APPENDIX B

INTENSIFICATION SENSITIVITY ANALYSIS

Four of the six Water Distribution Alternatives being analyzed in this EIR (III, IV, V, and VI) assume, as part of their calculation formulas, that current water consumption will increase, or "intensify" in the future. For calculation of water allocation under these alternatives, the District and its consultants have adjusted current consumption to reflect an intensified future consumption level. As explained in Subsection II.C.2 of this document, this adjustment reflects an assumption, based on historical data, that actual water use by current customers will increase slightly each year during the years 1988 through 1995 (when a new water supply project is expected to be completed). These increases will be due to expansions and intensification of existing uses. The historical data reviewed by the District indicates that water use has intensified an average of 0.243 percent per year. The assumed future consumption levels were thus calculated by multiplying 1987 metered sales by 1.017 (i.e., 0.00243 x 7 years (1988-1995)).

Based on comments submitted on the *Draft EIR*, the District and its consultants have conducted an analysis to test the sensitivity of each distribution alternative to variations in the assumed water use intensification factor. Three assumptions were tested: no intensification, the existing assumption (0.243 percent per year), and twice the existing assumption (0.486 percent per year). To illustrate the effect of these variations, the Consultants prepared summary tables (Tables B-1, B-2, and B-3) showing the amount of net new water available to each jurisdiction under each distribution alternative in those situations where Cal-Am water would be available for allocation. To illustrate the percentage change between the assumed intensification level and the adjusted levels, the Consultants have prepared Table B-4, which shows the percentage variation in net new water between the existing intensification assumption and no intensification.

The variation in assumed intensification can be viewed either as it affects the distribution alternatives or as it affects the individual jurisdictions. Table B-4 shows that Distribution Alternative VI is the most sensitive overall to the variations. This is because future allocations under this alternative would be heavily dependent on existing levels of consumption. In this case, the total net new water available for each jurisdiction varied by between 0.6 and 104.9 percent, depending on the assumed baseline production/consumption level.

Whereas all of the jurisdictions except Sand City experience relatively significant effects under Distribution Alternative VI, other alternatives would affect jurisdictions significantly differently. The most significant jurisdictional effects would be felt by the Monterey Peninsula Airport District, with its allocation varying by up to 139.1 percent. On the other hand, Carmel-by-the-Sea would experience very little fluctuation in their amount of net new water with changes in the assumed intensification level with maximum variation of 5.2 percent.

Carmel-by-the-Sea is the only jurisdiction whose allocation would increase with increases in the assumed intensification level under all of the supply option/distribution alternative scenarios in those situations where new Cal-Am water is available.

TABLE B-1
NET NEW WATER AVAILABLE
With No Assumed Intensification

	Carmel by-the-Sea	Del Rey Oaks	City of Monterey	Pacific Grove	Sand City	Seaside	Monterey County	MPAD	Cal-Am Total
Baseline Production Level A (18,400 Acre-Feet)									
Supply Option II									
Alternative II	27.03	47.83	527.77	195.51	242.47	117.31	330.50	0.02	1,488.43
Alternative III	83.23	15.91	520.48	157.90	258.39	154.28	266.37	31.87	1,488.43
Alternative IV	61.45	7.35	342.28	112.76	295.60	218.64	439.41	10.94	1,488.43
Alternative V	54.34	9.63	548.07	65.45	741.95	71.08	-92.05	89.96	1,488.43
Alternative VI	44.16	3.21	264.11	88.68	248.72	190.40	408.85	0.94	1,249.07
Supply Option III									
Alternative II	52.80	53.99	680.89	254.50	250.84	177.10	482.82	0.49	1,953.43
Alternative III	107.35	20.58	678.45	204.94	331.17	203.94	366.16	40.84	1,953.43
Alternative IV	87.18	12.79	516.90	163.67	361.99	262.22	526.95	21.72	1,953.43
Alternative V	80.80	14.85	701.70	121.18	762.81	129.72	49.71	92.67	1,953.43
Alternative VI	44.16	3.21	264.11	88.68	248.72	190.40	408.85	0.94	1,249.07
Baseline Production Level B (16,700 Acre-Feet)									
Supply Option I									
Alternative II	34.91	45.99	541.52	201.51	224.00	130.67	361.68	0.20	1,540.47
Alternative III	85.38	16.35	536.83	162.50	264.25	160.26	282.31	32.59	1,540.47
Alternative IV	64.33	7.96	361.82	118.46	303.03	223.52	449.20	12.14	1,540.47
Alternative V	57.87	10.35	564.21	73.80	731.62	79.83	-65.95	88.74	1,540.47
Alternative VI	44.16	3.21	264.11	88.68	248.72	190.40	408.85	0.94	1,249.07
Supply Option II									
Alternative II	117.39	65.72	1,031.52	390.26	250.78	321.99	849.11	1.71	3,028.47
Alternative III	162.58	31.29	1,042.30	313.06	497.15	319.19	601.62	61.28	3,028.47
Alternative IV	146.68	25.38	920.62	281.36	515.48	362.98	729.33	46.64	3,028.47
Alternative V	142.35	26.98	1,056.18	251.45	802.54	266.74	384.29	97.94	3,028.47
Alternative VI	44.16	3.21	264.11	88.68	248.72	190.40	408.85	0.94	1,249.07
Supply Option III									
Alternative II	143.16	71.88	1,184.64	449.25	259.15	381.78	1,001.43	2.17	3,493.47
Alternative III	186.71	35.96	1,200.27	360.10	569.93	368.86	701.40	70.25	3,493.47
Alternative IV	172.41	30.82	1,095.25	332.27	581.88	406.56	816.87	57.42	3,493.47
Alternative V	168.75	32.18	1,209.92	306.97	824.71	325.15	524.99	100.81	3,493.47
Alternative VI	44.16	3.21	264.11	88.68	248.72	190.40	408.85	0.94	1,249.07
Supply Option IV									
Alternative II	-11.49	34.89	265.90	95.33	208.93	23.04	87.51	-0.64	703.47
Alternative III	41.96	7.95	252.49	77.82	133.24	70.86	102.70	16.45	703.47
Alternative IV	18.01	-1.84	47.49	26.83	183.53	145.08	291.63	-7.26	703.47
Alternative V	10.35	0.99	287.47	-26.12	691.72	-25.30	-319.21	83.56	703.47
Alternative VI	44.16	3.21	264.11	88.68	248.72	190.40	408.85	0.94	1,249.07

TABLE B-2
NET NEW WATER AVAILABLE
With Assumed Intensification Level*

	Carmel by-the-Sea	Del Rey Oaks	City of Monterey	Pacific Grove	Sand City	Seaside	Monterey County	MPAD	Cal-Am Total
Baseline Production Level A (18,400 Acre-Feet)									
Supply Option II									
Alternative II	27.03	47.83	527.77	195.51	242.47	117.31	330.50	0.02	1,488.43
Alternative III	85.31	16.39	517.07	165.38	214.84	161.79	301.03	26.63	1,488.43
Alternative IV	62.53	7.34	328.53	117.85	256.01	229.93	481.65	4.58	1,488.43
Alternative V	54.84	9.75	547.49	67.11	732.93	72.64	-85.20	88.87	1,488.43
Alternative VI	61.19	6.58	358.63	125.33	250.28	228.71	505.35	1.27	1,537.35
Supply Option III									
Alternative II	52.80	53.99	680.89	254.50	250.84	177.10	482.82	0.49	1,953.43
Alternative III	109.43	21.06	675.03	212.43	287.62	211.46	400.81	35.60	1,953.43
Alternative IV	88.27	12.79	503.16	168.76	322.40	273.51	569.19	15.35	1,953.43
Alternative V	81.31	14.96	701.11	122.89	753.57	131.31	56.73	91.56	1,953.43
Alternative VI	61.19	6.58	358.63	125.33	250.28	228.71	505.35	1.27	1,537.35
Baseline Production Level B (16,700 Acre-Feet)									
Supply Option I									
Alternative II	34.91	45.99	541.52	201.51	224.00	130.67	361.68	0.20	1,540.47
Alternative III	87.28	16.78	533.72	169.31	224.62	167.10	313.85	27.82	1,540.47
Alternative IV	65.32	7.95	349.31	123.09	267.00	233.79	487.65	6.35	1,540.47
Alternative V	58.35	10.46	563.64	75.39	722.95	81.32	-59.34	87.69	1,540.47
Alternative VI	59.66	6.28	350.12	122.03	250.14	225.26	496.67	1.25	1,511.40
Supply Option II									
Alternative II	117.39	65.72	1,031.52	390.26	250.78	321.99	849.11	1.71	3,028.47
Alternative III	164.47	31.72	1,039.20	319.86	457.52	326.03	633.15	56.51	3,028.47
Alternative IV	147.66	25.38	908.12	285.99	479.45	373.25	767.77	40.85	3,028.47
Alternative V	142.87	27.10	1,055.56	253.18	793.12	268.36	391.48	96.81	3,028.47
Alternative VI	59.66	6.28	350.12	122.03	250.14	225.26	496.67	1.25	1,511.40
Supply Option III									
Alternative II	143.16	71.88	1,184.64	449.25	259.15	381.78	1,001.43	2.17	3,493.47
Alternative III	188.60	36.39	1,197.16	366.91	530.30	375.70	732.93	65.48	3,493.47
Alternative IV	173.39	30.82	1,082.74	336.90	545.85	416.83	855.31	51.63	3,493.47
Alternative V	169.28	32.30	1,209.29	308.74	815.05	326.81	532.36	99.65	3,493.47
Alternative VI	59.66	6.28	350.12	122.03	250.14	225.26	496.67	1.25	1,511.40
Supply Option IV									
Alternative II	-11.49	34.89	265.90	95.33	208.93	23.04	87.51	-0.64	703.47
Alternative III	43.85	8.38	249.39	84.63	93.61	77.70	134.24	11.68	703.47
Alternative IV	19.00	-1.85	34.98	31.46	147.50	155.35	330.08	-13.05	703.47
Alternative V	10.81	1.09	286.93	-24.61	683.48	-23.88	-312.92	82.57	703.47
Alternative VI	59.66	6.28	350.12	122.03	250.14	225.26	496.67	1.25	1,511.40

*Assumed to be 1.017 percent, which equals an annual increase of 0.243 percent through 1995, by which time a new water supply project is expected to be completed.

TABLE B-3
NET NEW WATER AVAILABLE
With Twice the Assumed Intensification Level*

	Carmel by-the-Sea	Del Rey Oaks	City of Monterey	Pacific Grove	Sand City	Seaside	Monterey County	MPAD	Cal-Am Total
Baseline Production Level A (18,400 Acre-Feet)									
Supply Option II									
Alternative II	27.03	47.83	527.77	195.51	242.47	117.31	330.50	0.02	1,488.43
Alternative III	87.38	16.87	513.65	172.86	171.28	169.31	335.69	21.39	1,488.43
Alternative IV	63.62	7.34	314.78	122.94	216.41	241.22	523.90	-1.79	1,488.43
Alternative V	55.33	9.85	546.92	68.74	724.14	74.15	-78.52	87.82	1,488.43
Alternative VI	78.22	9.95	453.14	161.98	251.85	267.02	601.85	1.61	1,825.62
Supply Option III									
Alternative II	52.80	53.99	680.89	254.50	250.84	177.10	482.82	0.49	1,953.43
Alternative III	111.51	21.53	671.62	219.91	244.07	218.98	435.47	30.36	1,953.43
Alternative IV	89.35	12.78	489.41	173.85	282.81	284.80	611.44	8.99	1,953.43
Alternative V	81.81	15.07	700.53	124.55	744.55	132.86	63.58	90.48	1,953.43
Alternative VI	78.22	9.95	453.14	161.98	251.85	267.02	601.85	1.61	1,825.62
Baseline Production Level B (16,700 Acre-Feet)									
Supply Option I									
Alternative II	34.91	45.99	541.52	201.51	224.00	130.67	361.68	0.20	1,540.47
Alternative III	89.17	17.22	530.61	176.12	184.98	173.94	345.39	23.05	1,540.47
Alternative IV	66.30	7.95	336.80	127.72	230.97	244.07	526.09	0.56	1,540.47
Alternative V	58.81	10.56	563.08	76.95	714.49	82.78	-52.88	86.68	1,540.47
Alternative VI	75.16	9.35	436.13	155.38	251.57	260.12	584.48	1.55	1,773.73
Supply Option II									
Alternative II	117.39	65.72	1,031.52	390.26	250.78	321.99	849.11	1.71	3,028.47
Alternative III	166.37	32.16	1,036.09	326.67	417.88	332.87	664.69	51.74	3,028.47
Alternative IV	148.65	25.37	895.61	290.63	443.42	383.53	806.22	35.06	3,028.47
Alternative V	143.37	27.21	1,054.96	254.87	783.93	269.95	398.49	95.70	3,028.47
Alternative VI	75.16	9.35	436.13	155.38	251.57	260.12	584.48	1.55	1,773.73
Supply Option III									
Alternative II	143.16	71.88	1,184.64	449.25	259.15	381.78	1,001.43	2.17	3,493.47
Alternative III	190.49	36.83	1,194.05	373.72	490.66	382.54	764.47	60.71	3,493.47
Alternative IV	174.38	30.82	1,070.23	341.53	509.82	427.11	893.76	45.84	3,493.47
Alternative V	169.80	32.41	1,208.67	310.47	805.63	328.43	539.55	98.52	3,493.47
Alternative VI	75.16	9.35	436.13	155.38	251.57	260.12	584.48	1.55	1,773.73
Supply Option IV									
Alternative II	-11.49	34.89	265.90	95.33	208.93	23.04	87.51	-0.64	703.47
Alternative III	45.75	8.81	246.28	91.44	53.97	84.54	165.78	6.91	703.47
Alternative IV	19.98	-1.85	22.48	36.09	111.47	165.62	368.52	-18.84	703.47
Alternative V	11.25	1.19	286.41	-23.14	675.44	-22.50	-306.78	81.60	703.47
Alternative VI	75.16	9.35	436.13	155.38	251.57	260.12	584.48	1.55	1,773.73

*Assumed to be 1.034 percent, which equals an annual increase of 0.486 percent through 1995, by which time a new water supply project is expected to be completed.

TABLE B-4
PERCENT DIFFERENCE IN NET NEW WATER AVAILABLE
Assumed Intensification Level Compared with No Intensification*

	Carmel by-the-Sea	Del Rey Oaks	City of Monterey	Pacific Grove	Sand City	Seaside	Monterey County	MPAD	Cal-Am Total
Baseline Production Level A (18,400 Acre-Feet)									
Supply Option II									
Alternative II									
Alternative III	2.44%	2.90%	-0.66%	4.52%	-20.27%	4.65%	11.51%	-19.68%	
Alternative IV	1.73%	-0.07%	-4.18%	4.32%	-15.47%	4.91%	8.77%	-139.08%	
Alternative V	0.91%	1.14%	-0.11%	2.48%	-1.23%	2.14%	-8.04%	-1.22%	
Alternative VI	27.84%	51.21%	26.35%	29.24%	0.63%	16.75%	19.10%	26.32%	18.75%
Supply Option III									
Alternative II									
Alternative III	1.90%	2.26%	-0.51%	3.52%	-15.14%	3.55%	8.65%	-14.72%	
Alternative IV	1.23%	-0.04%	-2.73%	3.02%	-12.28%	4.13%	7.42%	-41.44%	
Alternative V	0.63%	0.76%	-0.08%	1.39%	-1.23%	1.21%	12.38%	-1.21%	
Alternative VI	27.84%	51.21%	26.35%	29.24%	0.63%	16.75%	19.10%	26.32%	18.75%
Baseline Production Level B (16,700 Acre-Feet)									
Supply Option I									
Alternative II									
Alternative III	2.17%	2.58%	-0.58%	4.02%	-17.65%	4.09%	10.05%	-17.14%	
Alternative IV	1.51%	-0.06%	-3.58%	3.76%	-13.49%	4.39%	7.88%	-91.13%	
Alternative V	0.82%	1.01%	-0.10%	2.11%	-1.20%	1.84%	-11.14%	-1.19%	
Alternative VI	25.98%	48.85%	24.56%	27.33%	0.57%	15.48%	17.68%	24.62%	17.36%
Supply Option II									
Alternative II									
Alternative III	1.15%	1.36%	-0.30%	2.13%	-8.66%	2.10%	4.98%	-8.44%	
Alternative IV	0.67%	-0.02%	-1.38%	1.62%	-7.51%	2.75%	5.01%	-14.18%	
Alternative V	0.36%	0.42%	-0.06%	0.68%	-1.19%	0.60%	1.84%	-1.17%	
Alternative VI	25.98%	48.85%	24.56%	27.33%	0.57%	15.48%	17.68%	24.62%	17.36%
Supply Option III									
Alternative II									
Alternative III	1.00%	1.19%	-0.26%	1.86%	-7.47%	1.82%	4.30%	-7.28%	
Alternative IV	0.57%	-0.01%	-1.16%	1.37%	-6.60%	2.46%	4.49%	-11.22%	
Alternative V	0.31%	0.36%	-0.05%	0.57%	-1.18%	0.51%	1.38%	-1.16%	
Alternative VI	25.98%	48.85%	24.56%	27.33%	0.57%	15.48%	17.68%	24.62%	17.36%
Supply Option IV									
Alternative II									
Alternative III	4.31%	5.16%	-1.25%	8.05%	-42.34%	8.80%	23.49%	-40.83%	
Alternative IV	5.18%	0.25%	-35.76%	14.72%	-24.43%	6.61%	11.65%	44.38%	
Alternative V	4.19%	9.15%	-0.19%	-6.14%	-1.21%	-5.94%	-2.01%	-1.20%	
Alternative VI	25.98%	48.85%	24.56%	27.33%	0.57%	15.48%	17.68%	24.62%	17.36%

*Assumed to be 1.017 percent, which equals an annual increase of 0.243 percent through 1995, by which time a new water supply project is expected to be completed.