APPENDIX A

LAKE ELSINORE AND CANYON LAKE NUTRIENT TMDLS, WASTELOAD AND LOAD ALLOCATIONS BASED ON THREE HYDROLOGIC CONDITIONS

Table A-1

Interim Nutrient TMDLs for Canyon Lake and Lake Elsinore based on the three hydrologic conditions identified in the technical report
(interim TP target of 0.1 mg/L and TN of target of 1 mg/L)

Wet Scenario	Phosphorus (kg/yr)		Nitrogen (kg/yr)	
	Lake Elsinore	Canyon Lake	Lake Elsinore	Canyon Lake
Internal Loading	21,554	4,625	197,370	13,549
External Loading*	10,428	17,838	175,254	171,394
Total TMDL	35,280	22,463	372,624	184,943

Moderate Scenario	Phosphorus		Nitrogen	
	Lake Elsinore	Canyon Lake	Lake Elsinore	Canyon Lake
Internal Loading	21,554	4,625	197,370	13,549
External Loading	10,024	1,683	4,411	7,149
Total TMDL	31,578	6,289	201,781	20,698

Dry Scenario	Phosphorus		Nitrogen	
	Lake Elsinore	Canyon Lake	Lake Elsinore	Canyon Lake
Internal Loading	21,554	4,625	197,370	13,549
External Loading	7,788	1,358	387	4,401
Total TMDL	30,461	5,809	197,757	17,950

Table A-2

Final Nutrient TMDLs for Canyon Lake and Lake Elsinore based on the three hydrologic conditions identified in the technical report
(TP target of 0.05 mg/L and TN target of 0.5 mg/L)

Wet Scenario	Phosphorus		Nitrogen	
	Lake Elsinore	Canyon Lake	Lake Elsinore	Canyon Lake
Internal Loading	9,948	4,625	197,370	13,549
External Loading	2,842	8,919	87,627	85,697
Total TMDL	12,790	13,544	284,997	99,246

Moderate Scenario	Phosphorus		Nitrogen	
	Lake Elsinore	Canyon Lake	Lake Elsinore	Canyon Lake
Internal Loading	9,948	4,625	197,370	13,549
External Loading	2,732	897	2,205	3,574
Total TMDL	12,680	5,522	199,575	17,123

Dry Scenario	Phosphorus		Nitrogen	
	Lake Elsinore	Canyon Lake	Lake Elsinore	Canyon Lake
Internal Loading	9,948	4,625	197,370	13,549
External Loading	2,123	625	194	2,200
Total TMDL	12,071	5,250	197,564	15,749

Table A-3. Interim TMDL, Wasteload and Load Allocations TMDL for Lake Elsinore under three hydrologic conditions (interim TP target of 0.1 mg/L and TN target of 1.0 mg/L)

Scenario I: Wet condition as in 1998						
	Nitrogen load	Existing load	Reduction	Phosphorus Load	Existing load	Reduction
	Allocation (kg/yr)	(kg/yr)	(%)	Allocation (kg/yr)	(kg/yr)	(%)
TMDL	**372,624**	**351,563**		**31,982**	**78,283**	
WLA	40,412			1,675		
Supplemental water	0			0		
Urban	23,952	20,868	none	1,016	4432	77
CAFO	16,459	14,340	none	659	2875	77
LA	332,212			30,307		
Internal Sediment Source	197,370	197,370	0	21,554	33,160	35
Atmospheric Deposition	11,702	11,702	0	108	108	0
Agriculture	56,259	49,014	none	5,013	21867	77
Open/Forest	22,890	19,943	none	2,948	12857	77
Septics	43,991	38,326	none	684	2984	77
MOS	0			0		
Scenario II: Moderate condition as in 1994						
	Nitrogen load	Existing load	Reduction	Phosphorus Load	Existing load	Reduction
	Allocation (kg/yr)	(kg/yr)	(%)	Allocation (kg/yr)	(kg/yr)	(%)
TMDL	**209,072**	**262,006**		**31,578**	**41,212**	
WLA	0			4,640		
Supplemental water	0	40,676	100	1,845	7152	74
Urban	0	4,399	100	2,684	263	
CAFO	0	623	100	111	11	
LA	209,072			26,938		
Internal Sediment Source	197,370	197,370	0	21,554	33,160	35
Atmospheric Deposition	11,702	11,702	0	108	108	0
Agriculture	0	4,384	100	3,210	315	na
Open/Forest	0	1,336	100	1,690	166	na
Septics	0	1,516	100	376	37	na
MOS	0			0		
Scenario III: Draught condition as in 2000						
	Nitrogen load	Existing load	Reduction	Phosphorus Load	Existing load	Reduction
	Allocation (kg/yr)	(kg/yr)	(%)	Allocation (kg/yr)	(kg/yr)	(%)
TMDL	**209,072**	**250,532**		**30,461**	**40,884**	
WLA	0			5,835		
Supplemental water	0	40,676	100	4,920	7,152	31
Urban	0	201	100	854	102	none
CAFO	0	21	100	61	7	none
LA	209,072			24,626		
Internal Sediment Source	197,370	197,370	0	21,554	33,160	35
Atmospheric Deposition	11,702	11,702	0	108	108	0
Agriculture	0	231	100	1,988	238	none
Open/Forest	0	146	100	622	74	none
Septics	0	184	100	354	42	none
MOS	0			0		

Table A-4. Interim TMDL, Wasteload and Load Allocations for Canyon Lake under three hydrologic conditions (interim TP target of 0.1 mg/L and TN target of 1.0 mg/L)

Scenario I: Wet condition as in 1998						
	N Load	Existing load	Reduction	P Load	Existing load	Reduction
	Allocation (kg/yr)	(kg/yr)	(%)	Allocation (kg/yr)	(kg/yr)	(%)
TMDL	**184,943**	**145977**		**22,463**	**47967**	
WLA	42,433			2,767		
Supplemental water	0			0		
Urban	23,812	18337	none	1,590	3893	59
CAFO	18,621	14340	none	1,177	2881	59
LA	142,510			19,696		
Internal Sediment Source	13,549	13549	0	4,625	4625	0
Atmospheric Deposition	1,918	1918	0	221	221	0
Agriculture	61,619	47452	none	8,839	21635	59
Open/Forest	22,844	17591	none	4,941	12093	59
Septics	42,580	32790	none	1,070	2619	59
MOS	0			0		
Scenario II: Moderate condition as in 1994						
	N Load	Existing load	Reduction	P Load	Existing load	Reduction
	Allocation (kg/yr)	(kg/yr)	(%)	Allocation (kg/yr)	(kg/yr)	(%)
TMDL	**20,699**	**26620**		**6,308**	**7553**	
WLA	2,356			513		
Supplemental water	248	248	0	0		
Urban	1,824	3992	54	484	896	46
CAFO	284	621	54	29	53.5	46
LA	18,342			5,795		
Internal Sediment Source	13,549	13549	0	4,625	4625	0
Atmospheric Deposition	1,918	1,918	0	221	221	0
Agriculture	1,897	4152	54	738	1366	46
Open/Forest	450	985	54	170	315	46
Septics	528	1155	54	41	76	46
MOS	0			0		
Scenario III:Draught condition as in 2000						
	N Load	Existing load	Reduction	P Load	Existing load	Reduction
	Allocation (kg/yr)	(kg/yr)	(%)	Allocation (kg/yr)	(kg/yr)	(%)
TMDL	**17,950**	**27199**		**5,983**	**6522**	
WLA	906			264		
Supplemental water	247	247	0	0	0	
Urban	554	2845	81	244	359	32
CAFO	106	543	81	20	29.5	32
LA	17,043			5,719		
Internal Sediment Source	13,549	13549	0	4,625	4625	0
Atmospheric Deposition	1,918	1918	0	221	221	0
Agriculture	798	4099	81	632	931.5	32
Open/Forest	166	855	81	133	196	32
Septics	612	3143	81	108	159.5	32
MOS	0			0		

Table A-5. Final TMDL, Wasteload and Load Allocations TMDL for Lake Elsinore under three hydrologic conditions (final TP target of 0.05 mg/L and TN target of 0.5 mg/L)

Scenario I: Wet condition as in 1998						
	Nitrogen load	Existing load	Reduction	Phosphorus Load	Existing load	Reduction
	Allocation (kg/yr)	(kg/yr)	(%)	Allocation (kg/yr)	(kg/yr)	(%)
TMDL	**284,997**	**351,563**		**12,790**	**78,283**	
WLA	18,760			444		
Supplemental water	0			0		
Urban	11,119	20,868	47	269	4432	94
CAFO	7,641	14,340	47	175	2875	94
LA	266,237			12,346		
Internal Sediment Source	197,370	197,370	0	9,948	33,160	70
Atmospheric Deposition	11,702	11,702	0	108	108	0
Agriculture	26,117	49,014	47	1,328	21867	94
Open/Forest	10,626	19,943	47	781	12857	94
Septics	20,422	38,326	47	181	2984	94
MOS	0			0		
Scenario II: Moderate condition as in 1994						
	Nitrogen load	Existing load	Reduction	Phosphorus Load	Existing load	Reduction
	Allocation (kg/yr)	(kg/yr)	(%)	Allocation (kg/yr)	(kg/yr)	(%)
TMDL	**199,575**	**262,006**		**12,680**	**41,212**	
WLA	0			2,115		
Supplemental water	0	40,676	100	1,845	7152	74
Urban	0	4,399	100	259	263	2
CAFO	0	623	100	11	11	2
LA	199,575			10,565		
Internal Sediment Source	197,370	197,370	0	9,948	33,160	70
Atmospheric Deposition	2,205	11,702	81	108	108	0
Agriculture	0	4,384	100	310	315	2
Open/Forest	0	1,336	100	163	166	2
Septics	0	1,516	100	36	37	2
MOS	0			0		
Scenario III: Draught condition as in 2000						
	Nitrogen load	Existing load	Reduction	Phosphorus Load	Existing load	Reduction
	Allocation (kg/yr)	(kg/yr)	(%)	Allocation (kg/yr)	(kg/yr)	(%)
TMDL	**197,564**	**240,870**		**12,071**	**40,884**	
WLA	0			1,979		
Supplemental water	0	40,676	100	1,968	7,152	72
Urban	0	201	100	10	102	90
CAFO	0	21	100	1	7	90
LA	197,564			10,092		
Internal Sediment Source	197,370	197,370	0	9,948	33,160	70
Atmospheric Deposition	194	2,040	90	108	108	0
Agriculture	0	231	100	24	238	90
Open/Forest	0	146	100	8	74	90
Septics	0	184	100	4	42	90
MOS	0			0		

Table A-6. Final TMDL, Wasteload and Load Allocations for Canyon Lake under three hydrologic conditions (final TP target of 0.05 mg/L and TN target of 0.5 mg/L)

Scenario I: Wet condition as in 1998						
	N Load	Existing load	Reduction	P Load	Existing load	Reduction
	Allocation (kg/yr)	(kg/yr)	(%)	Allocation (kg/yr)	(kg/yr)	(%)
TMDL	**184,943**	**145977**		**22,463**	**47967**	
WLA	42,433			2,767		
Supplemental water	0			0		
Urban	23,812	18337	none	1,590	3893	59
CAFO	18,621	14340	none	1,177	2881	59
LA	142,510			19,696		
Internal Sediment Source	13,549	13549	0	4,625	4625	0
Atmospheric Deposition	1,918	1918	0	221	221	0
Agriculture	61,619	47452	none	8,839	21635	59
Open/Forest	22,844	17591	none	4,941	12093	59
Septics	42,580	32790	none	1,070	2619	59
MOS	0			0		
Scenario II: Moderate condition as in 1994						
	N Load	Existing load	Reduction	P Load	Existing load	Reduction
	Allocation (kg/yr)	(kg/yr)	(%)	Allocation (kg/yr)	(kg/yr)	(%)
TMDL	**20,699**	**26620**		**6,308**	**7553**	
WLA	2,356			513		
Supplemental water	248	248	0	0		
Urban	1,824	3992	54	484	896	46
CAFO	284	621	54	29	53.5	46
LA	18,342			5,795		
Internal Sediment Source	13,549	13549	0	4,625	4625	0
Atmospheric Deposition	1,918	1,918	0	221	221	0
Agriculture	1,897	4152	54	738	1366	46
Open/Forest	450	985	54	170	315	46
Septics	528	1155	54	41	76	46
MOS	0			0		
Scenario III:Draught condition as in 2000						
	N Load	Existing load	Reduction	P Load	Existing load	Reduction
	Allocation (kg/yr)	(kg/yr)	(%)	Allocation (kg/yr)	(kg/yr)	(%)
TMDL	**17,950**	**27199**		**5,983**	**6522**	
WLA	906			264		
Supplemental water	247	247	0	0	0	
Urban	554	2845	81	244	359	32
CAFO	106	543	81	20	29.5	32
LA	17,043			5,719		
Internal Sediment Source	13,549	13549	0	4,625	4625	0
Atmospheric Deposition	1,918	1918	0	221	221	0
Agriculture	798	4099	81	632	931.5	32
Open/Forest	166	855	81	133	196	32
Septics	612	3143	81	108	159.5	32
MOS	0			0		