CITY OF WADSWORTH
SINCE 1814

Water Treatment Plant

Annual Report 2012

Dana Moore, Plant Supervisor

Wadsworth Water Treatment Plant Annual Report

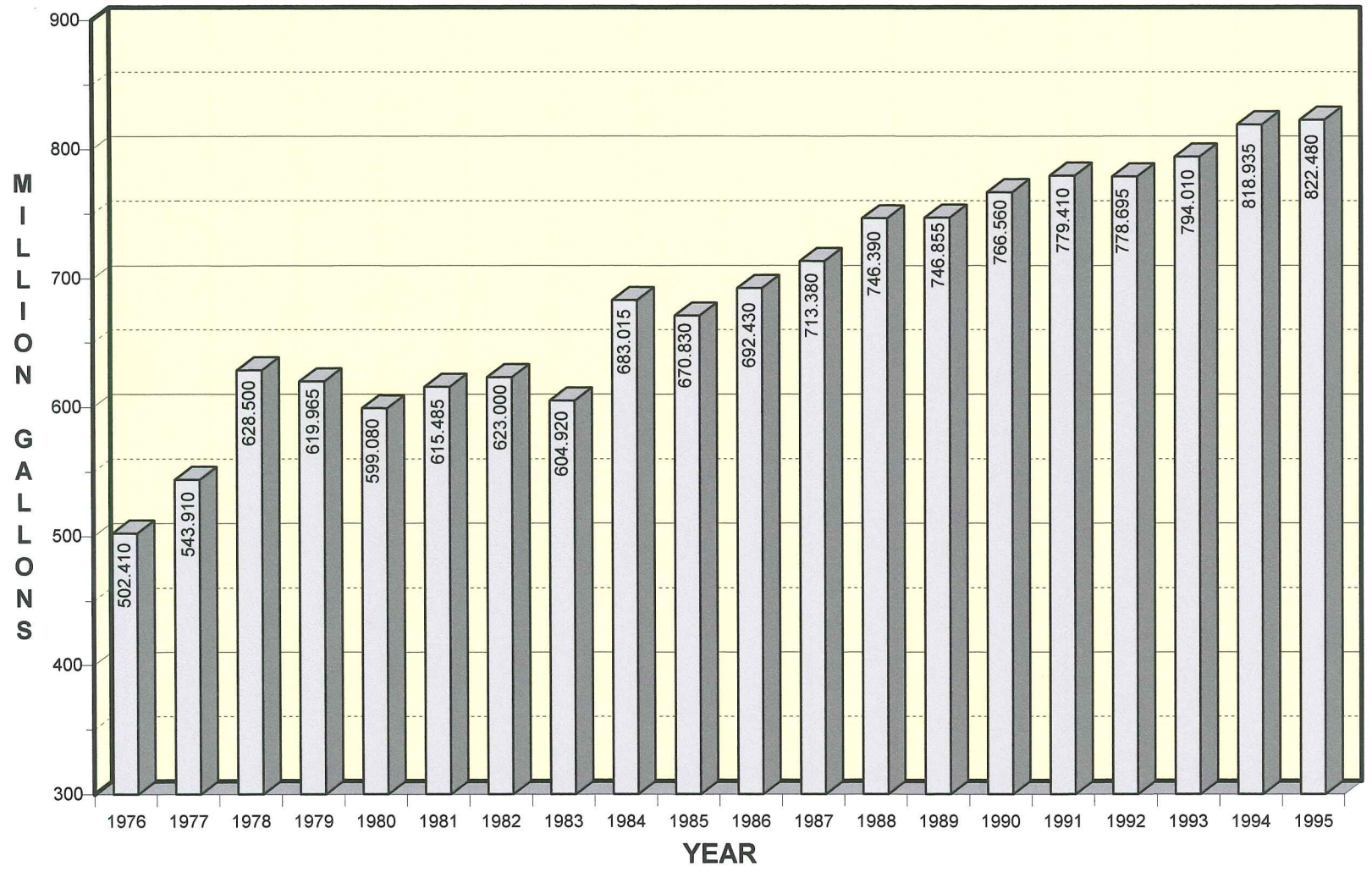
Table of Contents

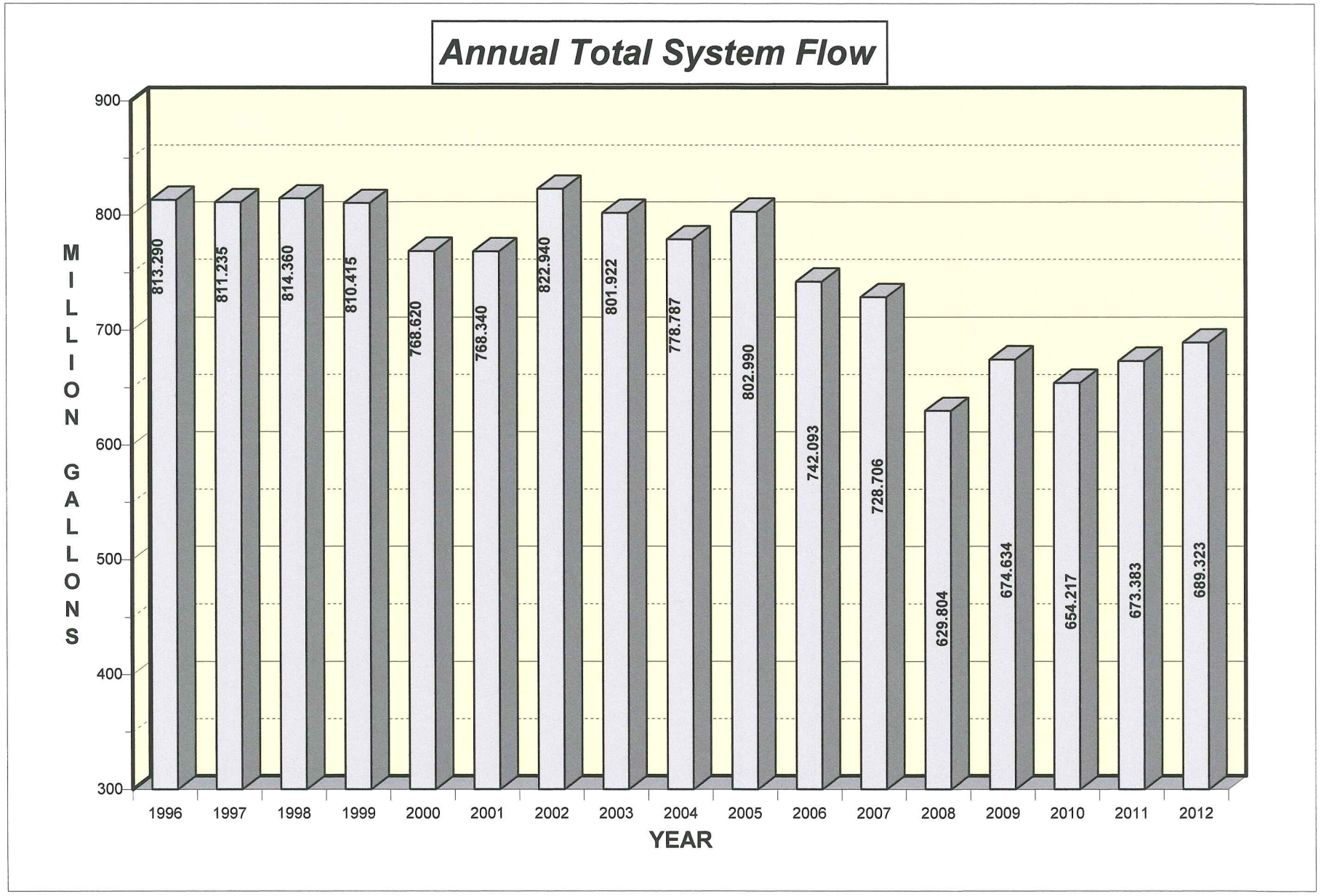
Page Number	
1	List of Employees
2	Annual Total System Flow Graph
3	Annual Average Daily Flow Chart
4	Annual Maximum Daily Flow Chart
5	Total Annual Output Flow Comparisons
6	High System Annual Output Flow Comparisons
7	Low System Annual Output Flow Comparisons
8	2012 Monthly Flow Charts
9	Well Information
10	Plant and Well Maintenance Expense Summary
11	Water Quality Data Sheet

Wadsworth Water Treatment Plant Employees

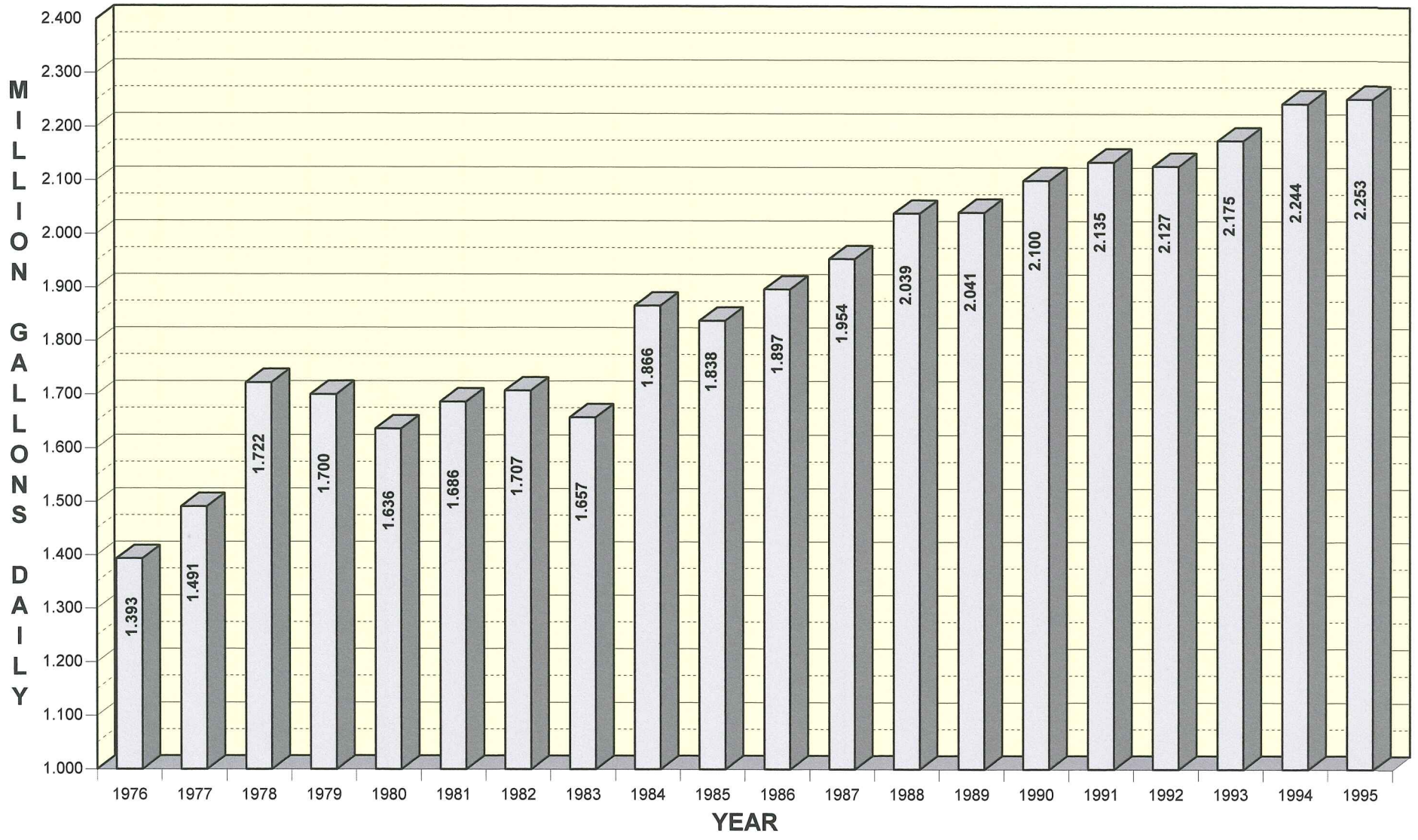
Employee	Date Of Hire	Years Of Service	Certification Held	Position
Dana Moore	10/4/1995	17	W-3	Supervisor
Adam Coates	8/15/2005	7	W-3	Lab Technician
Bobby Devaney	2/19/1990	22	W-3	Plant Operator
Rebecca Fox	12/10/2012	0	W-3	Plant Operator
Erich Ross	1/3/2013	0		Operator Trainee
Jim Gualtier	3/24/2008	4		Maintenance

Annual Total System Flow

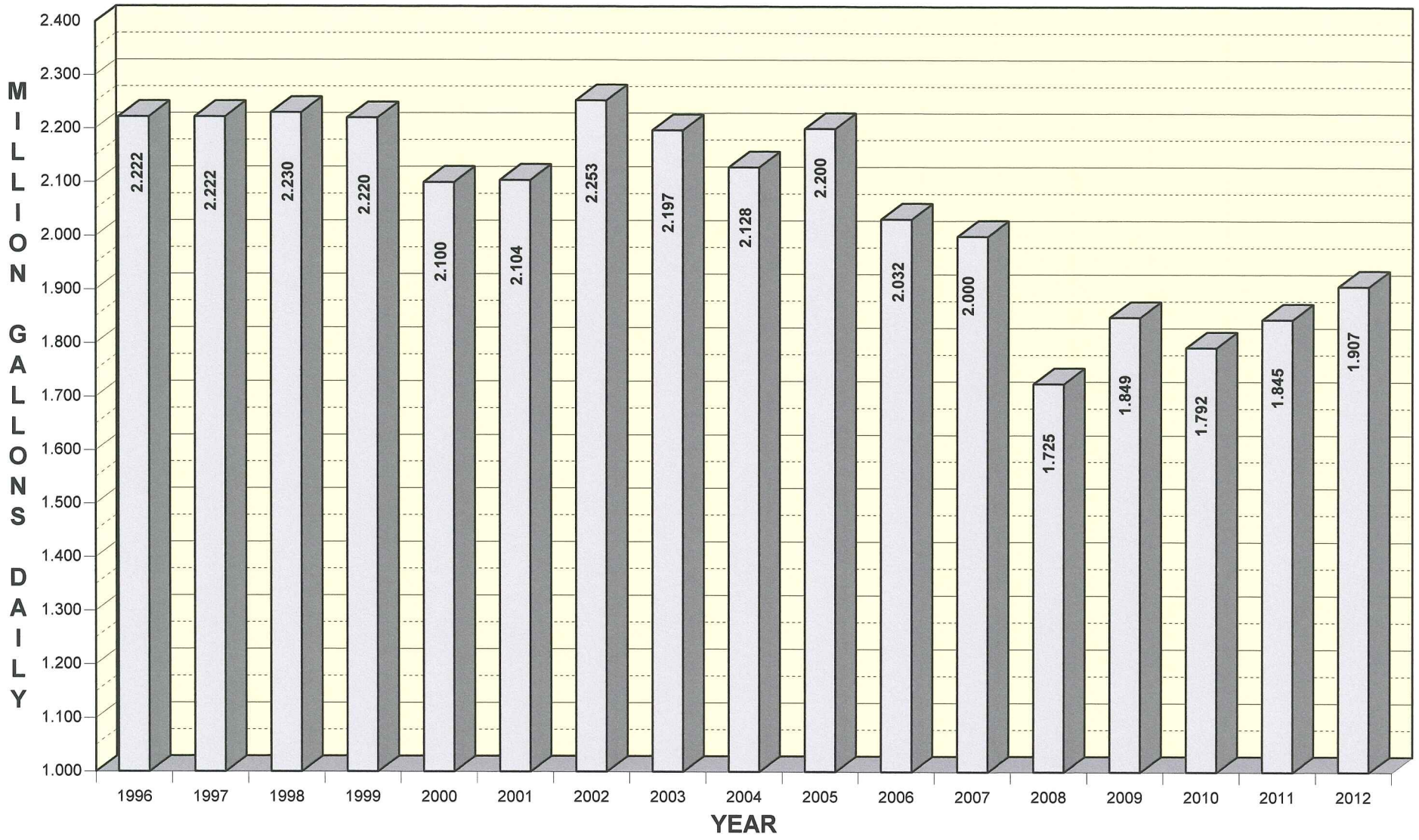



Annual Total System Flow
MILLION GALLONS
900
800
700
600
500
400
300
813.290
811.235
814.360
810.415
768.620
768.340
822.940
801.922
778.787
802.990
742.093
728.706
629.804
674.634
654.217
673.383
689.323
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
YEAR

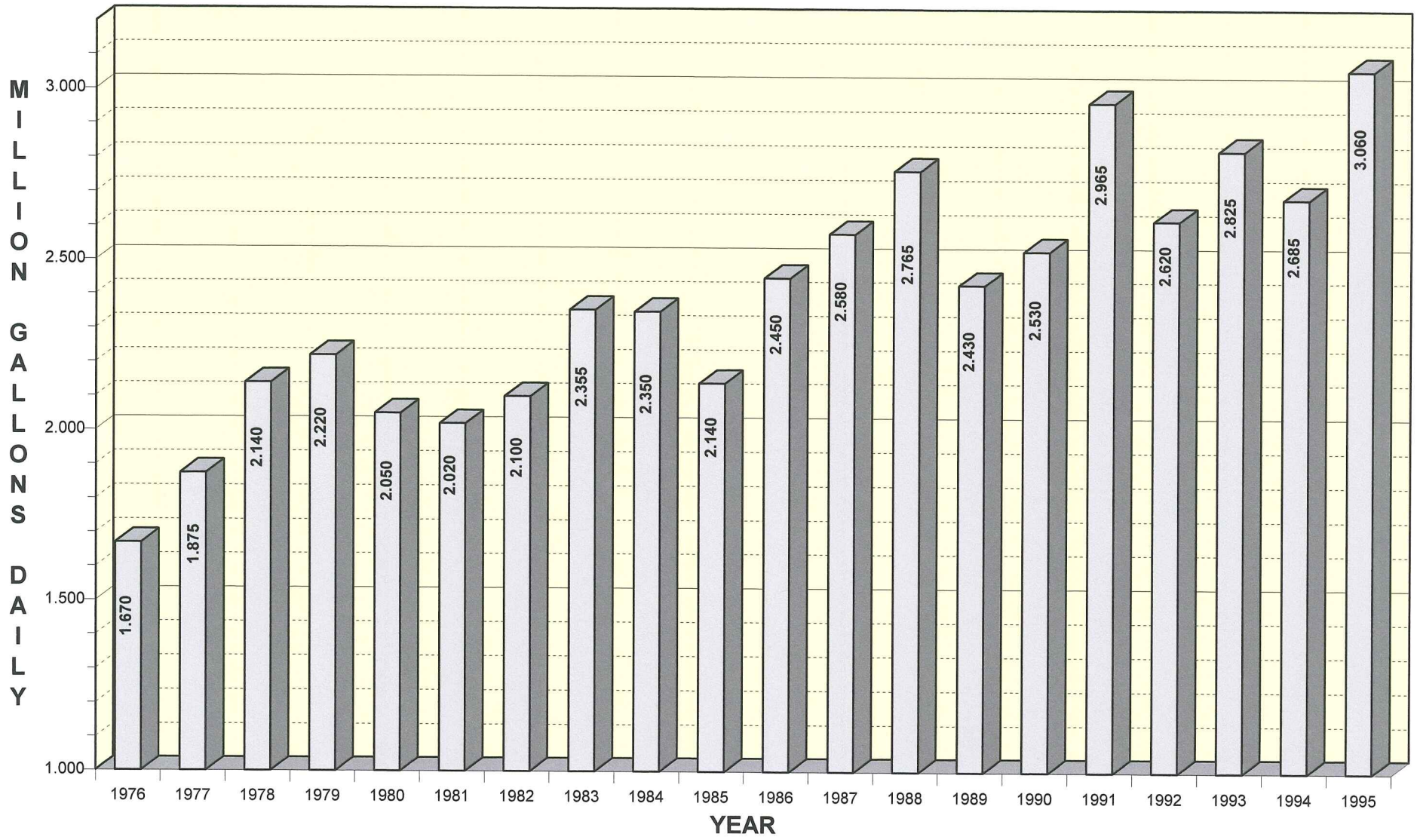
Annual Average Daily Flow Rates

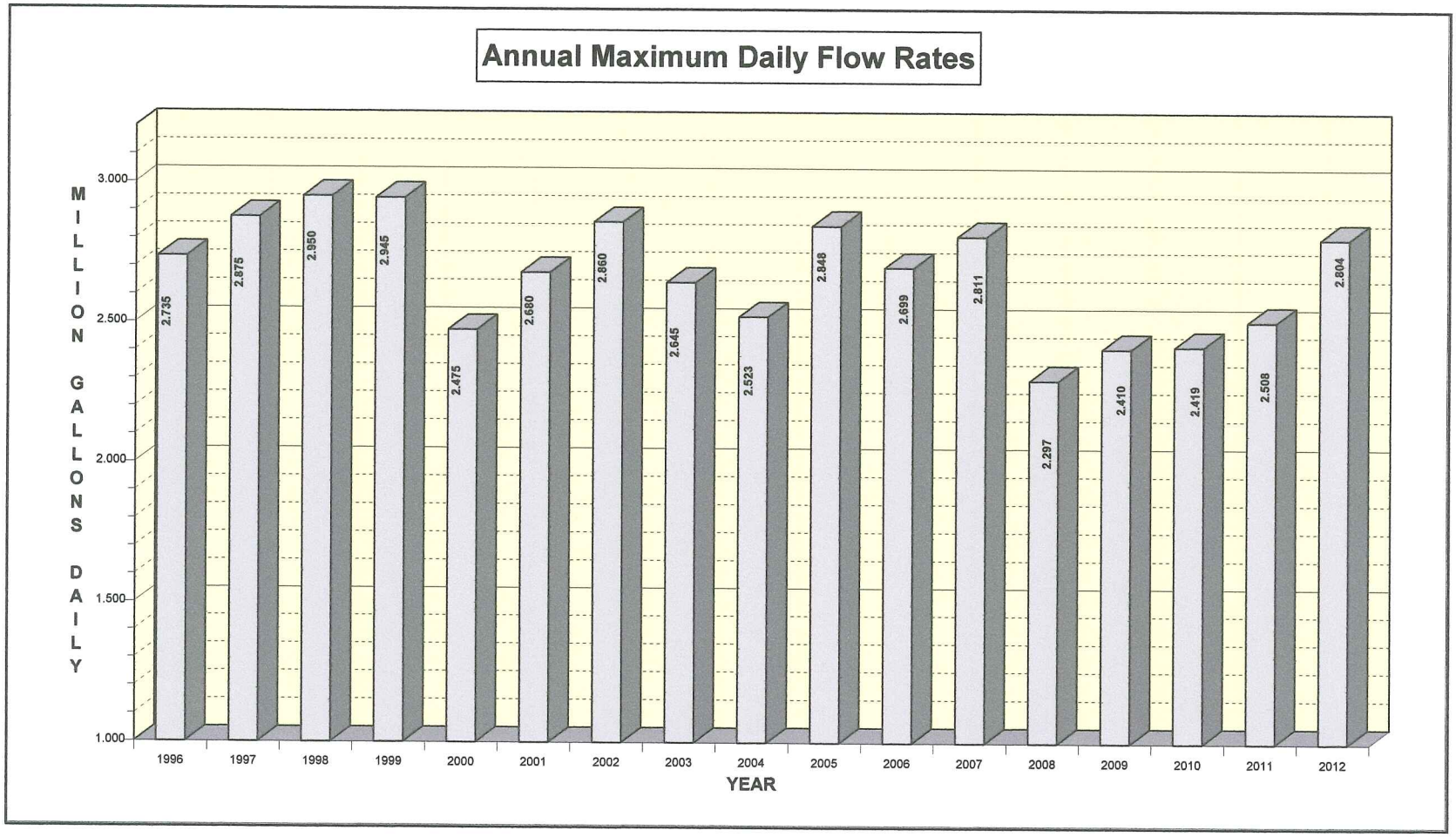


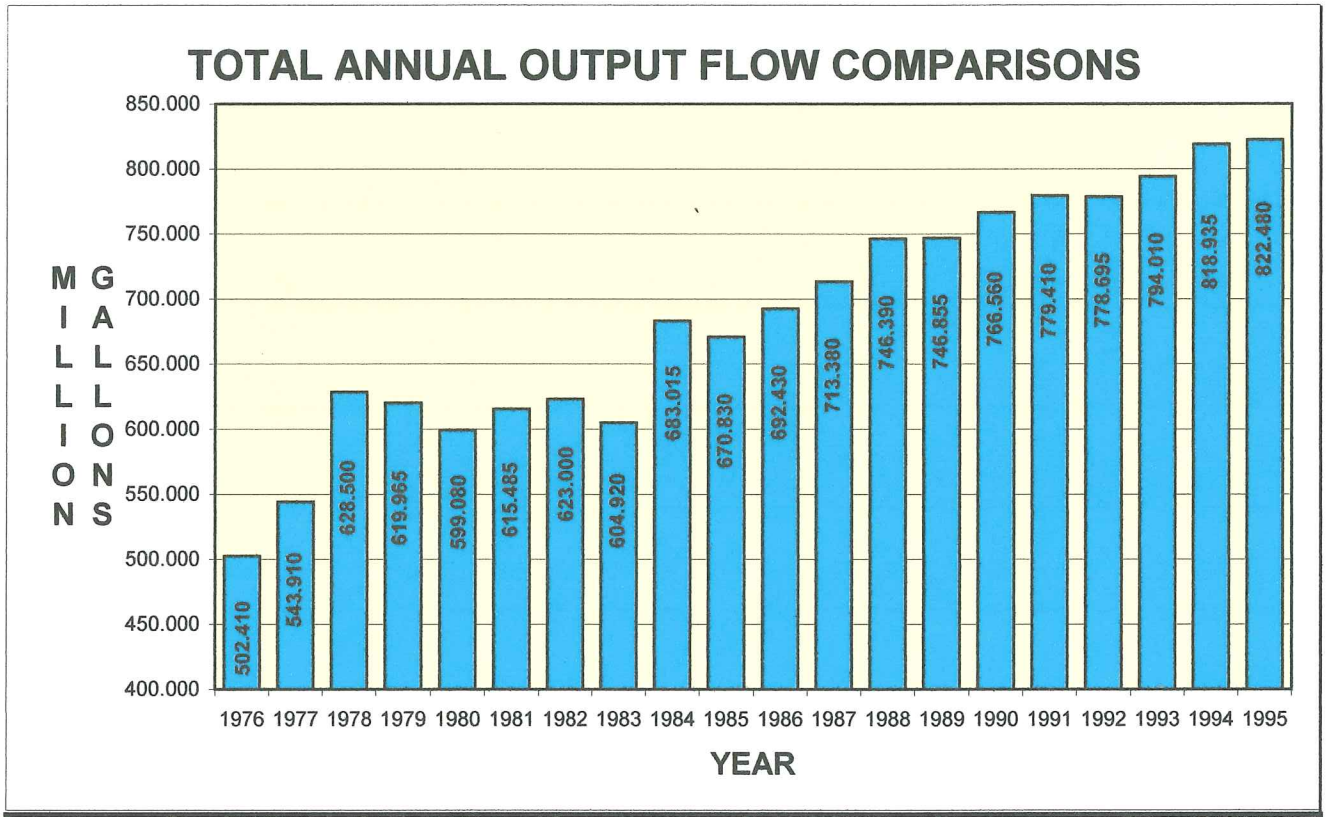
Annual Average Daily Flow Rates



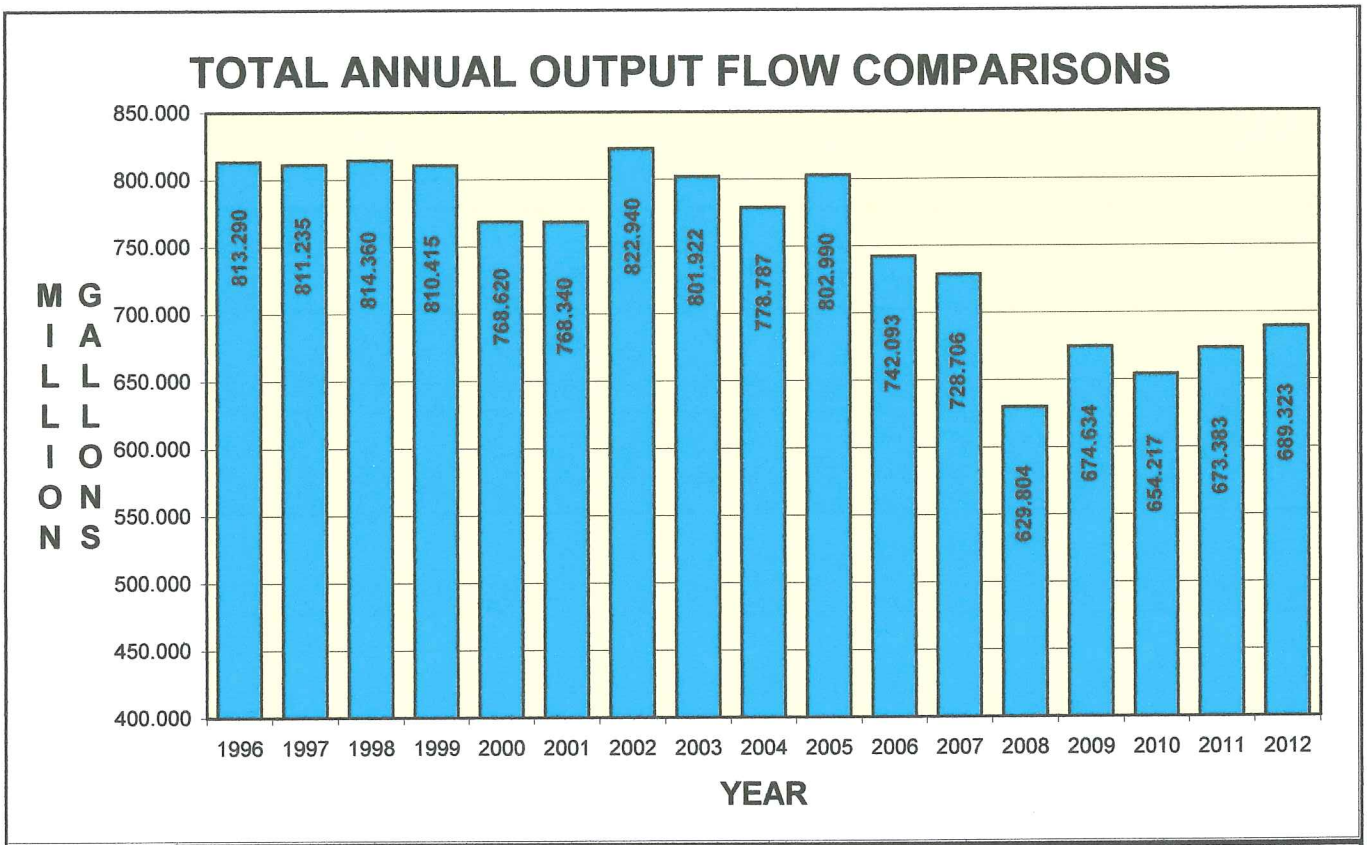
Annual Maximum Daily Flow Rates



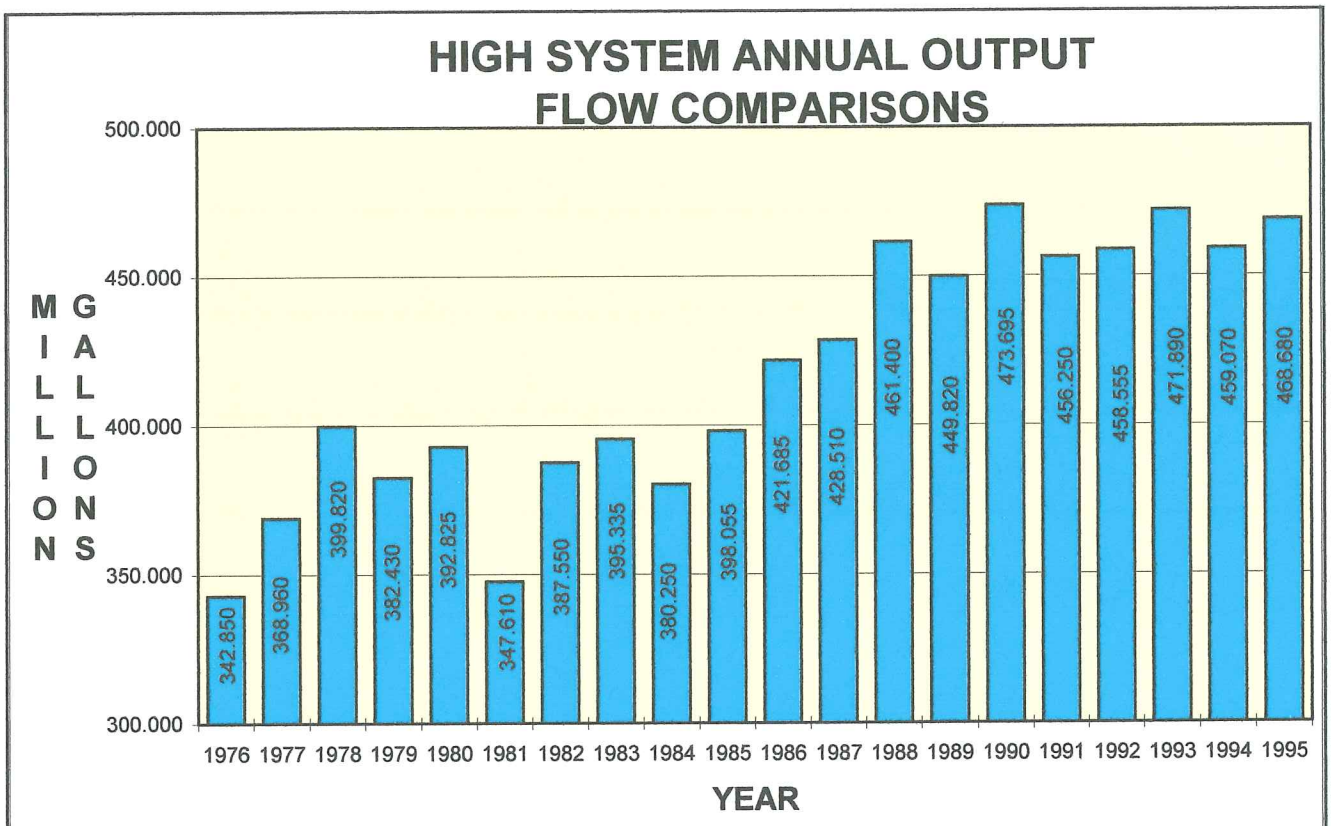

Annual Maximum Daily Flow Rates
MILLION GALLONS DAILY
3.000
2.500
2.000
1.500
1.000
2.735
2.875
2.950
2.945
2.475
2.680
2.860
2.645
2.523
2.848
2.699
2.811
2.297
2.410
2.419
2.508
2.804
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
YEAR



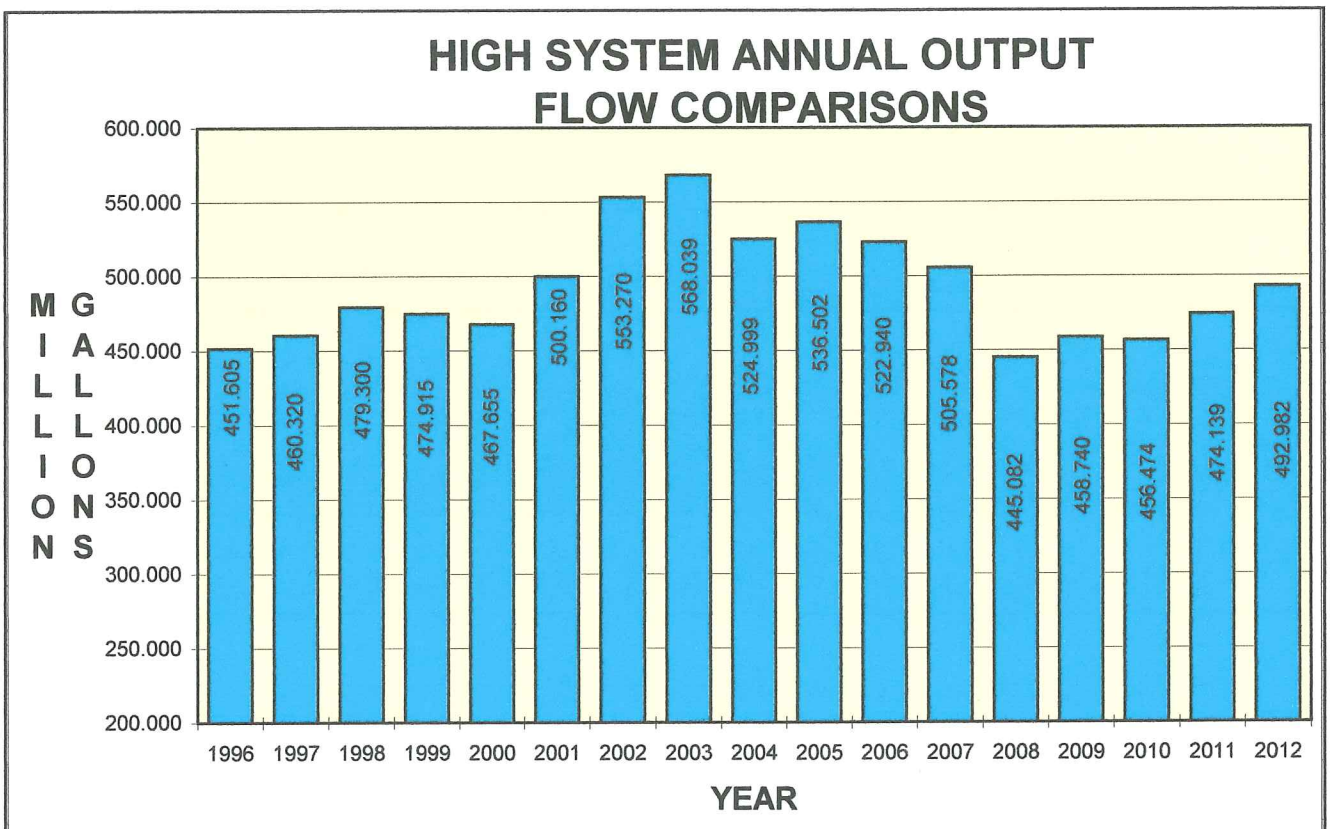
	ANNUAL TOTAL	DAILY MAX.	DAILY MIN.	DAILY AVE.	AVERAGE % INCREASE	MAXIMUM % OF CAPACITY
1976	502.410	1.670	1.115	1.393		55.67%
1977	543.910	1.875	1.155	1.491	7.04%	62.50%
1978	628.500	2.140	1.335	1.722	15.49%	71.33%
1979	619.965	2.220	1.360	1.700	-1.28%	74.00%
1980	599.080	2.050	1.250	1.636	-3.76%	68.33%
1981	615.485	2.020	1.300	1.686	3.06%	67.33%
1982	623.000	2.100	1.350	1.707	1.25%	70.00%
1983	604.920	2.355	1.305	1.657	-2.93%	78.50%
1984	683.015	2.350	1.330	1.866	12.61%	78.33%
1985	670.830	2.140	1.440	1.838	-1.50%	71.33%
1986	692.430	2.450	1.440	1.897	3.21%	81.67%
1987	713.380	2.580	1.465	1.954	3.00%	86.00%
1988	746.390	2.765	1.640	2.039	4.35%	92.17%
1989	746.855	2.430	1.635	2.041	0.10%	81.00%
1990	766.560	2.530	1.655	2.100	2.89%	84.33%
1991	779.410	2.965	1.715	2.135	1.67%	98.83%
1992	778.695	2.620	1.750	2.127	-0.37%	87.33%
1993	794.010	2.825	1.590	2.175	2.26%	94.17%
1994	818.935	2.685	1.860	2.244	3.17%	89.50%
1995	822.480	3.060	1.860	2.253	0.40%	102.00%
				AVERAGE	**2.67%**	



	ANNUAL TOTAL	DAILY MAX.	DAILY MIN.	DAILY AVE.	AVERAGE % INCREASE	MAXIMUM % OF CAPACITY
1996	813.290	2.735	1.790	2.222	-1.38%	91.17%
1997	811.235	2.875	1.820	2.222	0.00%	95.83%
1998	814.360	2.950	1.730	2.230	0.36%	98.33%
1999	810.415	2.945	1.790	2.220	-0.45%	98.17%
2000	768.620	2.475	1.650	2.100	-5.41%	82.50%
2001	768.340	2.680	1.700	2.104	0.19%	89.33%
2002	822.940	2.860	1.855	2.253	7.08%	95.33%
2003	801.922	2.645	1.700	2.197	-2.49%	88.17%
2004	778.787	2.523	1.823	2.128	-3.14%	84.10%
2005	802.990	2.848	1.719	2.200	3.38%	94.93%
2006	742.093	2.699	1.262	2.032	-7.64%	89.97%
2007	728.706	2.811	1.499	2.000	-1.57%	93.70%
2008	629.804	2.297	1.115	1.725	-13.75%	76.57%
2009	674.634	2.410	1.454	1.849	7.17%	80.33%
2010	654.217	2.419	1.374	1.792	-3.05%	80.63%
2011	673.383	2.508	1.309	1.845	2.83%	83.60%
2012	689.323	2.804	1.387	1.907	3.47%	93.47%
				AVERAGE	-1.12%	

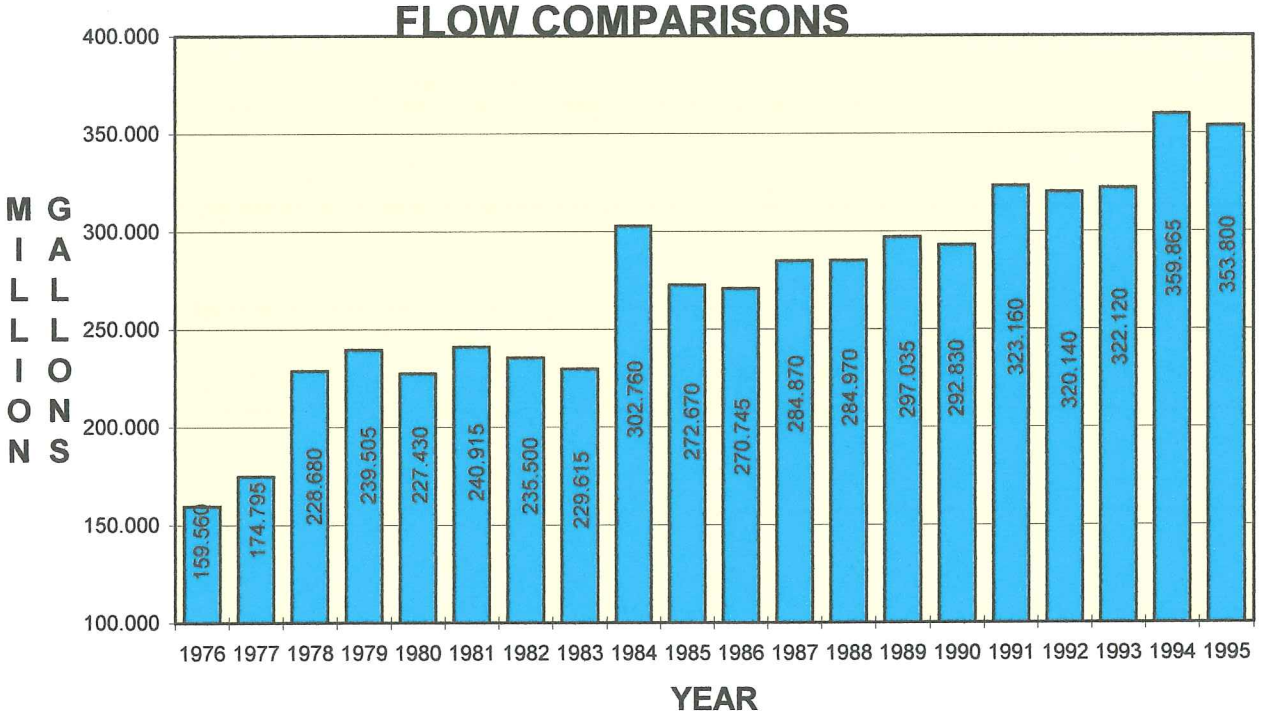


	ANNUAL TOTAL	DAILY MAX.	DAILY MIN.	DAILY AVE.	AVERAGE % INCREASE
1976	342.850	1.150	0.770	0.939	
1977	368.960	1.310	0.865	1.011	7.67%
1978	399.820	1.460	0.890	1.095	8.31%
1979	382.430	1.450	0.890	1.049	-4.20%
1980	392.825	1.380	0.790	1.021	-2.67%
1981	347.610	1.320	0.865	1.026	0.49%
1982	387.550	1.280	0.760	1.061	3.41%
1983	395.335	1.400	0.840	1.028	-3.11%
1984	380.250	1.480	0.825	1.039	1.07%
1985	398.055	1.395	0.930	1.090	4.91%
1986	421.685	1.400	0.895	1.155	5.96%
1987	428.510	1.620	0.905	1.174	1.65%
1988	461.400	1.805	0.945	1.260	7.33%
1989	449.820	1.530	0.725	1.232	-2.22%
1990	473.695	1.665	1.010	1.298	5.36%
1991	456.250	1.905	0.975	1.249	-3.78%
1992	458.555	1.645	0.995	1.253	0.32%
1993	471.890	1.780	0.990	1.292	3.11%
1994	459.070	1.610	0.985	1.258	-2.63%
1995	468.680	1.915	1.020	1.283	1.99%
				AVERAGE	1.73%



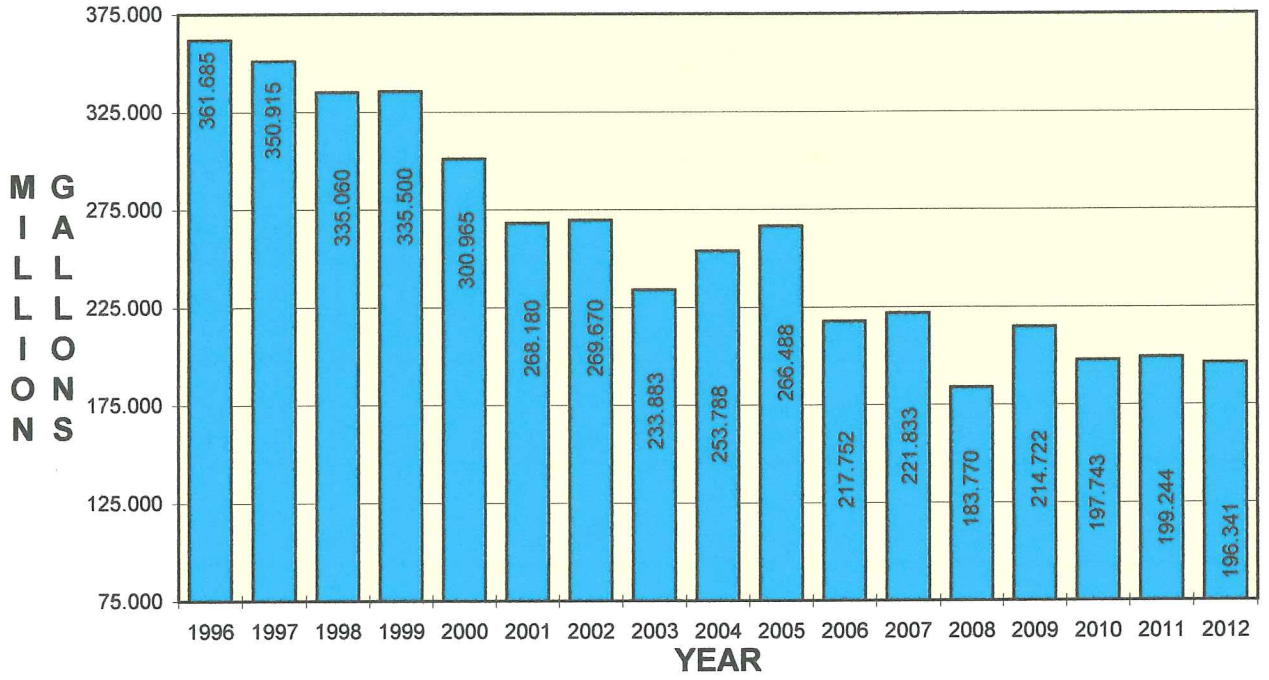
	ANNUAL TOTAL	DAILY MAX.	DAILY MIN.	DAILY AVE.	AVERAGE % INCREASE
1996	451.605	1.560	1.015	1.234	-3.82%
1997	460.320	1.615	1.050	1.261	2.19%
1998	479.300	1.755	1.015	1.313	4.12%
1999	474.915	1.765	1.060	1.301	-0.91%
2000	467.655	1.640	0.975	1.278	-1.77%
2001	500.160	1.755	1.125	1.369	7.12%
2002	553.270	2.025	1.180	1.515	10.66%
2003	568.039	1.927	1.070	1.555	2.64%
2004	524.999	1.715	1.192	1.435	-7.72%
2005	536.502	1.944	1.192	1.388	-3.28%
2006	522.940	2.041	0.630	1.432	3.17%
2007	505.578	2.008	1.054	1.394	-2.65%
2008	445.082	1.781	0.630	1.204	-13.63%
2009	458.740	1.571	1.019	1.257	4.37%
2010	456.474	1.586	0.966	1.250	-0.49%
2011	474.139	1.692	0.934	1.299	3.86%
2012	492.982	1.906	0.841	1.363	4.97%
				AVERAGE	**0.24%**

LOW SYSTEM ANNUAL OUTPUT
FLOW COMPARISONS



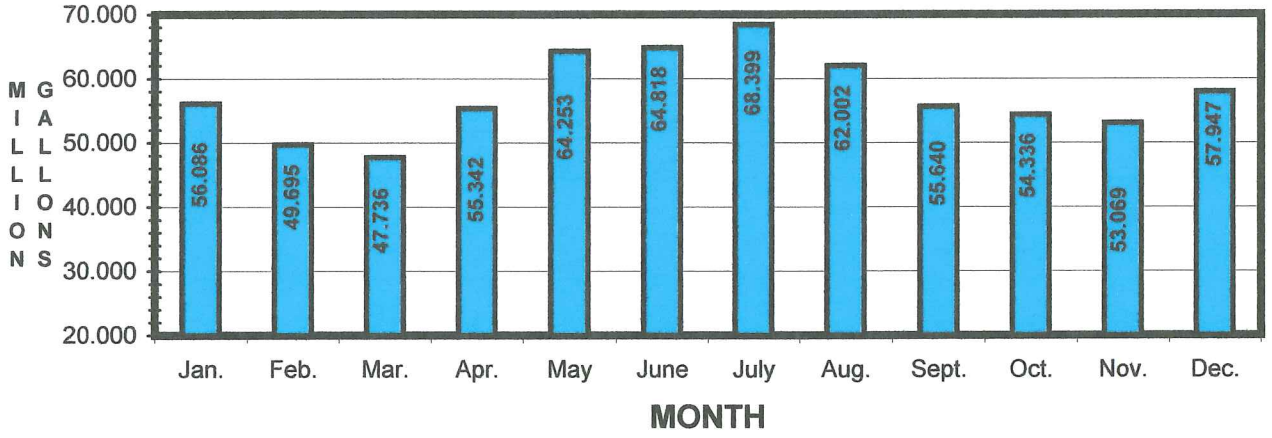
	ANNUAL TOTAL	DAILY MAX.	DAILY MIN.	DAILY AVE.	AVERAGE % INCREASE
1976	159.560	0.575	0.285	0.436	
1977	174.795	0.680	0.340	0.479	9.86%
1978	228.680	0.940	0.365	0.627	30.90%
1979	239.505	0.890	0.420	0.651	3.83%
1980	227.430	0.830	0.390	0.623	-4.30%
1981	240.915	0.950	0.405	0.660	5.94%
1982	235.500	0.960	0.380	0.646	-2.12%
1983	229.615	1.115	0.270	0.629	-2.63%
1984	302.760	1.145	0.460	0.827	31.48%
1985	272.670	0.980	0.415	0.748	-9.55%
1986	270.745	1.125	0.420	0.742	-0.80%
1987	284.870	1.065	0.445	0.781	5.26%
1988	284.970	0.975	0.510	0.779	-0.26%
1989	297.035	1.020	0.585	0.814	4.49%
1990	292.830	1.080	0.615	0.802	-1.47%
1991	323.160	1.310	0.595	0.886	10.47%
1992	320.140	1.325	0.660	0.875	-1.24%
1993	322.120	1.250	0.585	0.883	0.91%
1994	359.865	1.455	0.680	0.986	11.66%
1995	353.800	1.275	0.665	0.969	-1.72%
				AVERAGE	**4.77%**

LOW SYSTEM ANNUAL OUTPUT
FLOW COMPARISONS

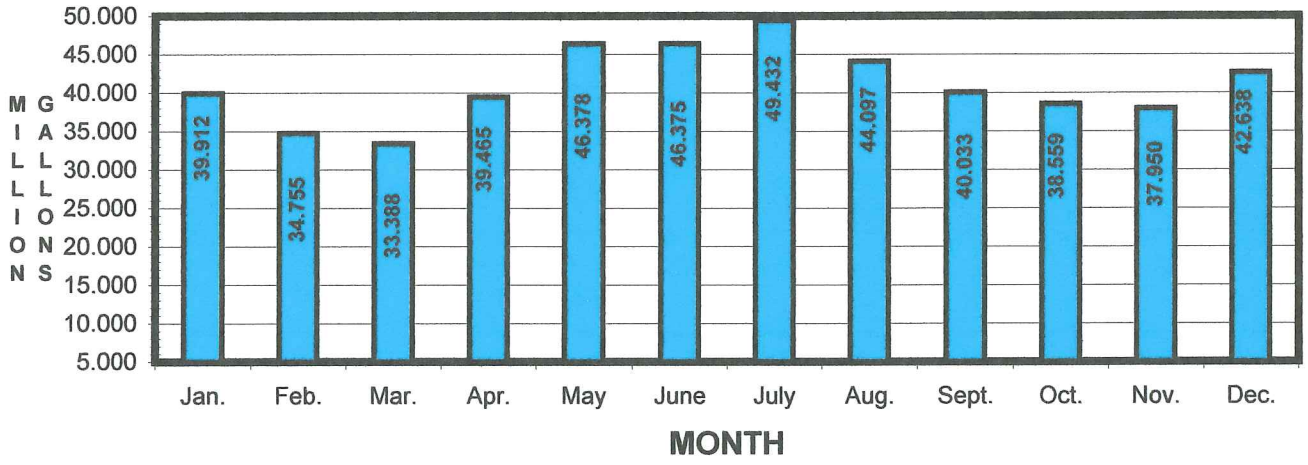


	ANNUAL TOTAL	DAILY MAX.	DAILY MIN.	DAILY AVE.	AVERAGE % INCREASE
1996	361.685	1.460	0.675	0.988	1.96%
1997	350.915	1.685	0.640	0.961	-2.73%
1998	335.060	1.205	0.635	0.917	-4.58%
1999	335.500	1.250	0.545	0.919	0.22%
2000	300.965	1.135	0.585	0.823	-10.45%
2001	268.180	1.110	0.525	0.734	-10.81%
2002	269.670	1.310	0.480	0.739	0.68%
2003	233.883	1.075	0.350	0.641	-13.26%
2004	253.788	0.929	0.546	0.693	8.11%
2005	266.488	1.308	0.463	0.730	5.34%
2006	217.752	1.163	0.401	0.600	-17.81%
2007	221.833	1.045	0.339	0.612	2.00%
2008	183.770	0.803	0.354	0.506	-17.32%
2009	214.722	1.010	0.347	0.593	17.13%
2010	197.743	1.011	0.324	0.542	-8.56%
2011	199.244	1.063	0.098	0.546	0.75%
2012	196.341	1.032	0.299	0.544	-0.43%
				AVERAGE	-3.08%

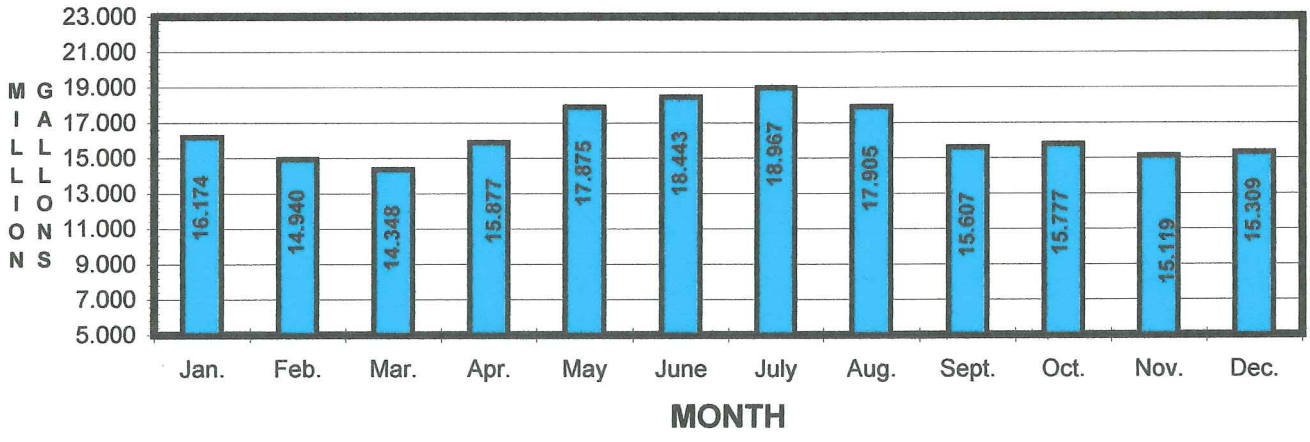
TOTAL SYSTEM MONTHLY FLOW 2012



HIGH SYSTEM MONTHLY FLOW 2012



LOW SYSTEM MONTHLY FLOW 2012



WADSWORTH WATER TREATMENT PLANT

WATER WELL INFORMATION FOR 2012

WELL #	WELL DEPTH	DEPTH TO PUMP	DATE LAST MAINT.	DATE NEXT MAINT. DUE	GPM CAPACITY
2	275	230	Feb-10	Feb-13	270
3	245	220	Feb-11	Feb-14	255
4	245	220	Feb-12	Feb-15	375
7A	215	200	Jul-10	Jul-13	195
9	215	200	May-11	Feb-14	400
10A	210	190	Jan-10	Jan-13	235
11	82	60	Nov-11	Nov-14	260
12	80	70	Feb-12	Feb-12	250
13	80	60	Jan-09	Jan-12	235
14	80	60	Jan-10	Jan-13	235
15	210	200	Jan-11	Jan-14	300
16	Used as monitoring well. Motor was pulled to be used on #3 well				
19			8/14/12 Well put in service	Jan-16	700

Wells 11 & 12 can not be run at the same time.
Wells 7 & 9 can not be run at the same time unless it is an emergency.

2012 Water Treatment Plant Maintenance Expenses Summary

CATEGORY	Decription	COST
Plant Maintenance:	Building & Grounds Maintenance & Repairs	$11,721.45
	Chemical Feed Equipment	$5,732.33
	Education and Training	$100.00
	Pumps, Motors & Electrical	$12,373.63
	Water Tower Repairs & Upgrades	$326.29
	Standby Genator Diesel	$2,976.00
	Standby Generator Callout & Rental *	$57,410.73
	SCADA system maintenance	$3,236.70
	SCADA system upgrade	$15,000.00
* 7/21/11 our standby generator blew its windings. These are the costs for the rental of generator. The new generator was put in service on 12/27/2012, the rental was removed on 1/03/2013.		
Plant Operations:		
	Consumer Confidence Report Printing & Publishing	$867.89
	General Office & Computer Supplies	$890.65
	Lab supplies for wet chemistry and bacteria	$11,246.99
	Lab tests for EPA compliance	$2,556.94
	EPA Fees for labs	$2,380.00
	Chemicals: Lime	$40,575.00
	Chemicals: Chlorine	$3,712.50
	Chemicals: Fluoride	$8,769.75
	Chemicals: Zinc Orthophosphate	$12,315.60
Well Maintenance	Well Pump & Motor Maintenance	$45,000.36
	General Well Maintenance	$8,735.80
	New Well Development & Monitoring Wells	$4,740.00

CITY OF WADSWORTH- WATER QUALITY DATA 2012

		PLANT TAP								DISTRIBUTION SYSTEM			
MONTH	PH	PHENOL ALKALINITY	TOTAL ALKALINITY	TOTAL HARDNESS	CALCIUM HARDNESS	MAGNESIUM HARDNESS	CACO3 STABILITY	FREE CHLORINE	TOTAL CHLORINE	FLUORIDE	FREE CHLORINE	TOTAL CHLORINE	FLUORIDE
1	8.2	1	88	185	105	81	-1	0.8	0.9	1.0	0.6	0.6	1.0
2	8.0	0	89	215	125	90	-1	0.7	0.8	0.9	0.5	0.6	0.9
3	8.0	0	97	208	124	84	-1	0.8	0.9	0.9	0.6	0.6	0.9
4	8.1	0	85	187	106	80	0	0.8	0.9	0.9	0.6	0.6	0.9
5	8.1	0	93	194	111	84	-1	0.9	1.0	0.9	0.6	0.7	0.9
6	8.0	0	96	204	118	86	0	1.0	1.1	0.9	0.6	0.7	0.9
7	8.1	0	91	201	117	84	0	0.9	1.0	0.9	0.6	0.6	0.9
8	8.1	0	85	202	114	88	0	1.0	1.1	0.9	0.7	0.7	0.9
9	8.1	0	89	210	122	87	0	1.1	1.2	0.9	0.7	0.8	0.8
10	8.0	0	89	209	124	86	0	1.0	1.1	0.9	0.7	0.8	0.9
11	7.9	0	84	206	121	86	0	1.0	1.1	0.9	0.8	0.9	0.9
12	8.1	0	76	205	116	88	0	1.0	1.2	1.0	0.7	0.8	1.0
MAX	8.2	1	97	215	125	90	0	1.1	1.2	0.99	0.8	0.9	0.96
MIN	7.9	0	76	185	105	80	-1	0.7	0.8	0.86	0.5	0.6	0.84
AVG	8.1	0	88	202	117	85	0	0.9	1.0	0.93	0.6	0.7	0.92