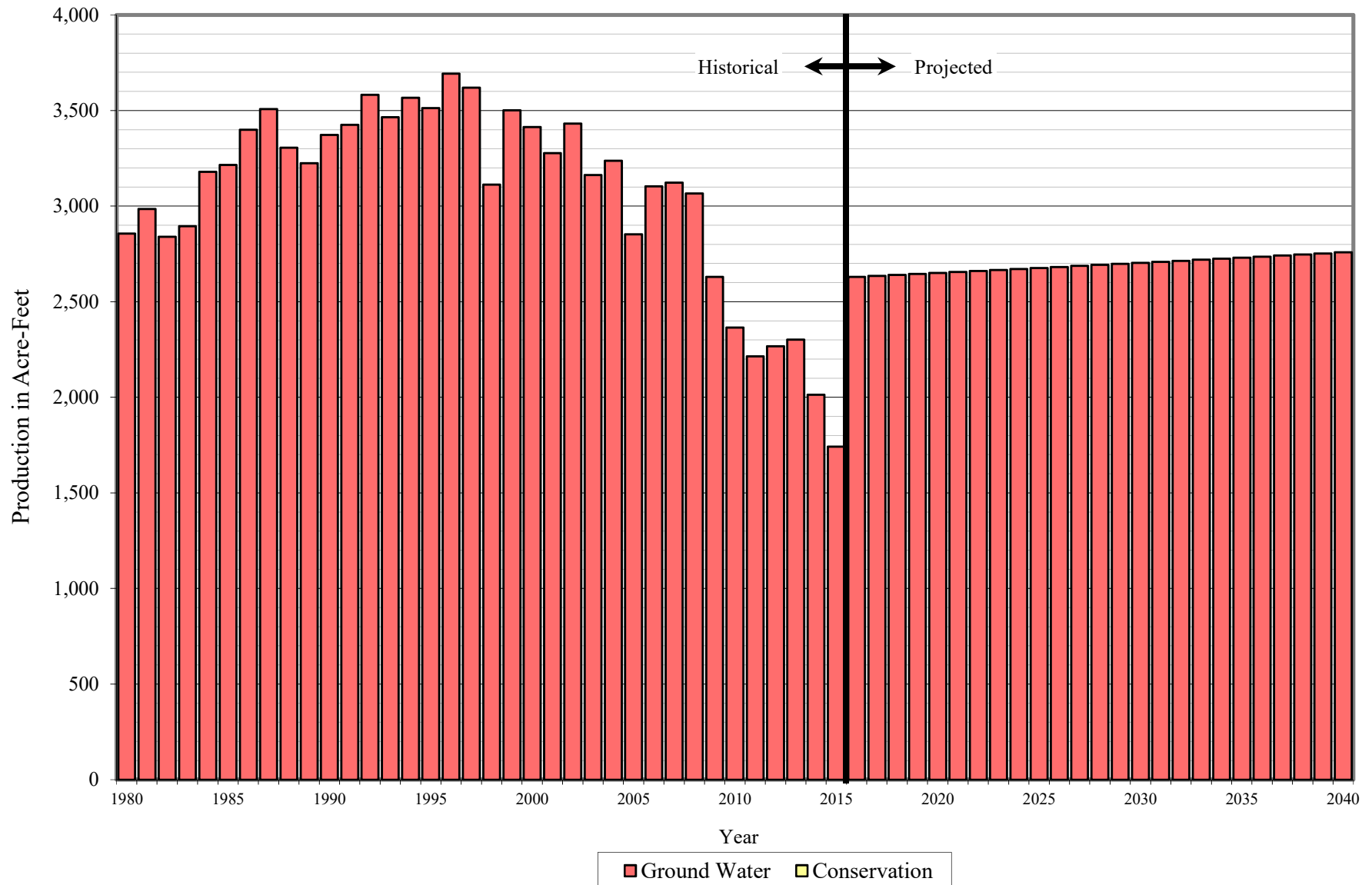


California Water Service Company - Marysville District
Water Supply and Demand Analysis and Projections

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	1,510	1,739	1,792	1,942	1,770	1,460	1,155	843	1,709	1,719	1,730	1,740	1,751	1,761
									1,393	1,401	1,410	1,418	1,427	1,435
									1,076	1,083	1,089	1,096	1,103	1,109
MFR	202	226	303	305	333	360	334	276	504	520	536	553	571	589
									370	381	393	406	419	432
									235	243	250	258	266	275
COM	680	702	726	707	734	509	401	339	504	508	513	518	523	528
									435	439	443	447	452	456
									367	370	374	377	381	384
IND	57	94	87	92	63	21	5	1	2	2	2	2	2	2
									1	1	1	1	1	1
									1	1	1	1	1	1
GOV	179	194	196	184	241	275	278	142	246	246	246	246	246	246
									207	207	207	207	207	207
									169	169	169	169	169	169
OTH	1	2	0	1	1	0	2	2	5	5	5	5	5	5
									2	2	2	2	2	2
									0	0	0	0	0	0
UAWF	228	257	270	281	273	228	189	139	253	255	257	259	261	263
									216	218	220	221	223	225
									179	181	182	183	185	186
TOTAL (AFY)	2,856	3,215	3,372	3,513	3,414	2,853	2,365	1,741	3,223	3,255	3,289	3,323	3,358	3,393
									2,625	2,650	2,677	2,703	2,730	2,758
									2,027	2,045	2,064	2,084	2,103	2,123
TOTAL (MGD)	2.550	2.870	3.011	3.136	3.048	2.547	2.111	1.555	2.877	2.906	2.936	2.967	2.998	3.029
									2.343	2.366	2.389	2.413	2.438	2.462
									1.809	1.826	1.843	1.860	1.878	1.896

Historical and Projected Distribution of Demand by Source



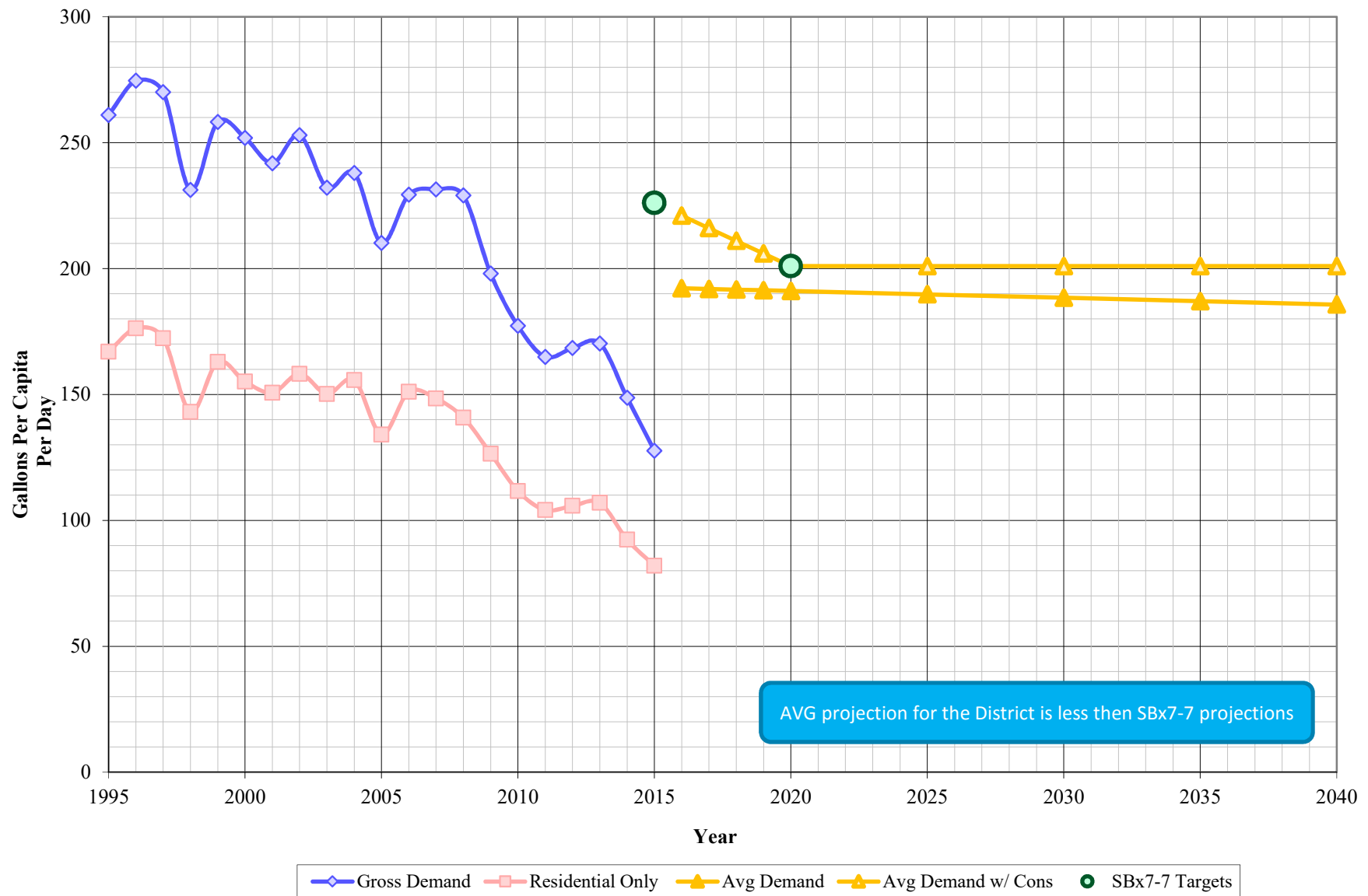
California Water Service Company - Marysville District
Water Supply and Demand Analysis and Projections
Historical and Projected Distribution of Demand by Source

Worksheet 10

Year	Ground Water			Conservation		Total	
	MGD	AFY		MGD	AFY	MGD	AFY
1980	2.55	2,856				2.55	2,856
1981	2.67	2,986				2.67	2,986
1982	2.53	2,840				2.53	2,840
1983	2.58	2,895				2.58	2,895
1984	2.84	3,179				2.84	3,179
1985	2.87	3,215				2.87	3,215
1986	3.04	3,400				3.04	3,400
1987	3.13	3,507				3.13	3,507
1988	2.95	3,305				2.95	3,305
1989	2.88	3,224				2.88	3,224
1990	3.01	3,372				3.01	3,372
1991	3.06	3,425				3.06	3,425
1992	3.20	3,582				3.20	3,582
1993	3.09	3,466				3.09	3,466
1994	3.18	3,567				3.18	3,567
1995	3.14	3,513				3.14	3,513
1996	3.30	3,693				3.30	3,693
1997	3.23	3,620				3.23	3,620
1998	2.78	3,112				2.78	3,112
1999	3.13	3,501				3.13	3,501
2000	3.05	3,414				3.05	3,414
2001	2.93	3,277				2.93	3,277
2002	3.06	3,432				3.06	3,432
2003	2.82	3,163				2.82	3,163
2004	2.89	3,238				2.89	3,238
2005	2.55	2,853				2.55	2,853
2006	2.77	3,104				2.77	3,104
2007	2.79	3,123				2.79	3,123
2008	2.74	3,065				2.74	3,065
2009	2.35	2,630				2.35	2,630
2010	2.11	2,365				2.11	2,365

Year	Ground Water		MGD	AFY	Conservation		MGD	AFY
	MGD	AFY			MGD	AFY		
2011	1.98	2,214	0.00	0	0.00	0	1.98	2,214
2012	2.02	2,267	0.00	0	0.00	0	2.02	2,267
2013	2.05	2,301	0.00	0	0.00	0	2.05	2,301
2014	1.80	2,013	0.00	0	0.00	0	1.80	2,013
2015	1.55	1,741	0.00	0	0.00	0	1.55	1,741
2016	2.35	2,630	0.00	0	0.00	0	2.35	2,630
2017	2.35	2,635	0.00	0	0.00	0	2.35	2,635
2018	2.36	2,640	0.00	0	0.00	0	2.36	2,640
2019	2.36	2,645	0.00	0	0.00	0	2.36	2,645
2020	2.37	2,650	0.00	0	0.00	0	2.37	2,650
2021	2.37	2,655	0.00	0	0.00	0	2.37	2,655
2022	2.38	2,661	0.00	0	0.00	0	2.38	2,661
2023	2.38	2,666	0.00	0	0.00	0	2.38	2,666
2024	2.38	2,671	0.00	0	0.00	0	2.38	2,671
2025	2.39	2,677	0.00	0	0.00	0	2.39	2,677
2026	2.39	2,682	0.00	0	0.00	0	2.39	2,682
2027	2.40	2,687	0.00	0	0.00	0	2.40	2,687
2028	2.40	2,692	0.00	0	0.00	0	2.40	2,692
2029	2.41	2,698	0.00	0	0.00	0	2.41	2,698
2030	2.41	2,703	0.00	0	0.00	0	2.41	2,703
2031	2.42	2,709	0.00	0	0.00	0	2.42	2,709
2032	2.42	2,714	0.00	0	0.00	0	2.42	2,714
2033	2.43	2,719	0.00	0	0.00	0	2.43	2,719
2034	2.43	2,725	0.00	0	0.00	0	2.43	2,725
2035	2.44	2,730	0.00	0	0.00	0	2.44	2,730
2036	2.44	2,736	0.00	0	0.00	0	2.44	2,736
2037	2.45	2,741	0.00	0	0.00	0	2.45	2,741
2038	2.45	2,747	0.00	0	0.00	0	2.45	2,747
2039	2.46	2,753	0.00	0	0.00	0	2.46	2,753
2040	2.46	2,758	0.00	0	0.00	0	2.46	2,758

Gross Per Capita Consumption (MRL)



California Water Service Company - Marysville District
Water Supply and Demand Analysis and Projections
Per Capita Water Demand Calculation

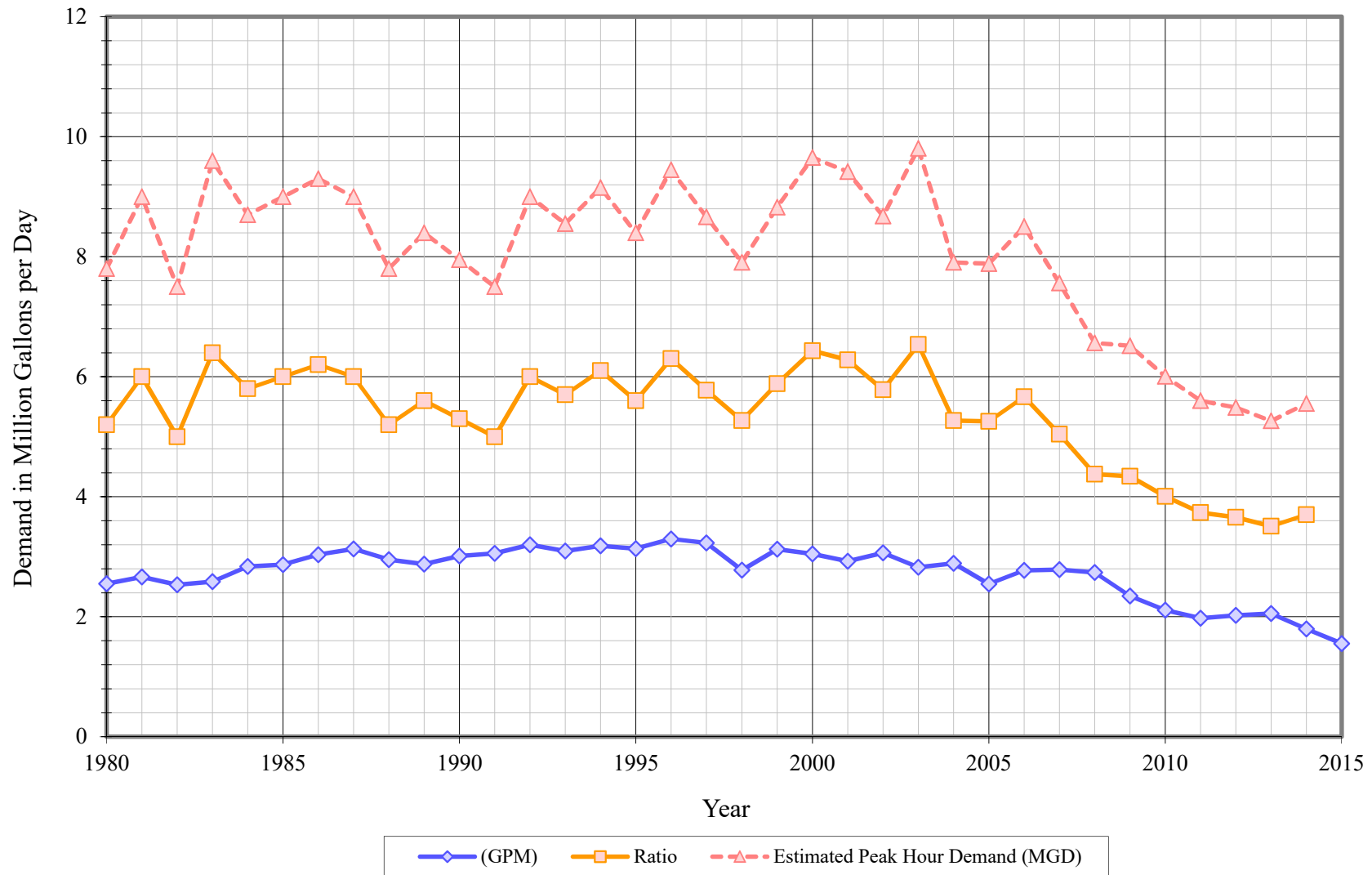
Worksheet 15

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	12,016	3,513	261	2,247	167				
1996	12,008	3,693	275	2,371	176				
1997	11,967	3,620	270	2,310	172				
1998	12,017	3,112	231	1,926	143				
1999	12,102	3,501	258	2,209	163				
2000	12,099	3,414	252	2,102	155				
2001	12,097	3,277	242	2,042	151				
2002	12,110	3,432	253	2,146	158				
2003	12,161	3,163	232	2,046	150				
2004	12,147	3,238	238	2,119	156				
2005	12,116	2,853	210	1,820	134				
2006	12,082	3,104	229	2,045	151				
2007	12,045	3,123	231	2,002	148				
2008	11,950	3,065	229	1,885	141				
2009	11,858	2,630	198	1,680	127				
2010	11,910	2,365	177	1,489	112				
2011	11,982	2,214	165	1,398	104				
2012	12,017	2,267	168	1,424	106				
2013	12,069	2,301	170	1,446	107				
2014	12,084	2,013	149	1,250	92				
2015	12,177	1,741	128	1,118	82				
2016	12,217	2,630				2,630	192	3,025	221
2017	12,258	2,635				2,635	192	2,966	216
2018	12,299	2,640				2,640	192	2,907	211
2019	12,341	2,645				2,645	191	2,847	206
2020	12,382	2,650				2,650	191	2,787	201
2025	12,593	2,677				2,677	190	2,835	201
2030	12,810	2,703				2,703	188	2,884	201
2035	13,033	2,730				2,730	187	2,934	201
2040	13,261	2,758				2,758	186	2,985	201

SBx7-7 Targets

2015	226
2020	201

Average Day, Maximum Day, Peak Demand

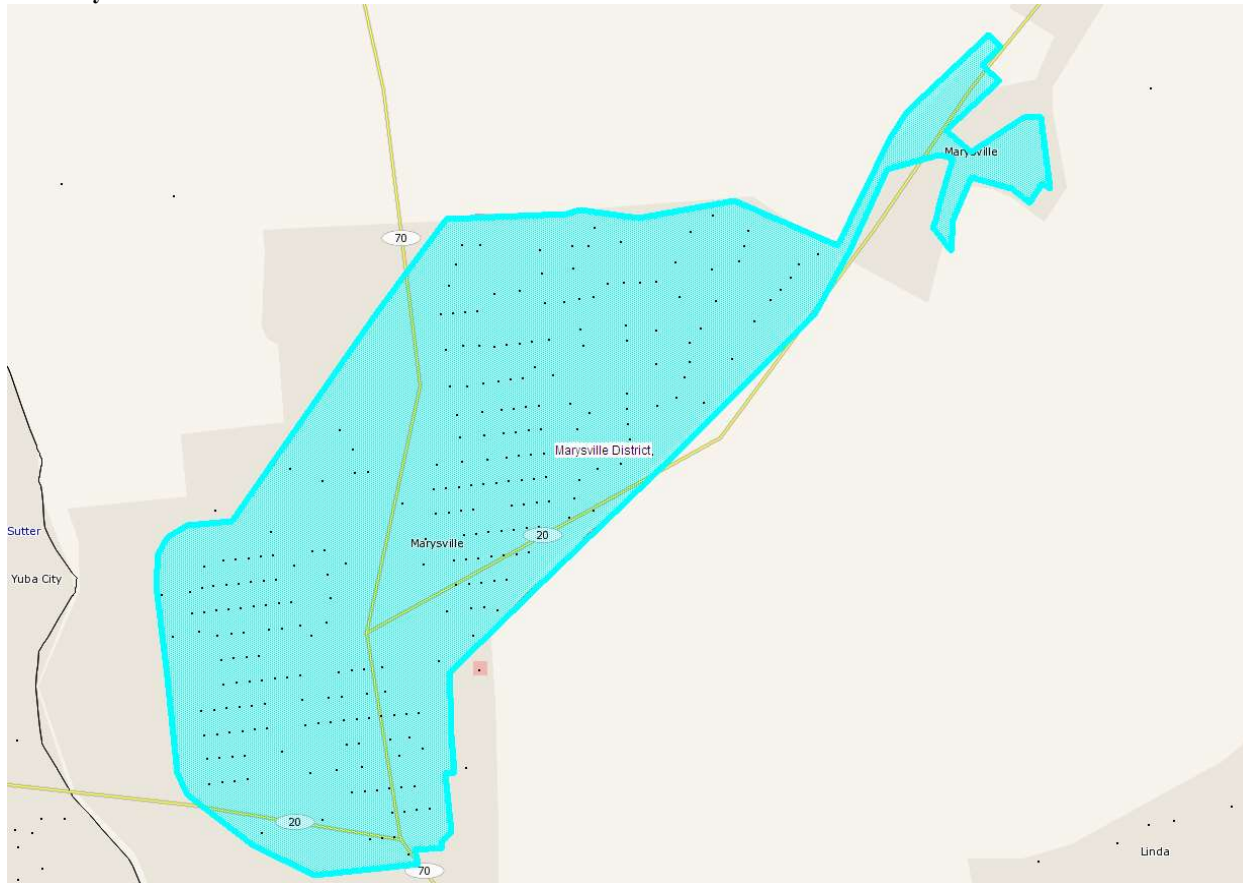


California Water Service Company - Marysville District
Water Supply and Demand Analysis and Projections
Historical and Projected Average Day, Maximum Day, and Peak Demand

Worksheet 11

Year	Historical Annual Demand (AFY)	Demand (MGY)	Average Day Demand (MGD)	Per Service (GPD)	Maximum Day Demand (MGD)	Per Service (GPD)	MDD ADD Ratio	Estimated Peak Hour Demand (MGD)	(GPM)	PHD MDD Ratio	PHD ADD Ratio	Measured Peak Hour Demand (MGD)	(GPM)	PHD MDD Ratio
1980	2,856	931	2.55	708	5.20	1,443	2.04	7.80	5,417	1.50	3.06			
1981	2,986	973	2.67	729	6.00	1,642	2.25	9.00	6,250	1.50	3.38			
1982	2,840	925	2.53	689	5.00	1,359	1.97	7.50	5,208	1.50	2.96			
1983	2,895	943	2.58	703	6.40	1,740	2.48	9.60	6,667	1.50	3.71			
1984	3,179	1,036	2.84	767	5.80	1,568	2.04	8.70	6,042	1.50	3.07			
1985	3,215	1,048	2.87	774	6.00	1,617	2.09	9.00	6,250	1.50	3.14			
1986	3,400	1,108	3.04	811	6.20	1,656	2.04	9.30	6,458	1.50	3.06			
1987	3,507	1,143	3.13	835	6.00	1,600	1.92	9.00	6,250	1.50	2.87			
1988	3,305	1,077	2.95	786	5.20	1,385	1.76	7.80	5,417	1.50	2.64			
1989	3,224	1,051	2.88	766	5.60	1,491	1.95	8.40	5,833	1.50	2.92			
1990	3,372	1,099	3.01	800	5.30	1,408	1.76	7.95	5,521	1.50	2.64			
1991	3,425	1,116	3.06	811	5.00	1,327	1.64	7.50	5,208	1.50	2.45			
1992	3,582	1,167	3.20	849	6.00	1,593	1.88	9.00	6,250	1.50	2.81			
1993	3,466	1,129	3.09	821	5.70	1,513	1.84	8.55	5,938	1.50	2.76			
1994	3,567	1,162	3.18	848	6.10	1,625	1.92	9.15	6,354	1.50	2.87			
1995	3,513	1,145	3.14	838	5.60	1,497	1.79	8.40	5,833	1.50	2.68			
1996	3,693	1,204	3.30	882	6.30	1,685	1.91	9.45	6,563	1.50	2.87			
1997	3,620	1,180	3.23	870	5.78	1,555	1.79	8.66	6,017	1.50	2.68			
1998	3,112	1,014	2.78	750	5.27	1,423	1.90	7.91	5,491	1.50	2.85			
1999	3,501	1,141	3.13	843	5.88	1,586	1.88	8.82	6,128	1.50	2.82			
2000	3,414	1,112	3.05	820	6.44	1,732	2.11	9.65	6,703	1.50	3.17			
2001	3,277	1,068	2.93	786	6.28	1,687	2.15	9.42	6,541	1.50	3.22			
2002	3,432	1,118	3.06	820	5.78	1,549	1.89	8.68	6,025	1.50	2.83			
2003	3,163	1,031	2.82	753	6.54	1,743	2.31	9.80	6,808	1.50	3.47			
2004	3,238	1,055	2.89	772	5.27	1,408	1.82	7.91	5,490	1.50	2.73			
2005	2,853	930	2.55	681	5.26	1,406	2.06	7.88	5,475	1.50	3.10			
2006	3,104	1,011	2.77	742	5.67	1,518	2.05	8.50	5,904	1.50	3.07			
2007	3,123	1,017	2.79	748	5.04	1,352	1.81	7.56	5,251	1.50	2.71			
2008	3,065	999	2.74	741	4.38	1,185	1.60	6.57	4,559	1.50	2.40			
2009	2,630	857	2.35	645	4.34	1,193	1.85	6.51	4,524	1.50	2.77			
2010	2,365	770	2.11	579	4.00	1,099	1.90	6.01	4,171	1.50	2.85			
2011	2,214	721	1.98	541	3.74	1,023	1.89	5.60	3,891	1.50	2.83			
2012	2,267	739	2.02	554	3.66	1,002	1.81	5.49	3,809	1.50	2.71			
2013	2,301	750	2.05	562	3.51	960	1.71	5.26	3,655	1.50	2.56			
2014	2,013	656	1.80	492	3.70	1,013	2.06	5.55	3,855	1.50	3.09			
2015	1,741	567	1.55	423										
10 year Average (2006-2015)			2.22	603	4.23	1,149	1.85	6.34	4,402	1.50	2.78			
5 year Average (2011-2015)			1.88	514	3.65	999	1.87	5.48	3,803	1.50	2.80			

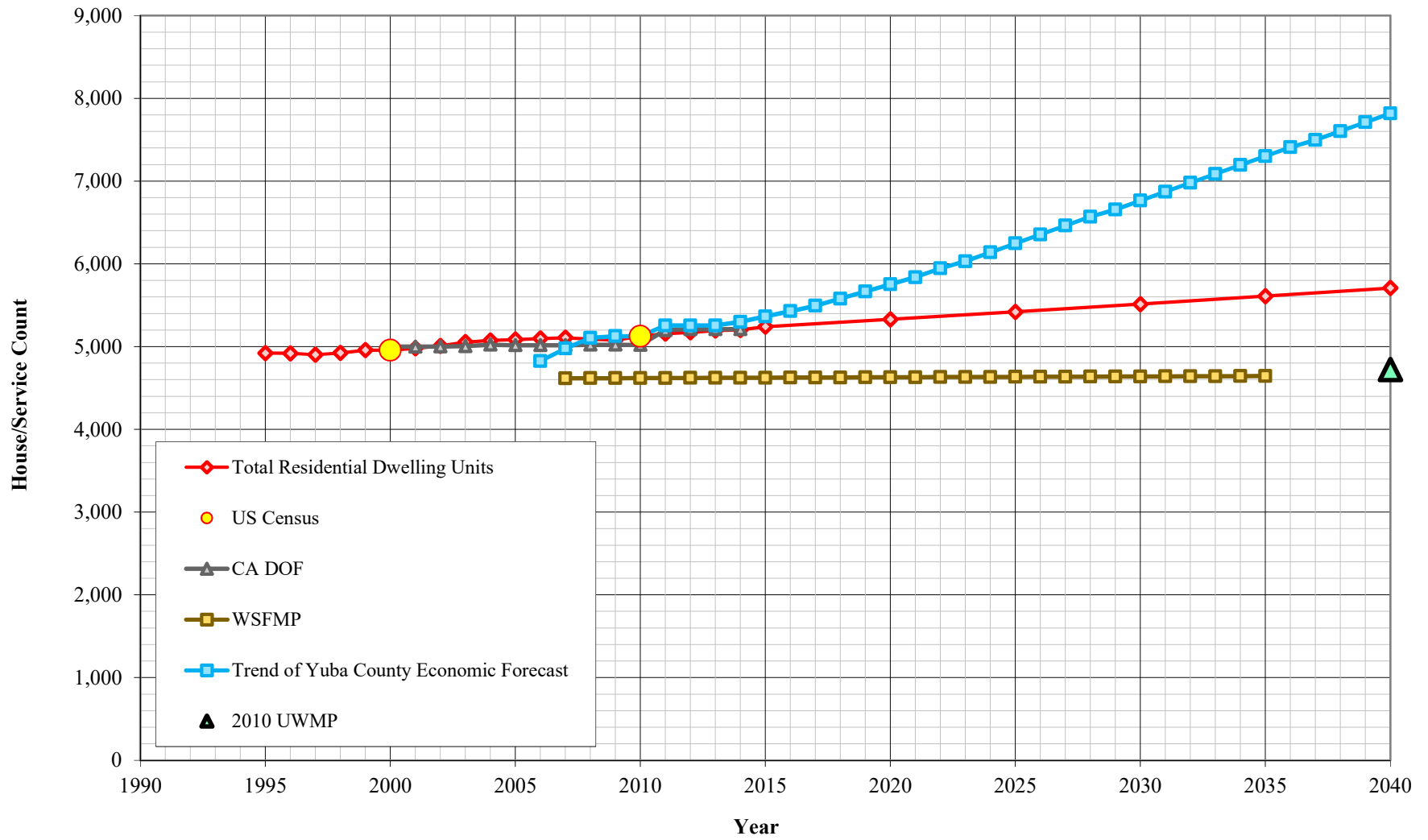
California Water Service Company - Marysville District
Water Supply and Demand Analysis and Projections
MarPlot Summary



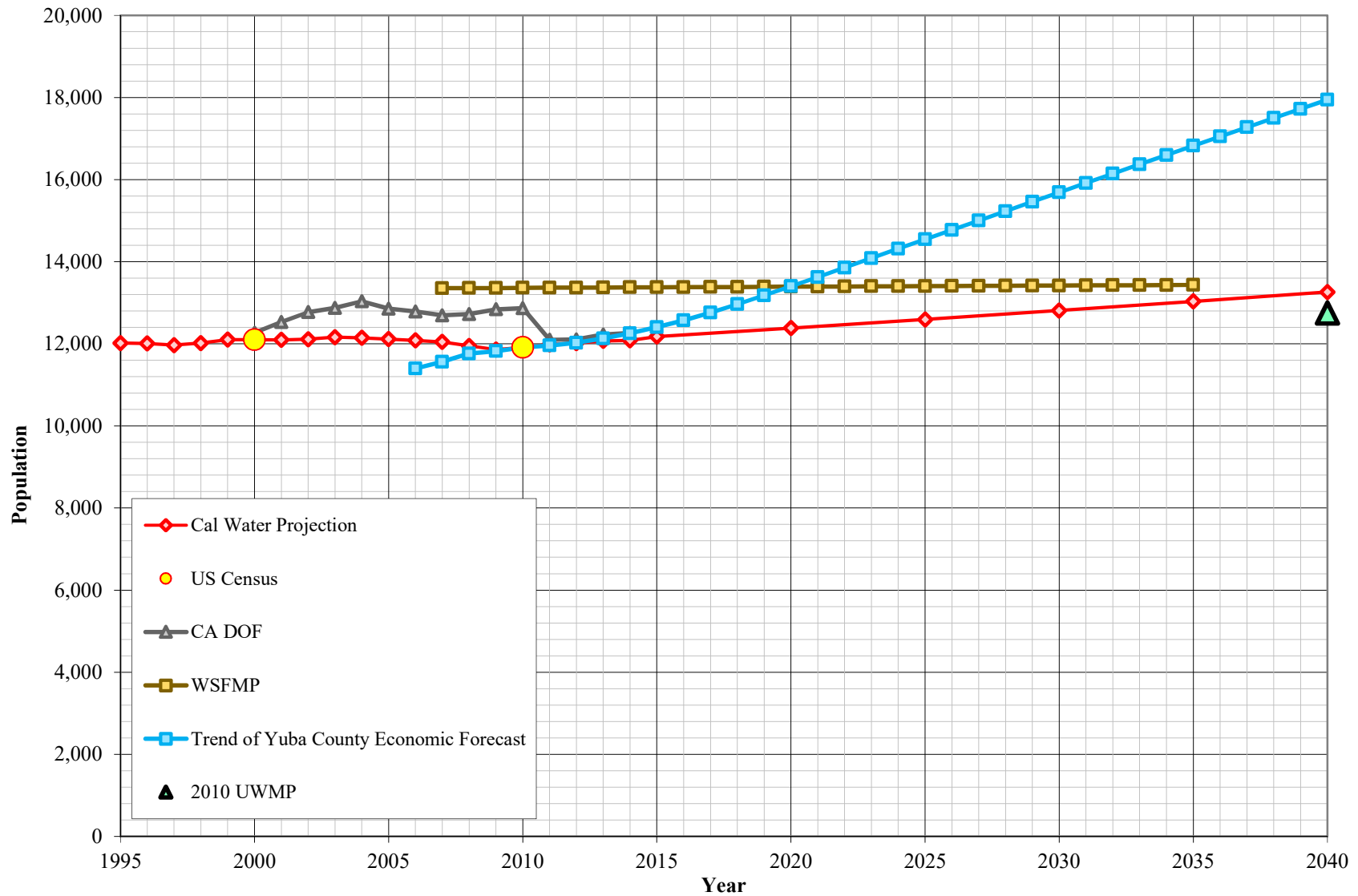
	US Census 2000 Summary				US Census 2010 Summary				2000-2010 Change		
System	Census Blocks	Population	Housing Units (HU)	Density	Census Blocks	Population	Housing Units (HU)	Density	Percentage Population Change	Percentage HU Change	Density Change
Marysville	279	12,099	4,956	2.44	276	11,910	5,126	2.32	-1.6%	3.4%	-4.8%
	279	12,099	4,956	2.44	276	11,910	5,126	2.32	-1.6%	3.4%	-4.8%

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



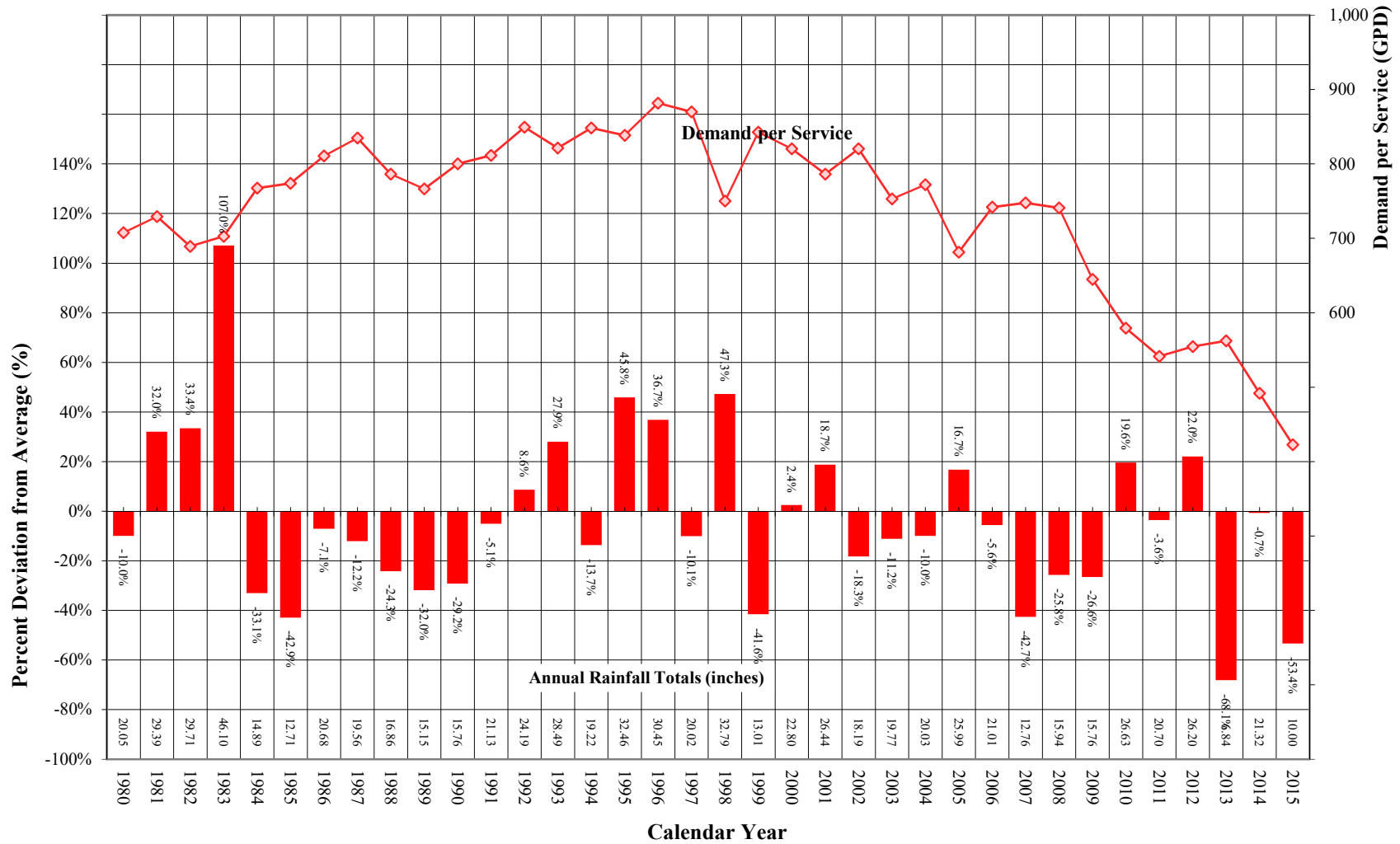
California Water Service Company - Marysville District
Water Supply and Demand Analysis and Projections
Population Estimate

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	12,099	4,956	2.441	352	67	1,995	29.8	2,609
2010	11,910	5,126	2.323	954	128	2,159	16.9	2,013
	-1.6%	3.4%	-4.8%	170.7%	90.7%	8.2%	-43.2%	-22.8%

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	330	65	1,940	29.8	2,652	4,922	2.441	12,016
1996	340	65	1,935	29.8	2,643	4,919	2.441	12,008
1997	341	65	1,938	29.8	2,623	4,902	2.441	11,967
1998	342	66	1,963	29.8	2,618	4,922	2.441	12,017
1999	350	67	1,995	29.8	2,612	4,957	2.441	12,102
2000	352	67	1,995	29.8	2,609	4,956	2.441	12,099
2001	357	67	2,011	30.0	2,611	4,979	2.429	12,097
2002	362	67	2,028	30.3	2,619	5,009	2.418	12,110
2003	398	125	2,044	16.4	2,612	5,054	2.406	12,161
2004	423	127	2,061	16.2	2,591	5,074	2.394	12,147
2005	439	126	2,077	16.5	2,569	5,086	2.382	12,116
2006	455	126	2,093	16.7	2,548	5,097	2.371	12,082
2007	478	125	2,110	16.9	2,519	5,107	2.359	12,045
2008	525	126	2,126	16.9	2,441	5,092	2.347	11,950
2009	662	124	2,143	17.3	2,273	5,078	2.335	11,858
2010	954	128	2,159	16.9	2,013	5,126	2.323	11,910
2011	1,406	129	2,175	16.9	1,576	5,157	2.323	11,982
2012	1,731	132	2,192	16.6	1,250	5,172	2.323	12,017
2013	1,964	133	2,211	16.6	1,020	5,195	2.323	12,069
2014	2,034	133	2,210	16.6	957	5,201	2.323	12,084
2015	2,145	134	2,226	16.6	870	5,241	2.323	12,177
2020	3,032	138	2,297	16.6	0	5,329	2.323	12,382
2025	3,051	143	2,369	16.6	0	5,420	2.323	12,593
2030	3,069	147	2,444	16.6	0	5,513	2.323	12,810
2035	3,088	152	2,521	16.6	0	5,609	2.323	13,033
2040	3,107	156	2,601	16.6	0	5,708	2.323	13,261

Notes: linear extrapolation used to estimated MFR-DU from 2000. Estimate extend until 2012 due to reclassification, afterwards a constant MFR Unit Density is used.

Comparison of Annual Rainfall to Historical Average



California Water Service Company - Marysville District
Water Supply and Demand Analysis and Projections
 Temperature & Rainfall History

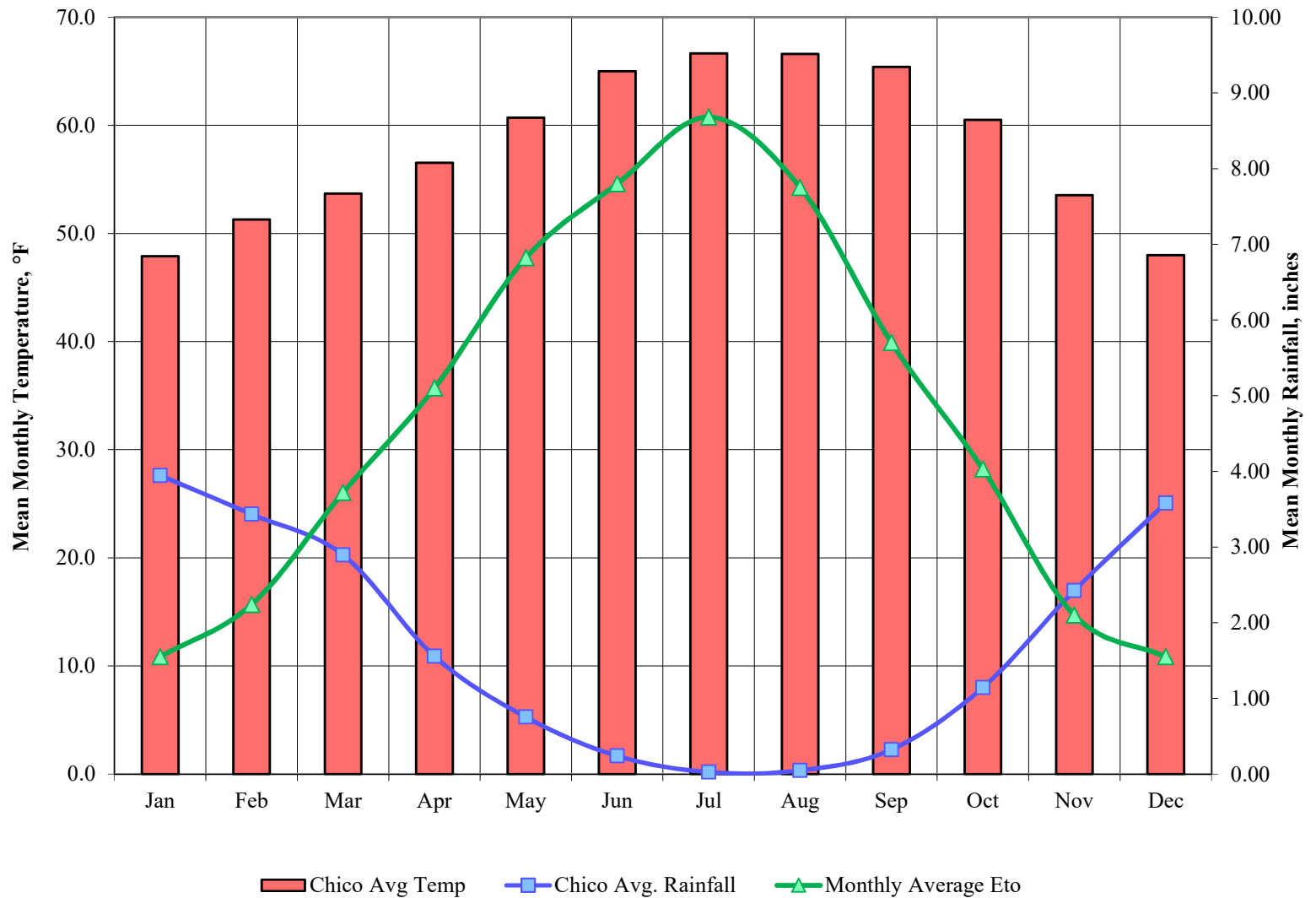
Year	Precipitation		Temperature			Demand per Service (gpd)	Percent of Average Demand
	Annual (in)	Percent Variation	Tmax (°F)	Tmin (°F)	Mean (°F)		
1980	20.05	-10.0%	94.10	38.10	66.1	708	-4.0%
1981	29.39	32.0%	95.10	39.80	67.5	729	-1.1%
1982	29.71	33.4%	92.10	34.70	63.4	689	-6.5%
1983	46.10	107.0%	94.00	38.10	66.1	703	-4.7%
1984	14.89	-33.1%	98.90	38.10	68.5	767	4.1%
1985	12.71	-42.9%	97.90	35.30	66.6	774	5.0%
1986	20.68	-7.1%	95.60	38.20	66.9	811	10.0%
1987	19.56	-12.2%	93.60	36.90	65.3	835	13.2%
1988	16.86	-24.3%	100.60	37.30	69.0	786	6.6%
1989	15.15	-32.0%	96.50	34.30	65.4	766	3.9%
1990	15.76	-29.2%	97.60	31.60	64.6	800	8.5%
1991	21.13	-5.1%	97.50	36.40	67.0	811	10.1%
1992	24.19	8.6%	97.90	36.60	67.3	849	15.2%
1993	28.49	27.9%	94.50	37.60	66.1	821	11.4%
1994	19.22	-13.7%	97.10	36.30	66.7	848	15.1%
1995	32.46	45.8%	93.80	43.70	68.8	838	13.7%
1996	30.45	36.7%	97.50	40.80	69.2	882	19.6%
1997	20.02	-10.1%	98.00	39.30	68.7	870	18.0%
1998	32.79	47.3%	97.20	34.00	65.6	750	1.7%
1999	13.01	-41.6%	91.40	36.60	64.0	843	14.3%
2000	22.80	2.4%	93.70	36.90	65.3	820	11.3%
2001	26.44	18.7%	94.40	34.80	64.6	786	6.6%
2002	18.19	-18.3%	96.80	38.10	67.5	820	11.3%
2003	19.77	-11.2%	99.00	38.80	68.9	753	2.1%
2004	20.03	-10.0%	94.70	38.50	66.6	772	4.7%
2005	25.99	16.7%	99.20	39.20	69.2	681	-7.6%
2006	21.01	-5.6%	99.30	37.10	68.2	742	0.7%
2007	12.76	-42.7%	94.80	30.80	62.8	748	1.4%
2008	15.94	-25.8%	96.40	34.90	65.7	741	0.5%
2009	15.76	-26.6%	96.50	35.50	66.0	645	-12.5%
2010	26.63	19.6%	94.80	41.80	68.3	579	-21.4%
2011	20.70	-3.6%	93.60	32.70	63.2	541	-26.6%
2012	26.20	22.0%	97.30	35.50	66.4	554	-24.8%
2013	6.84	-68.1%	97.50	30.70	64.1	562	-23.8%
2014	21.32	-0.7%	96.60	35.50	66.1	492	-33.3%
2015	10.00	-53.4%	94.30	37.60	66.0	423	-42.7%
2016							
2017							
2018							
2019							
2020							

Precipitation (1895 - present)						Monthly Average Eto
	Mean	High	Year	Low	Year	
	in.	in.	-	in.	-	
Jan	3.95	13.02	1911	0.03	2007	1.55
Feb	3.43	10.11	1998	0.00	1953	2.24
Mar	2.90	11.14	1991	0.00	2007	3.72
Apr	1.56	5.37	1896	0.00	1909	5.10
May	0.75	3.81	1998	0.00	1918	6.82
Jun	0.24	1.75	1995	0.00	1957	7.80
Jul	0.03	1.92	1974	0.00	1965	8.68
Aug	0.05	0.99	1965	0.00	1957	7.75
Sep	0.32	3.49	1918	0.00	1902	5.70
Oct	1.14	9.38	1962	0.00	1905	4.03
Nov	2.42	7.36	1926	0.00	1929	2.10
Dec	3.58	13.80	1983	0.00	1989	1.55
Annual	20.37	46.10	1983	6.84	2013	57.04

Temperature (1895 - present)			
	Tmax	Tmin	Mean
	°F	°F	°F
Jan	57.3	38.5	47.9
Feb	61.2	41.4	51.3
Mar	64.3	43.1	53.7
Apr	68.4	44.7	56.6
May	72.9	48.5	60.7
Jun	77.4	52.6	65.0
Jul	78.4	54.9	66.7
Aug	78.5	54.7	66.6
Sep	78.2	52.6	65.4
Oct	73.0	48.0	60.5
Nov	64.4	42.7	53.6
Dec	57.8	38.2	48.0
Annual	69.3	46.7	58.0

- 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 14
- 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

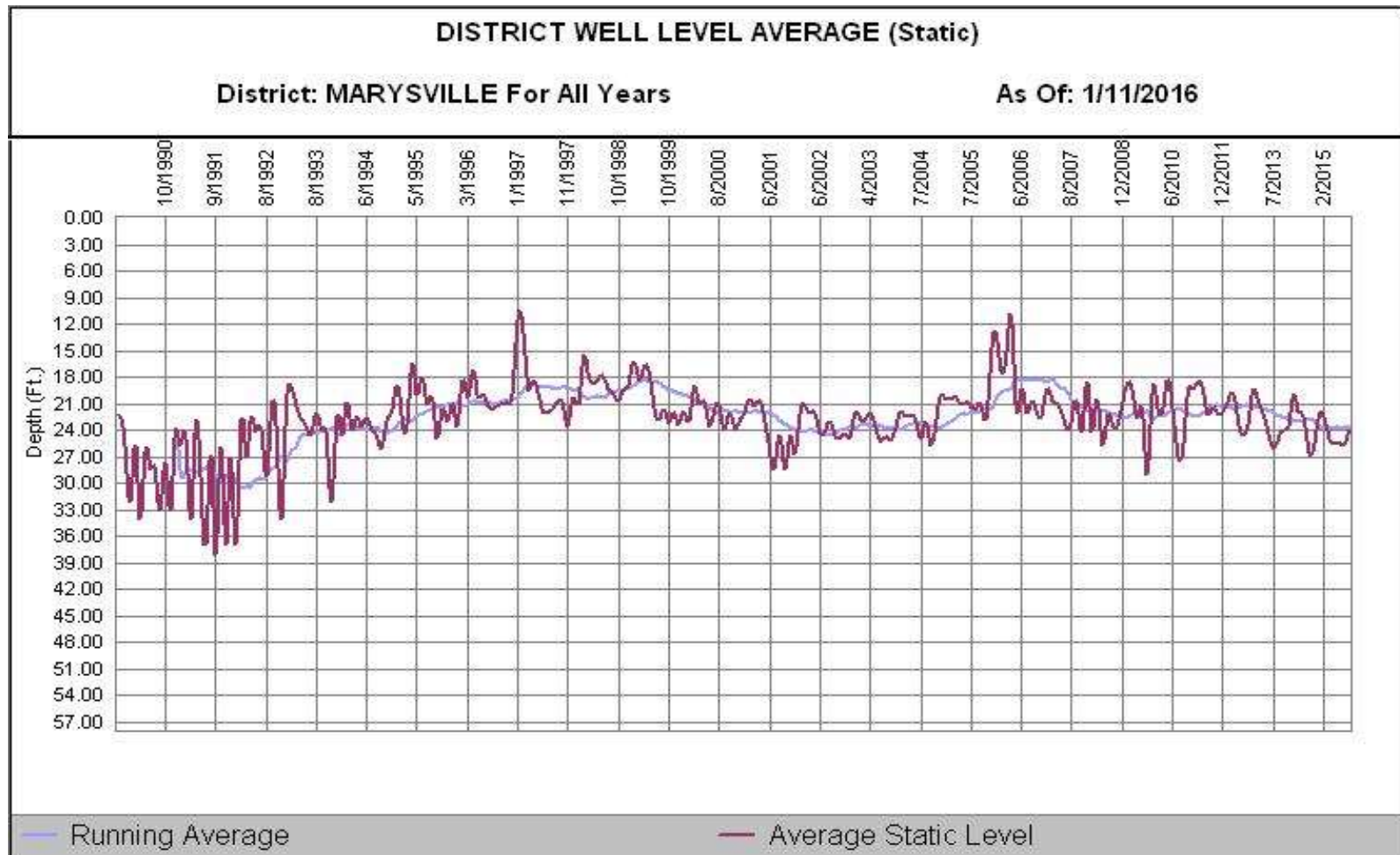
Average Monthly Temperature, Rainfall, and Monthly Eto

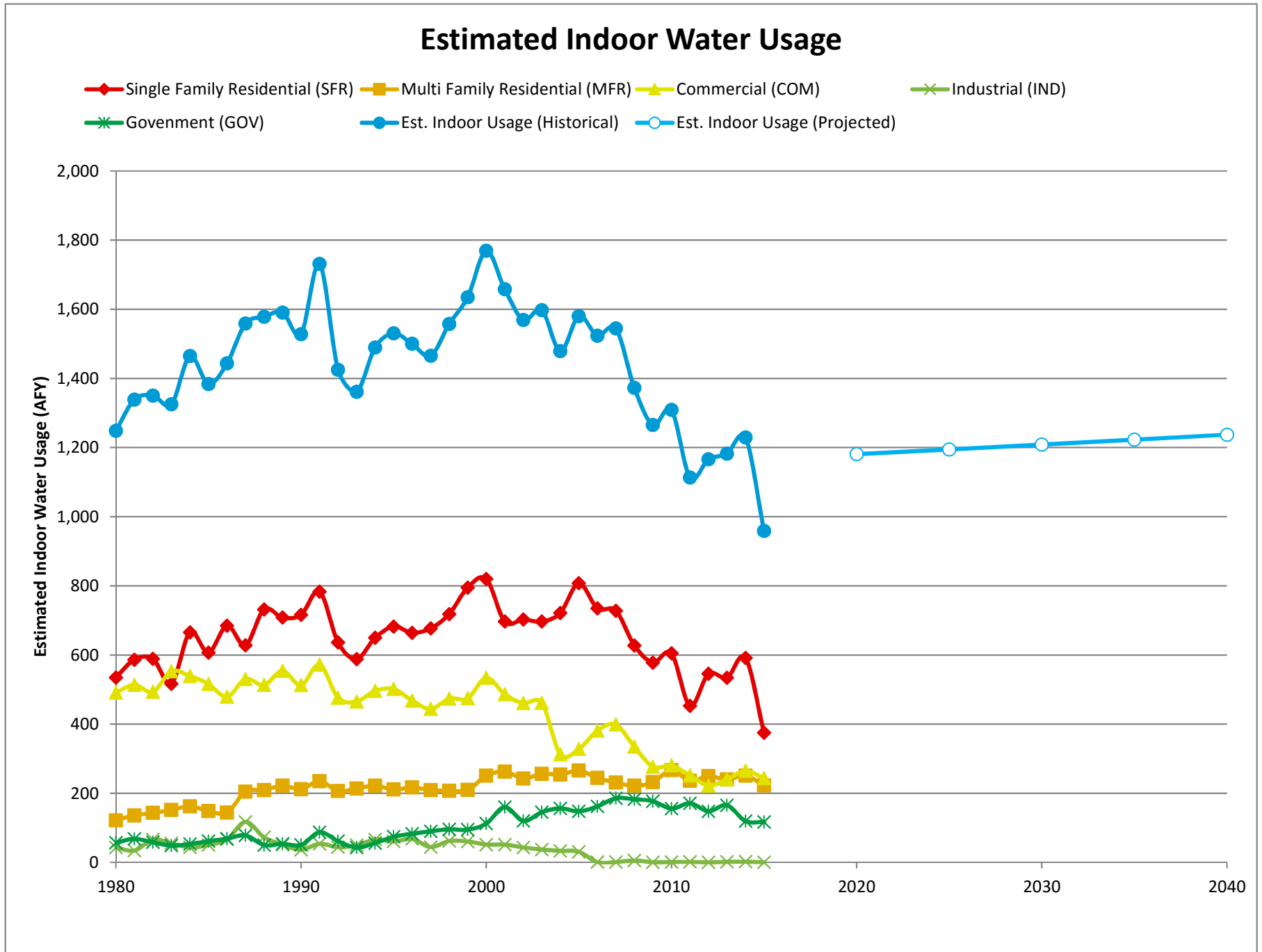


California Water Service Company - Marysville District Water Supply and Demand Analysis and Projections

Worksheet 14

Groundwater Production Facilities





California Water Service Company - Marysville District

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	GPD/Serv	%
1980	1,780	44	0.186	491	535	166	35%	4,911	122	2,296	60%	19,813	491	704	72%
1981	1,892	47	0.201	539	586	179	38%	5,486	136	2,530	63%	20,722	514	732	72%
1982	1,843	46	0.201	543	589	179	39%	5,778	143	2,588	69%	19,910	494	690	74%
1983	1,695	42	0.176	475	517	157	34%	6,120	152	2,709	69%	22,293	553	779	81%
1984	2,289	57	0.225	609	666	201	39%	6,547	162	2,903	69%	21,755	539	760	75%
1985	2,063	51	0.204	555	607	182	35%	5,992	149	2,596	66%	20,812	516	738	73%
1986	2,385	59	0.229	626	685	204	38%	5,816	144	2,229	53%	19,326	479	679	66%
1987	2,298	57	0.210	571	628	187	34%	8,250	205	3,104	71%	21,399	531	743	72%
1988	2,821	70	0.244	662	732	218	42%	8,439	209	3,021	70%	20,700	513	719	70%
1989	2,764	69	0.237	640	708	211	42%	8,964	222	3,056	75%	22,355	554	778	77%
1990	2,885	72	0.239	645	716	213	40%	8,549	212	2,911	70%	20,674	513	718	71%
1991	3,240	80	0.261	703	783	233	41%	9,484	235	3,230	83%	23,065	572	798	81%
1992	2,686	67	0.212	570	636	190	32%	8,321	206	2,826	69%	19,218	476	670	67%
1993	2,555	63	0.196	525	588	175	31%	8,624	214	2,937	68%	18,769	465	658	65%
1994	2,841	70	0.217	579	650	194	33%	8,944	222	3,038	74%	20,006	496	700	68%
1995	3,045	75	0.229	607	682	204	35%	8,505	211	2,892	69%	20,232	502	717	71%
1996	3,057	76	0.223	589	664	199	32%	8,742	217	2,981	68%	18,874	468	673	64%
1997	3,140	78	0.228	599	677	204	34%	8,445	209	2,876	65%	17,914	444	647	63%
1998	3,346	83	0.243	636	718	217	44%	8,367	207	2,813	72%	19,103	474	696	71%
1999	3,788	94	0.268	701	795	240	42%	8,452	210	2,796	66%	19,150	475	699	66%
2000	3,935	98	0.277	722	820	247	46%	10,115	251	3,346	75%	21,539	534	778	73%
2001	3,382	84	0.235	613	697	210	41%	10,597	263	3,501	76%	19,623	487	715	74%
2002	3,440	85	0.236	617	703	210	39%	9,794	243	3,236	70%	18,574	461	675	68%
2003	3,715	92	0.231	605	697	207	42%	10,337	256	1,835	66%	18,610	461	768	85%
2004	4,082	101	0.239	620	722	214	42%	10,249	254	1,785	64%	12,613	313	531	61%
2005	4,757	118	0.268	690	808	240	55%	10,711	266	1,883	74%	13,227	328	554	64%
2006	4,491	111	0.245	624	735	219	44%	9,862	245	1,738	67%	15,368	381	644	75%
2007	4,684	116	0.243	612	728	217	44%	9,310	231	1,651	65%	16,082	399	671	73%
2008	4,478	111	0.212	517	628	189	41%	8,941	222	1,577	62%	13,496	335	571	60%
2009	5,258	130	0.197	448	578	176	43%	9,369	232	1,671	68%	11,151	276	488	65%
2010	7,841	194	0.204	410	605	182	52%	10,765	267	1,868	80%	11,302	280	513	70%
2011	8,615	214	0.152	239	453	136	42%	9,515	236	1,634	73%	10,157	252	460	69%
2012	12,776	317	0.183	229	545	163	51%	10,065	250	1,690	71%	8,965	222	409	59%
2013	14,186	352	0.179	183	534	160	48%	9,679	240	1,611	73%	9,705	241	443	60%
2014	16,223	402	0.198	189	592	177	62%	10,122	251	1,686	83%	10,679	265	491	71%
2015	15,120	375			375			8,976	223			9,823	244		
2016					537	159			250	1,655			244	451	
2017					538	159			251	1,655			245	451	
2018					538	159			253	1,655			245	451	
2019					539	159			255	1,655			246	451	
2020					540	159			256	1,655			246	451	
2025					543	159			264	1,655			249	451	
2030					546	159			273	1,655			251	451	
2035					549	159			281	1,655			253	451	
2040					553	159			290	1,655			256	451	

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

California Water Service Company - Marysville District

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	1,749	43	12,904	77%	2,309	57	903	32%
1981	1,389	34	10,248	34%	2,745	68	1,088	39%
1982	2,672	66	19,714	80%	2,351	58	917	38%
1983	2,227	55	16,431	78%	1,971	49	784	30%
1984	1,764	44	11,156	62%	2,150	53	828	27%
1985	2,049	51	11,338	54%	2,478	61	936	32%
1986	2,697	67	14,924	60%	2,767	69	1,059	34%
1987	4,732	117	26,185	91%	3,152	78	1,231	36%
1988	2,945	73	16,296	86%	2,033	50	804	26%
1989	2,084	52	11,532	65%	2,168	54	839	30%
1990	1,482	37	8,201	42%	2,041	51	779	26%
1991	2,167	54	11,746	60%	3,524	87	1,366	51%
1992	1,787	44	9,888	47%	2,481	62	885	34%
1993	2,025	50	11,205	51%	1,744	43	609	27%
1994	2,658	66	14,708	71%	2,260	56	784	31%
1995	2,452	61	18,091	66%	3,002	74	1,037	40%
1996	2,738	68	20,201	77%	3,340	83	1,120	40%
1997	1,798	45	13,266	73%	3,636	90	1,203	36%
1998	2,504	62	18,475	101%	3,868	96	1,278	47%
1999	2,445	61	18,039	99%	3,833	95	1,258	41%
2000	2,085	52	12,307	81%	4,537	112	1,491	47%
2001	2,083	52	11,526	99%	6,462	160	1,980	61%
2002	1,749	43	9,678	86%	4,839	120	1,496	42%
2003	1,506	37	8,334	77%	5,861	145	1,773	53%
2004	1,355	34	7,498	75%	6,316	157	1,969	52%
2005	1,253	31	8,320	149%	5,968	148	1,894	54%
2006	38	1	288	32%	6,532	162	2,036	54%
2007	48	1	266	23%	7,495	186	2,419	58%
2008	227	6	1,256	164%	7,370	183	2,308	50%
2009	35	1	194	35%	7,147	177	2,456	57%
2010	46	1	509	22%	6,286	156	2,638	56%
2011	65	2	1,439	128%	6,905	171	3,378	64%
2012	13	0	288	23%	5,977	148	2,775	55%
2013	67	2	890	68%	6,678	166	3,117	63%
2014	89	2	739	126%	4,821	120	2,496	54%
2015	24	1			4,729	117		
2016		0	839			138	2,942	
2017		0	839			138	2,942	
2018		0	839			138	2,942	
2019		0	839			138	2,942	
2020		1	839			138	2,942	
2025		1	839			138	2,942	
2030		1	839			138	2,942	
2035		1	839			138	2,942	
2040		1	839			138	2,942	

Estimated Indoor/Outdoor Usage			
Est. Indoor Usage	Est. Outdoor Usage	Est. Indoor Usage	Est. Outdoor Usage
AFY	AFY	%	%
1,248	1,608	44%	56%
1,339	1,647	45%	55%
1,350	1,489	48%	52%
1,325	1,569	46%	54%
1,464	1,714	46%	54%
1,383	1,832	43%	57%
1,444	1,956	42%	58%
1,558	1,949	44%	56%
1,578	1,728	48%	52%
1,590	1,634	49%	51%
1,528	1,844	45%	55%
1,731	1,694	51%	49%
1,425	2,157	40%	60%
1,361	2,105	39%	61%
1,489	2,078	42%	58%
1,530	1,983	44%	56%
1,500	2,194	41%	59%
1,465	2,155	40%	60%
1,558	1,555	50%	50%
1,635	1,866	47%	53%
1,769	1,645	52%	48%
1,658	1,619	51%	49%
1,569	1,862	46%	54%
1,597	1,565	51%	49%
1,479	1,759	46%	54%
1,580	1,273	55%	45%
1,524	1,580	49%	51%
1,545	1,578	49%	51%
1,372	1,693	45%	55%
1,265	1,365	48%	52%
1,309	1,056	55%	45%
1,114	1,100	50%	50%
1,166	1,101	51%	49%
1,182	1,119	51%	49%
1,229	784	61%	39%
959	783	55%	45%
1,169	1,461	44%	56%
1,172	1,463	44%	56%
1,174	1,465	44%	56%
1,177	1,468	45%	55%
1,181	1,470	45%	55%
1,194	1,482	45%	55%
1,208	1,495	45%	55%
1,223	1,508	45%	55%
1,237	1,521	45%	55%

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