

A preliminary cost estimate for the 20-year Wastewater Treatment Plant improvements and the proposed general sewer system improvements are summarized in Table 12.

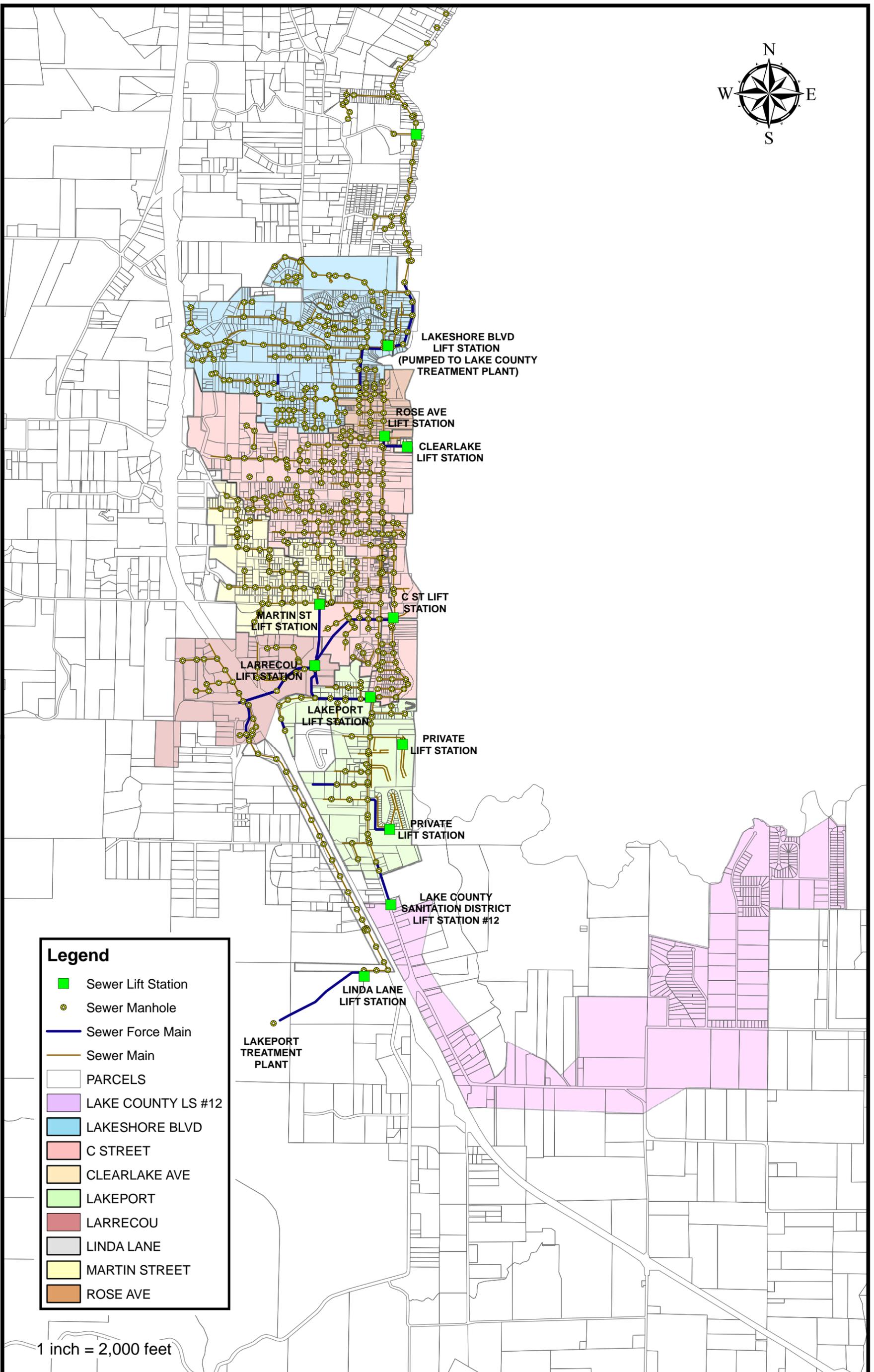
Table 14 together with the I&I Reduction Program shown on Plate 2 and Table 13, in essence, are the Master Plan of Sewer Improvements. As shown in Table 14, approximately \$1,117,000 (June 2008 dollars) worth of sewer general improvements, I&I reduction, and treatment plant improvements will be needed in the Near Term period.

Additional improvements are scheduled for the Intermediate and Long Term time periods. Project costs scheduled in these time periods are based upon the projected growth of 1.1 percent and estimated future I&I rates. Final timing of the individual projects will be dependent upon the actual growth experienced in each subservice area and confirmation of the estimated I&I rates by subsequent flow monitoring.

The cost for increasing the treatment plant's effluent irrigation system was not included within this report pending study results from the City's State Water Resources Control Board recycle study, which will be included in this Master Plan as an addendum when it is completed later in 2008. As a part of this study, it is anticipated that disposal sources will be identified and estimated costs for treating and disposing of the City's effluent will be established.

The I&I Reduction Program within the initial target area (see Table 13) is estimated to cost approximately \$1,013,800 over the next 10 years (or \$101,000 per year). Subsequent I&I reduction programs outside of the initial target area (see Plate Nos. 1 and 2) would cost an additional \$1.0 million dollars, and it is assumed that these subsequent programs would be implemented once the initial target area was completed. Undoubtedly, the high I&I sewer areas identified in this study will continue to degrade without some type of remediation program and it is advised that the reduction programs outlined in this study be implemented as soon as possible in order to delay or prevent this degradation.

FIGURES



Legend

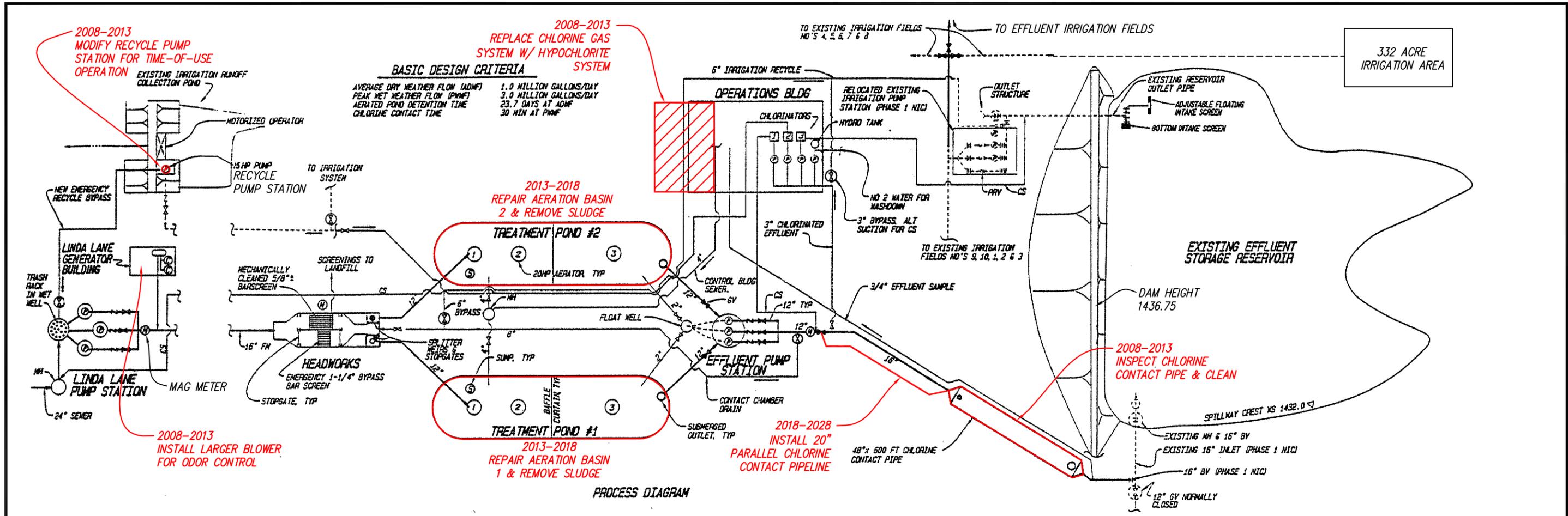
-  Sewer Lift Station
-  Sewer Manhole
-  Sewer Force Main
-  Sewer Main
-  PARCELS
-  LAKE COUNTY LS #12
-  LAKESHORE BLVD
-  C STREET
-  CLEARLAKE AVE
-  LAKEPORT
-  LARRECOU
-  LINDA LANE
-  MARTIN STREET
-  ROSE AVE

1 inch = 2,000 feet



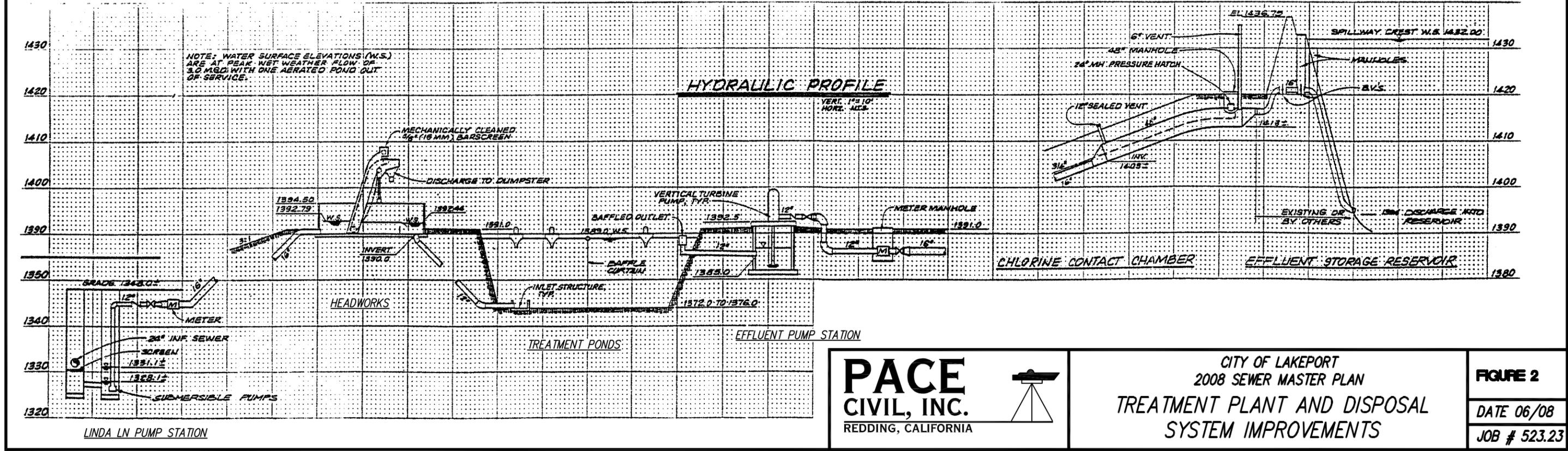
CITY OF LAKEPORT
2008 SEWER MASTER PLAN
LIFT STATION SERVICE AREAS

FIGURE 1
DATE 10/07
JOB# 523.23



BASIC DESIGN CRITERIA
 AVERAGE DRY WEATHER FLOW (ADWF) 1.0 MILLION GALLONS/DAY
 PEAK WET WEATHER FLOW (PWPF) 3.0 MILLION GALLONS/DAY
 AERATED POND DETENTION TIME 23.7 DAYS AT ADWF
 CHLORINE CONTACT TIME 30 MIN AT PWPF

PROCESS DIAGRAM



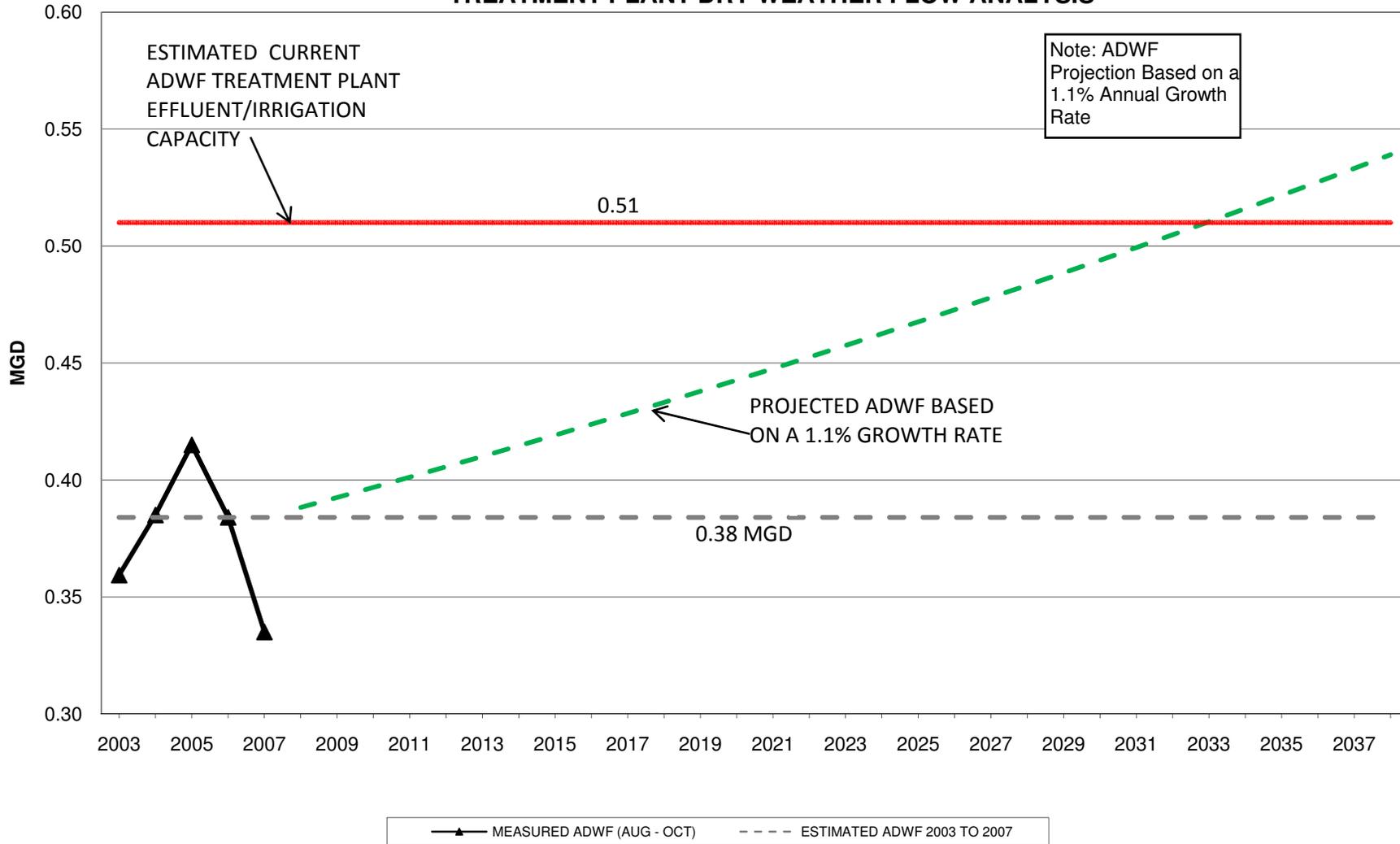
HYDRAULIC PROFILE

PACE CIVIL, INC.
 REDDING, CALIFORNIA

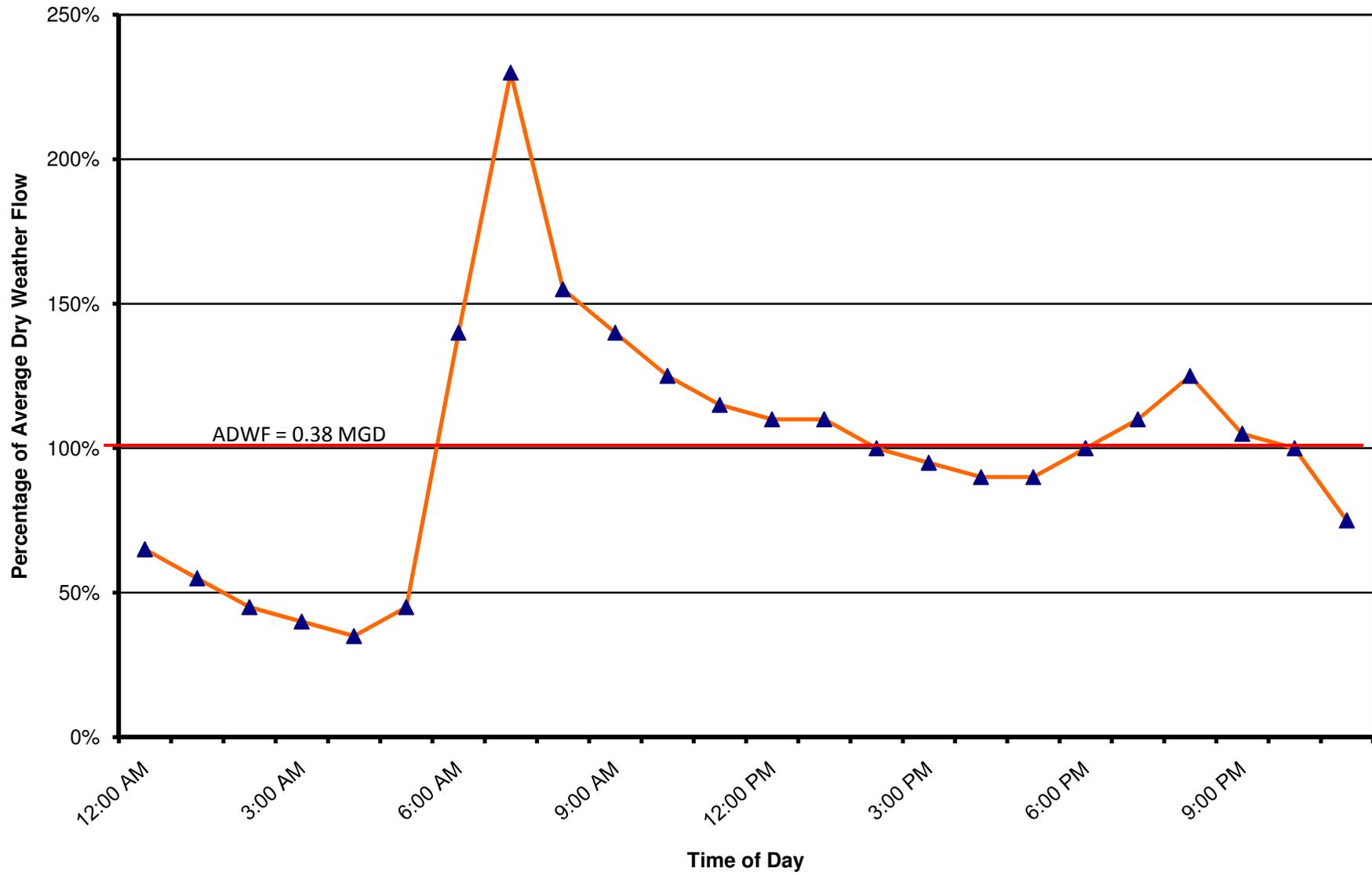
CITY OF LAKEPORT
 2008 SEWER MASTER PLAN
TREATMENT PLANT AND DISPOSAL SYSTEM IMPROVEMENTS

FIGURE 2
 DATE 06/08
 JOB # 523.23

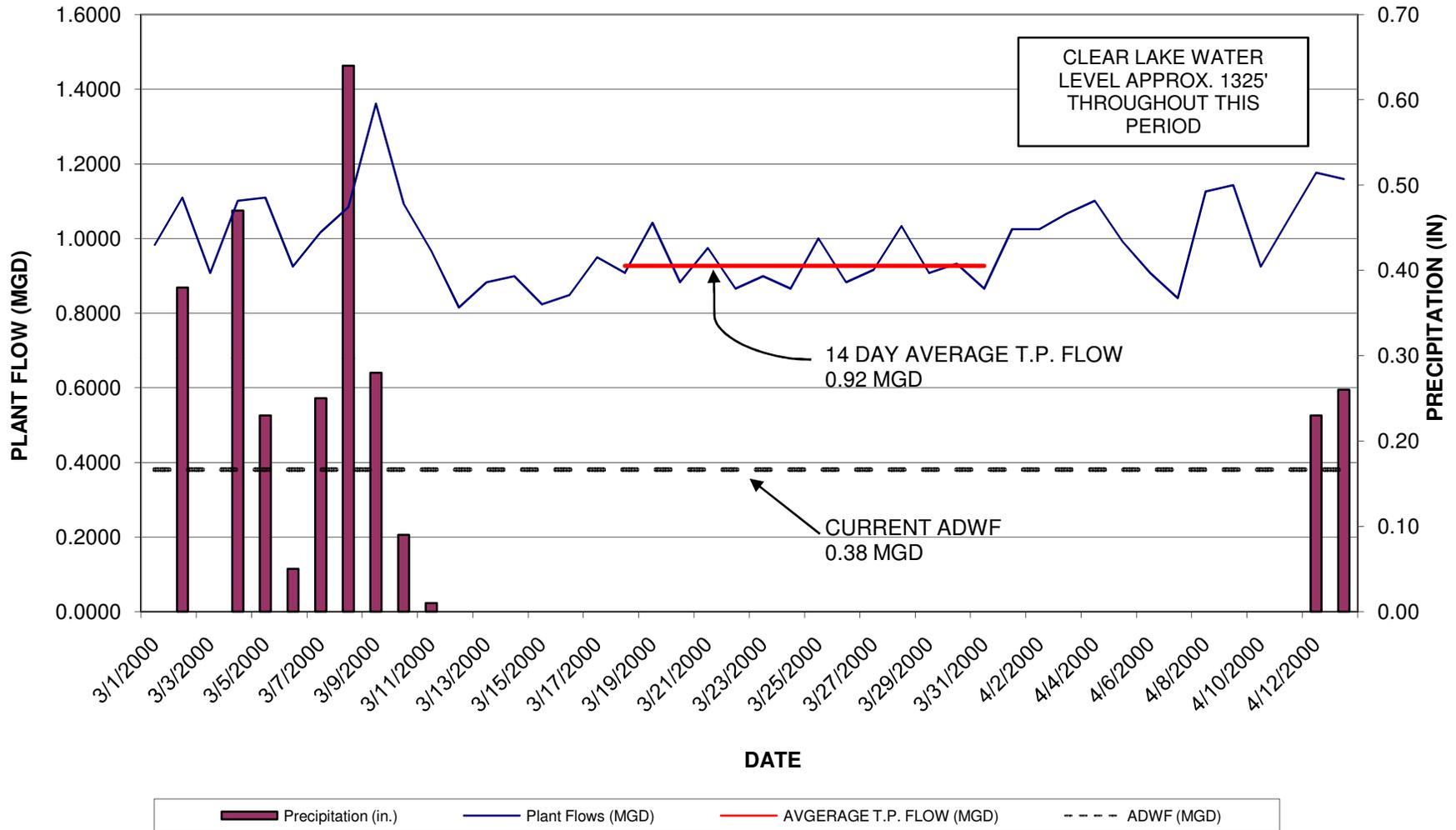
**FIGURE 3
CITY OF LAKEPORT
2008 MASTER SEWER PLAN
TREATMENT PLANT DRY WEATHER FLOW ANALYSIS**



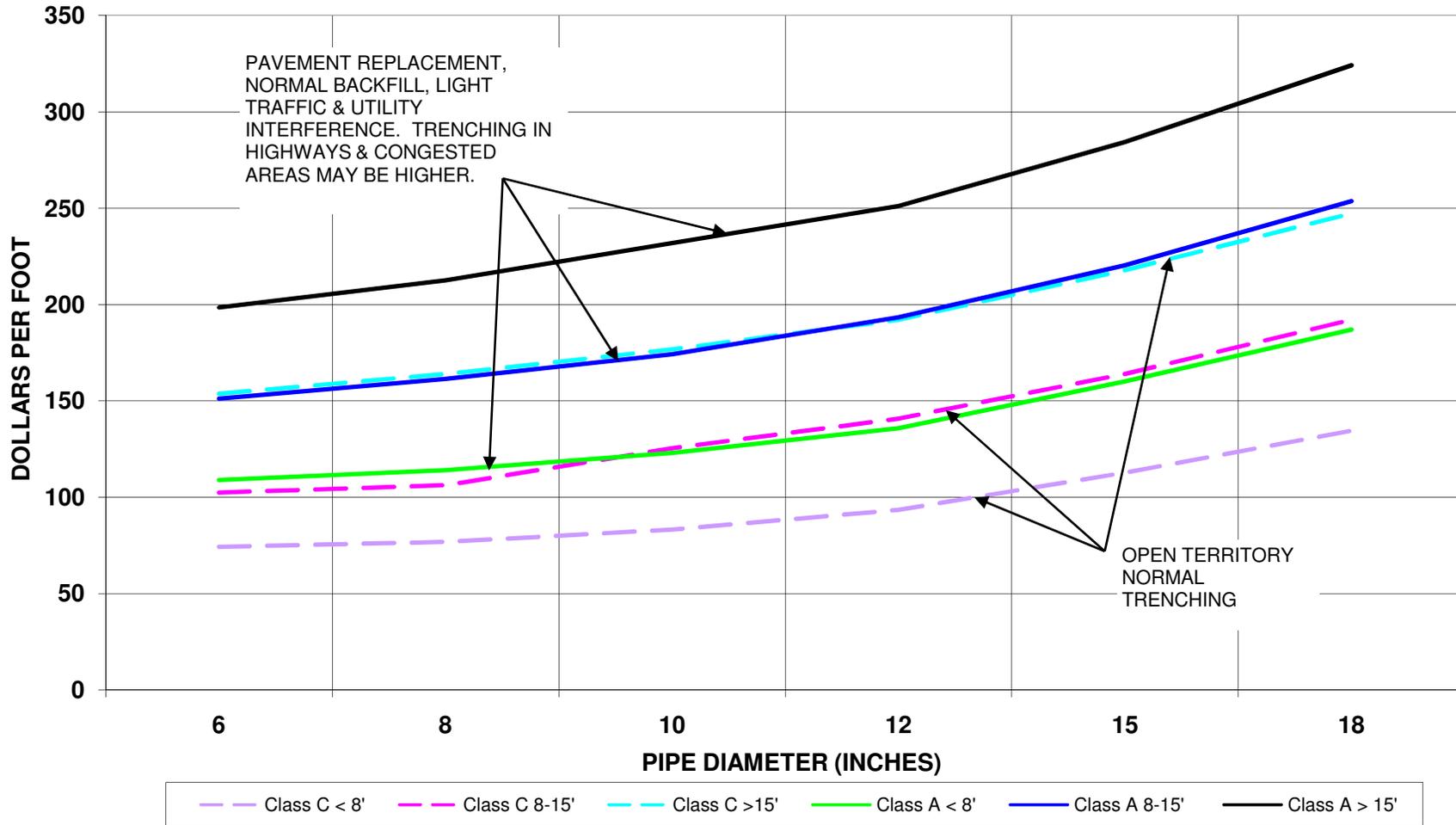
**FIGURE 4
CITY OF LAKEPORT
2008 MASTER SEWER PLAN
COLLECTION SYSTEM DIURNAL CURVE**



**FIGURE 5
CITY OF LAKEPORT
2008 MASTER SEWER PLAN
ESTIMATED PLANT FLOW MARCH-APRIL 2000**



**FIGURE 6
CITY OF LAKEPORT
2008 MASTER SEWER PLAN
GRAVITY SEWER CONSTRUCTION COST
JUNE 2008**



NOTE: COSTS ARE FOR OPEN TRENCHING & INCLUDE ALLOWANCES FOR MANHOLES & OTHER NORMAL APPURTENANCES. THIS COST FIGURE DOES NOT INCLUDE ENGINEERING OR CONTINGENCIES, BORING AND JACKING, ROCK EXCAVATION, SEVERE GROUND WATER, EASEMENTS, OR OTHER SITE SPECIFIC FACTORS.

TABLE 1
CITY OF LAKEPORT
2008 SEWER MASTER PLAN
ESTIMATED LIFT STATION FLOWS AND RECOMMENDED IMPROVEMENTS

LIFT STATION	TYPE	NUMBER OF PUMPS & HORSEPOWER	FLOWMETER (Y/N)	CURRENT EFFECTIVE CAPACITY (MGD)	NUMBER OF RUE'S SERVED		ESTIMATED AVG WET WEATHER FLOWS		RECOMMENDED IMPROVEMENTS
					2008	2028	2008	2028	
					RUE'S	RUE'S	(MGD)	(MGD)	
Lakeshore Blvd	Wet Well	2 - 10 Hp	Y	0.75	450	480	0.54	0.58	Installation of SCADA and radio telemetry would improve monitoring of this lift station.
Rose Ave	Wet Well	2 - 5 Hp	Y	0.72	90	90	0.19	0.16	Installation of SCADA and radio telemetry would improve monitoring of this lift station.
C St	Wet Well	2 - 47 Hp	Y	1.54	700	740	1.00	1.05	Installation of SCADA and radio telemetry would improve monitoring of this lift station.
Linda Ln	Wet Well	3 - 47 Hp	Y	3.77	2050	2560	2.60	2.75	Install new odor control blower and begin chlorine injection at this lift station to improve odor control.
Larrecou	Wet Well	3 - 47 Hp	N	3.2	2000	2500	2.59	2.75	The addition of a flow meter at this lift station would improve system performance and monitoring.
Clearlake	Wet Well	2 - 1 Hp	N	0.17	10	10	0.03 ⁽¹⁾	0.03	Due to limited access into the wet well, potential localized flooding, & manhole degradation, this lift station should be replaced with a new lift station.
Martin St	Wet Well	2 - 6 Hp	Y	0.61	240	360	0.86	0.65	Installation of SCADA and radio telemetry would improve performance and analysis of this lift station. The existing wet well hatch should be rehabilitated. Future peak flows may require that larger pumps be installed.
Lakeport Blvd	Wet Well	2 - 30 Hp	Y	1.46	780	945	0.67	0.79	Installation of SCADA and radio telemetry would improve monitoring of this lift station.
Lake County Lift Station #12	Wet Well	2 - 10 Hp	Y	0.65	180	?	0.42 ⁽²⁾	?	L.S. is maintained by the Lake County Sanitary District. Flow meter should be installed in order to monitor daily flows. City to annex lift station within the next 5 to 10 years.

⁽¹⁾ Estimated PWWF based on historical elapsed time meters readings.

⁽²⁾ PWWF based on 1,500 GPAD I&I rate.

TABLE 2
CITY OF LAKEPORT
2008 MASTER SEWER PLAN
100 YEAR RAINFALL EVENT, 600 AF RESERVOIR & AVERAGE DRY WEATHER FLOW (ADWF) WATER BALANCE
RESERVOIR & EFFLEUNT IRRIGATION SYSTEM WATER BALANCE

File: Table 2 Water balance 5-
 Job #: 523.28/Report Spreadsh
 Date: 6/30/2008
 By: BAC

MONTH	RAINFALL ^{1,2} Inch/Month	ET _o RATE ³ Inch/Month	PASTURE				SEWAGE		RAINFALL ON STORAGE Ac-Ft/Month	RESERVOIR & OXIDATION PONDS			IRRIGATION Ac- Ft/Month	RESERVOIR PERCOLATION ⁹ Ac-Ft/Month	TAILWATER RETURN Ac-Ft/Month	CHANGE IN STORAGE Ac-Ft	TOTAL IN STORAGE Ac-Ft	Evap Pan A Lakeport A80 470100 (mm)	Annual Rainfall ² (Inches)	
			PASTURE COEFFICIENT ⁴	PASTURE ET Inch/Month	AGRONOMIC IRRIGATION ⁵	MINIMUM IRRIGATION ⁶	Q _{MONTH} /ADWF ⁷ DESIGN RATIO	TO STORAGE MG/Month		TO STORAGE Ac- Ft/Month	RESERVOIR COEFFICIENT ⁸	EVAPORATION								
												Inch/Month								Ac-Ft/Month
OCT	3.49	2.6	0.76	1.9	0.0	17	1.01	15.81	48.5	9.9	0.881	2.3	1.7	114.1	1.5	7.2	-51.7	48.3	65	1.74
NOV	8.09	0.7	0.73	0.5	0.0	8	1.06	16.06	49.3	22.9	0.801	0.5	0.6	54.0	2.8	3.4	18.3	66.6	17	4.03
DEC	10.55	1.1	0.71	0.8	0.0	0	1.63	25.52	78.3	29.9	0.801	0.9	1.5	0.0	4.3	0.0	102.5	169.1	28	5.26
JAN	12.36	0.6	0.72	0.5	0.0	0	2.26	35.38	108.6	35.0	0.801	0.5	1.0	0.0	5.3	0.0	137.4	306.5	16	6.16
FEB	9.67	1.3	0.74	1.0	0.0	3	2.23	31.53	96.8	27.4	0.801	1.0	2.2	20.8	5.8	1.3	96.7	403.2	33	4.82
MAR	7.26	2.2	0.76	1.6	0.0	0	2.52	39.45	121.1	20.6	0.801	1.7	4.2	0.0	6.5	0.0	131.0	534.2	55	3.62
APR	3.83	3.9	0.78	3.0	0.0	6	2.31	35.00	107.4	10.9	0.744	2.9	7.0	41.5	6.5	2.6	65.9	600.1	99	1.91
MAY	1.44	5.9	0.78	4.6	3.8	18	1.66	25.99	79.8	4.1	0.744	4.4	10.5	103.9	6.5	6.5	-30.5	569.6	149	0.72
JUN	0.56	6.9	0.78	5.3	5.7	20	1.36	20.60	63.2	1.6	0.744	5.1	11.8	158.7	6.3	10.0	-102.0	467.6	174	0.28
JUL	0.08	8.5	0.78	6.6	7.8	28	1.21	18.94	58.1	0.2	0.744	6.3	12.5	216.5	5.3	13.6	-162.3	305.3	215	0.04
AUG	0.22	7.7	0.78	6.0	7.0	28	1.08	16.91	51.9	0.6	0.744	5.7	10.0	192.5	4.5	12.1	-142.3	163.0	196	0.11
SEP	0.68	5.6	0.78	4.3	4.4	24	1.02	15.45	47.4	1.9	0.744	4.1	6.1	121.1	3.8	7.6	-74.0	89.0	141	0.34
TOTAL	58.25	46.8		36.2	28.7	151		296.6	910.4	165.0		35.5	69.0	1023.2	58.8	64.5	-11.0		1188	29.03

CONSTANTS

Storage pond runoff area (acres):	A	34		
Average storage pond water surface (acres):	B	26		
Total oxidation cell area (acres):		2.82		
Irrigation area (acres):	C	332		
Storage pond percolation rate @ 12 ft WL (in/day):	D	0.1	4.6E-07	cm/sec
Design ADWF (MGD):	E	0.51	47.1	Ac-Ft/Month
Irrigation Application Efficiency Factor	F	1.2		
Offseason Irrigation Rate (in/day)	G	0.25		
Tailwater recovery percent of applied water		0.063		

- NOTES:**
- 100-year rainfall based on Station Lakeport 2NW Precipitation Long-Duration-Frequency Table from DWR Bulletin 195, October 1976.
 - 100-year rainfall of 58.25 inches spread in proportion to average monthly rainfall data for years 1941-2001 from Western Regional Climate Center.
 - Potential ET_o based on 12 years of data for Station Lakeport Evaporation from water surface, DWR Bulletin 13-79, November 1979.
 - Pasture evapotranspiration ratio determined from DWR Bulletin 73-79, November 1979.
 - Effluent applied May through September. Application rate = (ET - Precipitation) * 1.2 Irrigation Application Efficiency Factor
 - Effluent applied in October through April based upon minimum irrigation days and historical offseason irrigation rate.
 - Sewage flow based upon 2004-2007 monthly average dry weather flow sent to reservoir, Q_{month}/ADWF Design Ratios x Design ADWF.
 - Reservoir and oxidation ponds evaporation pan ratios from "Penman-Monteith Estimates of Reservoir Evaporation"; Marvin E. Jensen, Hon. M.ASCE; Avry Dotan; and Roland Sanford.
 - Reservoir percolation and evaporation rates take into account the surface area inundated. Evaporation includes oxidation pond area.
 - The 4-year ADWF for Aug-Oct 2004-2007 = 0.38 MGD. The ADWF/RUE = 200 GPD. Based upon this spreadsheet, CLMSD has an ADWF capacity of about 0.56 MGD remaining in the treatment plant reservoir/effluent disposal. Thus there is an estimated remaining ADWF capacity of approximately 0.18 MGD ADWF. This is predicated on an extremely aggressive irrigation
 - Normalized I&I = [296.6 MG/Yr - (0.51 MGD * 365 Days/Yr)] / 0.51 MGD = 222.4 MG/MGD

TABLE 4
CITY OF LAKEPORT
2008 MASTER SEWER PLAN
WASTEWATER TREATMENT FACILITIES DESIGN CRITERIA

Item	Capacity
Household Equivalents	4,000±
Average Dry Weather Flow (ADWF) MGD	1.0
Peak Wet Weather Flow (PWWF) MGD	3.0
Sewage Loading	
Biochemical Oxygen Demand (BOD ₅)	
Concentration, mg/L	240
Lbs/Day	2,000
Total Suspended Solids	
Concentration, mg/l	240
Lbs/Day	2,000
 <u>FIRST-STAGE TREATMENT</u>	
Number of Aeration Cells	2
Cell Surface Area, Acres	1.42
Cell Volume, MG	5.89
Detention Time at ADWF, Days	11.8
Cell Depth Range, Ft	15-17
BOD ₅ Loading, Lbs/Day/Cell	1001
Aeration Capacity Required, Lbs O ₂ /Lb BOD ₅ Applied	2
Estimated Minimum Oxygen Supply Potential	
Assumptions: T=24°C;	
Elev = 1,400 FT.; 1.5 mg/L Residual O ₂ ;	
Beta 0.9; Alpha 0.8; Standard Rate 3.2 Lbs/Hr;	
Lbs O ₂ /Hp Hr	1.64
Theoretical Horsepower	
Required Hp/Cell	25.4
Aerator Size Used, Hp Nominal	2 @ 20
Estimated BOD ₅ Reduction, %	58
 <u>SECOND STAGE TREATMENT</u>	
Number of Aeration Cells	2
Cell Surface Area, Acres	1.42
Cell Volume, MG	5.89
Detention Time at ADWF, Days	11.8
Cell Depth Range, Ft	13-15
BOD ₅ Loading, Lbs/Day/Cell	420
Aeration Capacity Required, Lbs O ₂ /Lb BOD ₅ Applied	2
Estimated Minimum Oxygen Supply Potential, Lbs O ₂ /Hp/Hr	1.74
Theoretical Hp/Cell	10.1
Aerator Size Used, Hp Nominal	20
Estimated BOD ₅ Reduction, %	33

TABLE 4
CITY OF LAKEPORT
2008 MASTER SEWER PLAN
WASTEWATER TREATMENT FACILITIES DESIGN CRITERIA

Item	Capacity
<u>ESTIMATED EFFLUENT QUALITY FROM AERATED PONDS</u>	
BOD ₅ mg/L, Average	34
Total Suspended Solids, mg/L, Average	60
Total Nitrogen, N, mg/L	10 to 30
Total Phosphorus, P, mg/L	5 to 10
<u>STORAGE RESERVOIR</u>	
Capacity, Acre Feet	600
Depth, Ft, Maximum	42
Average Surface Area, Acres	28
BOD ₅ Loading Rate, Lbs/Day, Average	284
Loading Rate, Lbs/Acre/Day	10.1
<u>CHLORINATION</u>	
Number of Gas Chlorinators	3
Maximum Dosage Per Chlorinator, Lbs/Day	325
Maximum Dosage for Disinfection, mg/L	24
Typical Dosage to Irrigation System, mg/L	5
Chlorinator Feedwater Pumps	3
Chlorinator Feedwater Pump Capacity, GPM	24
<u>IRRIGATION</u>	
Annual Application Rate - Average, Ac-Ft/Yr	3.0
-Maximum, Ac-Ft/Yr	3.5
Irrigation Cycle - Irrigation Days	1
- Rest Days	6
Cycle Application Rate, Inches/Day	
Normal (4.4 Hours to 6.1 Hours)	1.1- 1.4
Maximum (7.4 Hours)	1.7
Sprinkler Application Rate, Inches/Hour	0.22 TO 0.24
Disposal Requirements, Ac-Ft/Yr	
100-Year Rainfall, 0.45 MGD ADWF	1,043
Current Net Irrigation Area, Acres	332
Typical Sprinklered Area	90
Peak Month Application Rate, Ac-Ft	215
Maximum Flow Rate (Two Irrigation Pumps), GPM	2,800
Typical Number Sprinklers in Each Field	100
Flow Per Sprinkler, GPM	28

TABLE 5
CITY OF LAKEPORT
2008 MASTER SEWER PLAN
RUE DETERMINATION

No.	Bill Name	100 CF in February 2006	Average Winter Water Use (CF/Month) ⁽³⁾	Average Winter Water Use (Gall/Month) ⁽³⁾	Average ⁽³⁾ (GPD)	Estimated Equivalent RUE's
1	TGJ SUMMITT DEVELOPMENT	1,121	89,680		21,639	108
2	DA VITA, INC.	792	63,360		15,288	76
3	FAIRGROUNDS VILLAGE	453	36,240		8,744	44
4	49TH DIST AG ASSOC	414	33,120		7,992	40
5	K MART #4819	391	31,280		7,548	38
6	MC KINNEY/BRUCE//	236	18,880		4,556	23
7	BRUNO'S (MAIN STORE)	235	18,800		4,536	23
8	COUNTY OF LAKE	206	16,480		3,976	20
9	AQUA VILLA MOBILE HOME PARK	204	16,320		3,938	20
10	PACIFIC REGENCY	184	14,720		3,552	18
11	QUAIL RUN FITNESS CENTER	168	13,440		3,243	16
12	YOZSA/RICHARD//	158	12,640		3,050	15
13	MC KINNEY/BRUCE//	142	11,360		2,741	14
14	ARTON INC	132	10,560		2,548	13
15	REGENCY INN	121	9,680		2,336	12
16	LAKEPORT VILLAGE APTS	113	9,040		2,181	11
17	SAFEWAY #0983	96	7,680		1,853	9
18	SKYLARK MOTEL	96	7,680		1,853	9
19	CURTIS/DAVID B//	93	7,440		1,795	9
20	BUTCHER/DEREK R//	79	6,320		1,525	8
21	FEUERBACHER/STEVEN L//	76	6,080		1,467	7
22	LUCKY 4 TRAILER PARK	75	6,000		1,448	7
23	KEN HOLMES	72	5,760		1,390	7
24	KATHY FOWLER CHEVROLET PONTIA	67	5,360		1,293	6
25	EDELWEISS GUEST HOME	67	5,360		1,293	6
26	LAKE COUNTY COURTHOUSE	64	5,120		1,235	6
27	ST MARY PARISH	64	5,120		1,235	6
28	AMZONE LLC	64	5,120		1,235	6
29	LAKEVIEW HOUSING, INC.	62	4,960		1,197	6
30	PERKO'S CAFE	58	4,640		1,120	6
31	COUNTY OF LAKE - SHERIFF	56	4,480		1,081	5
32	SUN/RANDOLPH/DR & MRS/	55	4,400		1,062	5
33	VAARS/KATHERINE//	51	4,080		984	5
34	SINGH/PAL//	50	4,000		965	5
35	380 FIRST ST. TRUST ACCOUNT	48	3,840		927	5
36	SIERRA WEST PROP. MGMT	48	3,840		927	5
37	AMZONE LLC	47	3,760		907	5
38	ADVANCE AMERICA CASH ADV	46	3,680		888	4
39	BRIXIE/TINA M//	46	3,680		888	4
40	TUCKER/ROBERT//	43	3,440		830	4
			527,440		127,266	636

Average Lakeport Winter Water Consumption ⁽¹⁾	0.37	MGD
Average Treatment Plant Flow (Avg Summer 2004 to 2007) ⁽²⁾	0.38	MGD
Metered Winter Water Use Top 40 users ⁽³⁾	0.13	MGD
Dry Weather Sewage Component distributed to remaining services	0.25	MGD

Total Connections ⁽⁴⁾⁽⁵⁾⁽⁶⁾	1450
Top 40 Service Connections	40
Remaining active service connections = RUE's	1410

Estimated RUE Dry Weather Flow	180	GPD
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Adjusted RUE Dry Weather Flow⁽⁸⁾	200	GPD
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Total estimated RUEs within Lakeport Main Service Area ⁽⁷⁾	2,046	RUEs
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⁽¹⁾ 80% of average winter (February 2006) metered water use for Lakeport main zone, excluding Lakeshore L.S. service area.

⁽²⁾ Average Daily Treatment Plant flows for August, September & October 2004 to 2007

⁽³⁾ 80% of average winter (February 2006) metered water use top 40 users discharged to collection system.

⁽⁴⁾ Does not include approximately 600 connections served by the Lake County Sanitary District via the Lakeshore Blvd. Lift Station (Ash L.S.).

⁽⁵⁾ Includes approximately 180 connections served by the Lake County Sanitary Dist. Lift Station 12.

⁽⁶⁾ Number of Lakeport water connections that were billed for February 2006 water use.

⁽⁷⁾ Includes all developed properties currently connected to the City of Lakeport main zone (not including areas served by the Lakeside Boulevard L.S.) and Lake County SD service area 9-1 and 9-3 collection systems.

⁽⁸⁾ Adjusted ADWF/RUE based on a 7 percent vacancy rate.

TABLE 13
City of Lakeport
2008 MASTER SEWER PLAN
INFILTRATION AND INFLOW REDUCTION PROGRAM

	Approx 2008 I&I				Phase 2 - Sewer Repair and Replacement ⁽⁵⁾																Total Project Cost	Ultimate Estimated I&I Reduction			
	Subservice Area	Existing Sewered Area (Ac)	MGD	GPAD	Sewer Size (inches)	Estimated Length (ft)	MH's	Estimated # of Laterals ^{(1)&(2)}	Mainline Grout Sealing		Manhole Repair or Replacement				Sewer Repair or Replacement				Lateral Repairs			%	(MGD)		
									Grout Sealing (ft) ⁽⁴⁾	Sealing Costs (\$) ⁽⁵⁾	MH's Repaired (ea) ⁽⁶⁾	MH's Repair Costs (\$) ⁽⁶⁾	MH's Replaced (ea) ⁽⁷⁾	MH's Replaced (\$) ⁽⁷⁾	Main Size (Inches)	Length (ft) ⁽⁸⁾	Unit Cost (\$/LF) ⁽⁹⁾	Total Cost	Lateral ⁽¹¹⁾						
																			Number ⁽¹⁰⁾	Cost (@\$6,700 ea.)					
INITIAL I&I REDUCTION TARGET AREA (2008 to 2018)	9B	28.6	0.33	11,550	8	300	11	86	60	\$300	1	\$4,000	1	\$6,000	8	60	\$163	\$9,800	17	\$113,900	\$319,100	60%	0.198		
					6	3,540			708	\$3,700			6	708	\$158	\$111,900									
					4	2,130			426	\$2,200			4	426	\$158	\$67,300									
	7C	2	0.013	6,700	6	250	1	8	50	\$300	0	\$0	0	\$0	6	50	\$158	\$7,900	2	\$13,400	\$21,600	75%	0.010		
					6	890	5	23	178	\$900	0	\$0	0	\$0	6	178	\$158	\$28,100	5	\$33,500	\$79,400	65%	0.040		
	4B	28	0.161	5,740	8	1,150	13	18	230	\$1,200	1	\$4,000	1	\$6,000	8	230	\$163	\$37,500	4	\$26,800	\$144,400	75%	0.121		
					6	1,230			246	\$1,300			6	246	\$158	\$38,900									
					4	880			176	\$900			4	176	\$158	\$27,800									
	13A	33.9	0.179	5,270	8	2,260	22	102	452	\$2,400	2	\$8,000	2	\$12,000	8	452	\$163	\$73,700	20	\$134,000	\$321,500	50%	0.090		
					6	2,370			474	\$2,500			6	474	\$158	\$74,900									
					4	430			86	\$400			4	86	\$158	\$13,600									
	3C	27.6	0.137	5,010	8	2,500	14	53	500	\$2,600	1	\$4,000	1	\$6,000	8	250 ⁽¹¹⁾	\$163	\$38,300	6 ⁽¹²⁾	\$40,200	\$127,800	35%	0.048		
6					745			149	\$800			6	149	\$158	\$23,500										
4					380			76	\$400			4	76	\$158	\$12,000										
SUBSEQUENT I&I REDUCTION TARGET AREA (2018 to 2028)	10B	44.5	0.201	4,510	8	2,185	23	100	437	\$2,300	2	\$8,000	2	\$12,000	8	437	\$163	\$71,200	20	\$134,000	\$303,200	50%	0.101		
					6	2,320			464	\$2,400		\$0			6	464	\$158	\$73,300							
	7B	5.3	0.022	4,210	8	227	3	15	45	\$200	0	\$0	0	\$0	8	45.4	\$163	\$7,400	3	\$20,100	\$58,900	60%	0.013		
					6	380			76	\$400			6	76	\$158	\$12,000									
					4	575			115	\$600			4	115	\$158	\$18,200									
	1B	32.9	0.139	4,210	8	460	16	40	92	\$500	2	\$8,000	2	\$12,000	8	92	\$163	\$15,000	8	\$53,600	\$189,900	65%	0.090		
					6	3,090			618	\$3,200			6	618	\$158	\$97,600									
					4	1,780			356	\$1,900			4	356	\$158	\$56,200									
	7A	61	0.25	4,100	8	980	15	65	196	\$1,000	2	\$8,000	2	\$12,000	8	196	\$163	\$31,900	13	\$87,100	\$268,200	60%	0.150		
					6	2,150			430	\$2,200			6	430	\$158	\$67,900									
					4	1,780			356	\$1,900			4	356	\$158	\$56,200									
	9A	23	0.094	4,080	8	1,350	10	30	270	\$1,400	1	\$4,000	1	\$6,000	8	270	\$163	\$44,000	6	\$40,200	\$142,000	55%	0.052		
6					1,360			272	\$1,400			6	272	\$158	\$43,000										
4					60			12	\$100			4	12	\$158	\$1,900										
SUBTOTAL INITIAL I&I TARGET AREA		130.6	0.882			19,575	66	290	3,915	\$20,400	5	\$20,000	5	\$30,000		3415		\$726,100	48	\$361,800	\$1,013,800		0.506		
TOTAL ALL HIGH I&I AREAS		297.3	1.588			36,492	133	540	7,298	\$38,000	12	\$48,000	12	\$72,000		6,798		\$1,121,200	98	\$696,800	\$1,976,000		0.912		

NOTES:

- (1) Laterals refer to the sewer pipe serving the property from the sewer main to the property line (i.e., lateral in the public right-of-way).
- (2) House connection refers to the sewer pipe on private property from the property line to the structure being served.
- (3) All costs include 25% engineering and 15% contingency and are based on prevailing wages and Contractor costs.
- (4) Grout sealing of mainline sewers assumes that 20% of the sewers in the high I&I target areas will require sealing.
- (5) Grout sealing costs based on 10-foot sewer pipe segments. \$52/joint includes 40% Engineering and contingency.
- (6) Cost for manhole repairs based on 10% of the existing MHs needing some type of repair. Repair cost \$4,000/MH.

- (7) Cost for manhole replacement based on 10% of the existing MHs needing replacement. Replacement cost \$6,000/MH.
- (8) Replacement and/or repair of sewers is based on 20% of the existing sewers needing some type of replacement or repair (i.e., lining, pipe bursting, etc.).
- (9) Replacement sewer costs assume pavement restoration and sewer depth less than 8 feet deep.
- (10) Replacement and/or repair of laterals is based on 20% of the existing laterals needing some type of replacement or repair (i.e., lining, pipe bursting, etc.).
- (11) Due to previous rehabilitation project completed in 1994, replacement and/or repair of sewers in this area is based on only 10% of the existing sewers needing some type of replacement or repair (i.e., lining, pipe bursting, etc.).
- (12) Due to previous rehabilitation project completed in 1994, replacement and/or repair of laterals in this area is based on only 10% of the existing laterals needing some type of replacement or repair (i.e., lining, pipe bursting, etc.).

MGD = Million Gallons Per Day
GPAD = Gallons Per Acre Per Day

TABLE 8
CITY OF LAKEPORT
2008 Sewer Master Plan
20 YEAR GROWTH PROJECTION

Development Number ⁽¹⁾	Development Type	Estimated RUEs	Estimated Developed Area (Ac)	
1	Residential ⁽²⁾	36	4.8	FUTURE GROWTH AREAS SERVED BY THE LAKESHORE LIFT STATION
2	Residential ⁽²⁾	4	1.2	
3	Residential ⁽²⁾	4	2.6	
4	Residential ⁽²⁾	28	4.0	
5	Residential ⁽²⁾	8	4.0	
6	Residential ⁽²⁾	35	14.3	
7	Residential ⁽²⁾	6	1.6	
8	Residential ⁽²⁾	8	2.4	
9	Residential ⁽²⁾	32	7.2	
10	Residential ⁽²⁾	10	2.7	
11	Residential ⁽²⁾	30	8.9	
12	Residential ⁽²⁾	60	5.3	
13	Residential ⁽²⁾	6	1.0	
14	Residential ⁽²⁾	28	6.7	
15	Residential ⁽²⁾	96	22.3	
16	Residential ⁽²⁾	96	7.1	
17	Residential ⁽²⁾	70	7.9	
18	Residential ⁽²⁾	8	0.5	
A	Commercial ⁽³⁾	1	1.6	
B	Commercial ⁽³⁾	10	3.4	
C	Commercial ⁽³⁾	19	6.7	
D	Commercial ⁽³⁾	4	1.0	
E	Commercial ⁽³⁾	29	10.2	
F	P.O.	99	23.0	SOUTHERN DEVELOPMENT AREA (SDA)
19	Residential ⁽²⁾	1000	800.0	
20	Residential ⁽²⁾	340	95.1	
TOTAL RUEs ⁽⁴⁾		2,067	1,046	

(1) See Plate 2 for development locations.

(2) Assumes one RUE per residence.

(3) RUEs based on similar Lakeport developments.

(4) For this Master Plan only 660 RUEs are projected over the next 20 years based on a 1.1% growth rate. The 2,067 RUEs proposed in this table are estimates from the City Planning Department and includes the Southern Development Area which is anticipated to be developed beyond 2028.

TABLE 9
CITY OF LAKEPORT
2008 Sewer Master Plan
SERVICE AREA TABULATION TABLE

Service Area No.	Year	Total RUEs	Existing Sewered Area (AC)	New Sewered Area (AC)	Existing I&I Rate (GPM)	Existing I&I Rate (GPAD)	Future I&I Rate (GPAD)	ADWF (MGD) ⁽⁵⁾	I&I Flow (MGD)	PWWF ⁽¹⁾ (MGD)
1A	2008	350	140.0		64	640		0.065	0.090	0.238
	2028	521	140.0	15.0		1500	1500	0.104	0.233	0.472
1B	2008	140	32.9		99	4200		0.026	0.138	0.197
	2028	159	32.9	6.7		3000	1500	0.032	0.109	0.182
2	2008	200	70.0		73	1500		0.037	0.105	0.190
	2028	200	70.0			1500		0.040	0.105	0.197
3A	2008	40	22.0		10	610		0.007	0.013	0.030
	2028	40	22.0			1500		0.008	0.033	0.051
3B	2008	15	18.6		8	600		0.003	0.011	0.017
	2028	15	18.6			1500		0.003	0.028	0.035
3C	2008	120	27.3		99	5010		0.022	0.137	0.187
	2028	120	27.3			4500		0.024	0.123	0.178
4A	2008	40	29.3		8	380		0.007	0.011	0.028
	2028	40	29.3			1500		0.008	0.044	0.062
4B	2008	25	28.0		114	5740		0.005	0.161	0.171
	2028	25	27.6			4500		0.005	0.124	0.136
5A	2008	25	13.0		14	1500		0.005	0.020	0.030
	2028	25	13.0			1500		0.005	0.020	0.031
5B	2008	15	13.7		32	3255		0.003	0.045	0.051
	2028	15	13.7			3255		0.003	0.045	0.051
6A	2008	46	19.2		5	350		0.009	0.007	0.026
	2028	46	19.2			1500		0.009	0.029	0.050
6B	2008	30	21.6		10	630		0.006	0.014	0.026
	2028	30	21.6			1500		0.006	0.032	0.046
7A	2008	270	61.0		178	4100		0.050	0.250	0.364
	2028	339	61.0	24.9		3000	1500	0.068	0.220	0.376
7B	2008	15	5.3		16	4200		0.003	0.022	0.029
	2028	15	5.3			3000		0.003	0.016	0.023
7C	2008	15	2.0		10	6700		0.003	0.013	0.020
	2028	15	2.0			4500		0.003	0.009	0.016
8A	2008	25	3.5		2	660		0.005	0.002	0.013
	2028	25	3.5			1500		0.005	0.005	0.017
8B	2008	25	22.8		51	3130		0.005	0.071	0.082
	2028	25	22.8			3130		0.005	0.071	0.083
8C	2008	30	30.7		67	3070		0.006	0.094	0.107
	2028	30	30.7			3070		0.006	0.094	0.108
9A	2008	65	30.4		86	4075		0.012	0.124	0.151
	2028	129	30.4	5.3		3000	1500	0.026	0.099	0.158
9B	2008	75	28.6		235	11550		0.014	0.330	0.362
	2028	75	28.6			7000		0.015	0.200	0.235
9C	2008	20	8.0		34	5950		0.004	0.048	0.056
	2028	20	8.0			4500		0.004	0.036	0.045
10A	2008	60	17.0		17	1450		0.011	0.025	0.050
	2028	60	17.0			1500		0.012	0.026	0.053
10B	2008	10	44.5		143	4510		0.002	0.201	0.205
	2028	82	44.5	15.2		3000	1500	0.016	0.156	0.194
11	2008	265	107.5		78	1050		0.050	0.113	0.225
	2028	405	107.5	33.4		1500	1500	0.081	0.211	0.398
13A	2008	89	33.9		127	5260		0.017	0.178	0.216
	2028	97	33.9	0.5		4500	1500	0.019	0.153	0.198
13B	2008	20	6.5		6	1720		0.004	0.011	0.020
	2028	20	6.5			1500		0.004	0.010	0.019
14	2008	20	2.8		3	1500		0.004	0.004	0.013

TABLE 9
CITY OF LAKEPORT
2008 Sewer Master Plan
SERVICE AREA TABULATION TABLE

Service Area No.	Year	Total RUEs	Existing Sewered Area (AC)	New Sewered Area (AC)	Existing I&I Rate (GPM)	Existing I&I Rate (GPAD)	Future I&I Rate (GPAD)	ADWF (MGD) ⁽⁵⁾	I&I Flow (MGD)	PWWF ⁽¹⁾ (MGD)
	2028	20	2.8			1500		0.004	0.004	0.013
16A ⁽²⁾	2008	130	76.4		52	1120		0.024	0.086	0.141
	2028	170	76.4	4.6		1500	1500	0.032	0.122	0.195
16B ⁽²⁾	2008	155	100.2		103	1310		0.029	0.131	0.197
	2028	185	100.2	8.1		1500	1500	0.035	0.162	0.242
17A ⁽²⁾	2008	55	15.7		30	2900		0.010	0.046	0.069
	2028	55	15.7			2900		0.010	0.046	0.069
17B ⁽²⁾	2008	200	82.0		143	2450		0.037	0.201	0.285
	2028	200	82.0			2450		0.037	0.201	0.287
18 ⁽³⁾	2008	0	0.0		0	0		0.000	0.000	0.000
	2028	468	0.0	128.3		0	1500	0.088	0.192	0.394
19 ⁽³⁾	2008	0	0.0		0	0		0.000	0.000	0.000
	2028	1,000	0.0	800.0		0	1500	0.187	1.200	1.630
2008 Main Zone Totals ⁽⁴⁾⁽⁵⁾		2,050	840					0.38	2.24	3.10
2028 Main Zone Totals ⁽⁴⁾⁽⁵⁾		2,593	840					0.48	2.24	3.43
2008 Totals		2,590	1,114	0				0.48	2.70	3.80
2028 Totals		4,671	1,114	1,042				0.91	4.16	6.24

⁽¹⁾ Includes a Dry Weather Flow peaking factor of 2.3 based on the diurnal curve data.

⁽²⁾ These service areas are served by the Lakeshore Blvd L.S. and are pumped to the Lake County Treatment Plant.

⁽³⁾ Subservice areas within the Southern Development Area.

⁽⁴⁾ Main zone served by the Lakeport Treatment Plant.

⁽⁵⁾ Assumed 2008 and 2028 ADWF adjusted for a 7% vacancy rate.

TABLE 10
CITY OF LAKEPORT
2008 Sewer Master Plan
SEWER DESIGN FLOW CRITERIA

Domestic Wastewater
Average Dry Weather Flow (ADWF) 200 GPD/RUE

	YEAR	
	2008 (GPAD)	2028 (GPAD)
Typical Infiltration & Inflow Allowance - Existing Sewers	Above 10,000	7,000
	8,000 to 10,000	6,500
	5,000 to 8,000	4,500
	3,500 to 5,000	3,000
	less than 3,500	(1)
Infiltration and Inflow Allowance Sewers Constructed after 2001	--	1,500

Note: I & I rate Reductions used in the Master Sewer Plan analysis for the 2028 rehabilitation areas were based on observed conditions of the sewers and projected repairs and may not reflect the reductions shown on this table. These reductions will require that private sewer connections also be repaired. It is estimated that approximately half of the I&I in the system is from private sewer connections.

(1) I&I flows less than 3,500 GPAD are assumed to be constant. It is assumed that the sewers will not be fully rehabilitated; however, there will be some improvements made to maintain prevent further degradation.

TABLE 11
CITY OF LAKEPORT
2008 SEWER WATER PLAN
HIGHEST INFILTRATION AND INFLOW AREAS

Monitoring Station	Subareas	Sewered Area-Acres	Infiltration & Inflow		
			GPAD	MGD	
MS 9B	9B	28.6	11,550	0.330	INITIAL I&I TARGET AREA
MS 7	7C	2.0	6,700	0.013	
MS 9A	9C	10.5	5,950	0.062	
MS 4	4B	28	5,740	0.161	
MS 13	13A	33.9	5,270	0.179	
MS 3C	3C	27.3	5,010	0.137	
MS 10	10B	44.5	4,510	0.201	SUBSEQUENT I&I TARGET AREA
MS 7	7B	5.3	4,210	0.022	
MS 1B	1B	32.9	4,210	0.139	
MS 7	7A	61.0	4,100	0.250	
MS 9A	9A	23	4,080	0.094	
TOTAL		297.0		1.588	

TABLE 12
CITY OF LAKEPORT
2008 MASTER SEWER PLAN
HYDRAULIC MODEL SEWER CAPACITY AND FLOW SUMMARY

Model Pipe ID No.	From Model Manhole	To Model Manhole	Sewer Diameter (in)	Existing Or Future	Length (ft)	Sewer Slope (ft/ft)	Pipe Capacity (MGD)	2008		2028				Comments		
								Model PWWF (MGD)	PWWF Surcharge (ft)	Model PWWF (MGD)	Estimated PWWF Surcharge (ft)	REPLACEMENT SEWER			PARALLEL SEWER	
												Size (in)	Capacity (MGD)		Size (in)	Capacity (MGD)
359	G10-04	G10-05	10	E	318.26	0.003	0.774	0.031	0.046							
361	G10-05	G10-09	10	E	155.66	0.005	1.000	0.043	0.062							
363	G10-09	H10-06	10	E	253.88	0.003	0.774	0.056	0.078							
365	H10-06	H11-02	6	E	404.67	0.005	0.256	0.069	0.094							
367	H11-02	H11-03	6	E	258.77	0.012	0.397	0.082	0.110							
369	H11-03	H11-04	8	E	309.04	0.007	0.652	0.108	0.138							
371	H11-04	H11-05	8	E	487.67	0.004	0.493	0.132	0.173							
373	H11-05	H11-07	8	E	233.75	0.004	0.493	0.154	0.198							
375	H11-07	H11-10	8	E	293.23	0.003	0.427	0.167	0.215							
377	H11-10	H12-07	8	E	382.75	0.003	0.427	0.178	0.233							
379	H12-07	H12-10	8	E	283.00	0.004	0.493	0.193	0.251							
381	H12-10	H12-12	8	E	242.29	0.004	0.493	0.207	0.268							
383	G12-02	G11-06	6	E	223.36	0.013	0.413	0.032	0.032							
385	G11-06	G12-01	6	E	215.01	0.065	0.923	0.049	0.050							
387	G12-01	H12-01	6	E	592.56	0.040	0.724	0.067	0.069							
389	H12-01	H12-03	6	E	191.03	0.110	1.201	0.087	0.090							
391	H12-03	H12-04	6	E	267.04	0.017	0.472	0.109	0.112							
393	H12-04	H12-08	8	E	145.39	0.028	1.305	0.129	0.132							
395	H12-08	H12-14	8	E	224.78	0.054	1.812	0.154	0.157							
397	H12-14	H12-15	8	E	368.63	0.007	0.652	1.019	4.0	1.035	4.0	10	1.20	8	0.65	Lakeshore Blvd. Sewer ⁽⁵⁾
399	H12-15	H12-16	8	E	77.11	0.004	0.493	1.024	1.0	1.035	1.0	12	1.45	10	0.90	Lakeshore Blvd. Sewer ⁽⁵⁾
401	E12-03	E12-06	6	E	374.06	0.066	0.930	0.024	0.024							
403	E12-06	E12-05	6	E	184.21	0.034	0.668	0.041	0.049							
405	E12-05	E12-04	6	E	50.93	0.035	0.677	0.061	0.069							
407	E12-04	F12-01	6	E	389.60	0.025	0.573	0.080	0.088							
409	F12-01	F12-02	6	E	92.15	0.011	0.380	0.100	0.109							
411	F12-02	F12-03	6	E	305.41	0.010	0.362	0.120	0.128							
413	F12-03	F12-04	6	E	439.93	0.012	0.397	0.138	0.147							
415	F12-04	G12-11	6	E	439.47	0.026	0.584	0.156	0.165							
417	G12-11	G12-12	6	E	440.33	0.027	0.595	0.175	0.184							
419	G12-12	G12-13	6	E	531.48	0.008	0.324	0.195	0.204							
421	G12-13	H12-13	6	E	736.17	0.027	0.595	0.217	0.234							
423	H12-13	H12-14	8	E	118.55	0.002	0.349	0.846	5.0	0.858	5.0	12	1.00	10	0.65	Lakeshore Blvd. Sewer ⁽⁵⁾
425	G13-02	H13-08	6	E	542.55	0.008	0.324	0.215	0.214							
427	H13-08	H13-02	6	E	391.95	0.002	0.162	0.352	5.0	0.349	5.0	8	0.35	8	0.35	High St. Sewer ⁽⁵⁾
429	H13-02	H13-01	8	E	189.26	0.006	0.604	0.507	0.503							High St. Sewer ⁽⁵⁾
431	H13-01	H12-13	8	E	301.19	0.004	0.493	0.608	5.0	0.603	5.0	10	0.90	6	0.23	High St. Sewer ⁽⁵⁾
433	F15-02	F15-03	6	E	346.79	0.009	0.344	0.110	0.114							
435	F15-03	F15-04	6	E	352.98	0.008	0.324	0.217	0.206							
437	F15-04	F15-05	6	E	341.25	0.009	0.344	0.332	0.304							
439	F15-05	G15-07	6	E	224.88	0.012	0.397	0.441	0.396							
441	G15-07	G15-09	8	E	298.54	0.015	0.955	0.563	0.503							
443	G15-09	G15-10	8	E	20.75	0.045	1.654	0.621	0.559							
445	G15-10	G15-18	8	E	228.33	0.007	0.652	0.648	0.570							
447	G15-18	G15-17	8	E	9.71	0.132	2.833	0.655	0.576							
449	G15-17	G15-19	8	E	246.01	0.005	0.551	0.658	6.0	0.578	3.0	10	1.00	4	0.09	10th St. Sewer ⁽²⁾
451	G15-19	G15-20	8	E	234.02	0.006	0.604	0.661	6.0	0.580						
453	G15-20	G15-21	8	E	260.80	0.014	0.923	0.717	0.634							
455	G15-21	G15-22	8	E	225.70	0.005	0.551	0.728	6.0	0.653	6.0	10	1.00	6	0.26	10th St. Sewer ⁽²⁾
457	G15-22	H15-08	8	E	315.13	0.005	0.551	0.740	6.0	0.673	6.0	10	1.00	6	0.26	10th St. Sewer ⁽²⁾
459	H15-08	H15-09	10	E	258.12	0.003	0.774	0.753	0.695							
461	H15-09	H15-10	10	E	283.68	0.003	0.774	0.769	0.719							
463	H15-10	H16-04	8	E	255.06	0.004	0.493	1.375	6.0	1.369	6.0	12	1.50	10	0.90	Main St. Sewer ⁽⁴⁾
465	H16-04	H16-10	8	E	361.75	0.003	0.427	1.380	7.0	1.389	8.0	12	1.30	12	1.30	Main St. Sewer ⁽⁴⁾
467	G16-04	G16-10	6	E	208.54	0.113	1.217	0.078	0.078							
469	G16-10	G16-15	6	E	219.01	0.032	0.648	0.150	0.149							
471	G16-15	G16-16	6	E	262.63	0.035	0.677	0.229	0.225							
473	G16-16	G16-17	6	E	159.27	0.017	0.472	0.307	0.282							
475	G16-17	G16-18	6	E	297.17	0.016	0.458	0.385	0.379							
477	G16-18	H16-11	8	E	292.06	0.005	0.551	0.401	0.400							
479	H16-11	H16-12	8	E	260.86	0.010	0.780	0.452	0.450							
481	H16-12	H16-14	8	E	291.77	0.007	0.652	0.505	0.501							
485	H16-10	H16-13	8	E	241.99	0.003	0.427	1.385	6.0	1.402	7.0	15	2.30	12	1.25	Main St. Sewer ⁽⁴⁾
487	H16-13	H16-14	8	E	14.85	0.185	3.354	1.388	1.388							
489	H16-14	H17-05	12	E	216.02	0.001	0.727	1.894	7.0	1.880	7.0	18	2.15	15	1.30	Main St. Sewer ⁽⁴⁾
491	H17-05	H17-14	12	E	250.50	0.001	0.727	1.901	9.0	1.887	9.0	18	2.15	15	1.30	Main St. Sewer ⁽⁴⁾
493	H17-14	H17-18	12	E	266.88	0.002	1.028	1.907	9.0	1.894	9.0	15	1.90	12	1.00	Main St. Sewer ⁽⁴⁾
495	H17-18	H17-22	12	E	267.07	0.004	1.454	1.917	6.0	1.904	6.0	15	2.70	8	0.50	Main St. Sewer ⁽⁴⁾
497	H17-22	H18-05	12	E	328.24	0.001	0.727	1.920	5.0	1.907	5.0	18	2.15	15	1.30	Main St. Sewer ⁽⁴⁾
499	H18-05	H18-12	12	E	364.63	0.002	1.028	1.923	4.0	1.915	4.0	18	3.00	12	1.00	Main St. Sewer ⁽⁴⁾
501	H18-12	H19-03	12	E	300.95	0.002	1.028	1.932	2.0	1.925	2.0	18	3.00	12	1.00	Main St. Sewer ⁽⁴⁾
503	H19-03	H19-13	12	E	349.09	0.004	1.454	1.933	2.0	1.939	2.0	15	2.65	8	0.50	Main St. Sewer ⁽⁴⁾
505	H19-13	H19-14	12	E	264.65	0.005	1.626	1.960	2.010							

TABLE 12
CITY OF LAKEPORT
2008 MASTER SEWER PLAN
HYDRAULIC MODEL SEWER CAPACITY AND FLOW SUMMARY

Model Pipe ID No.	From Manhole	To Model Manhole	Sewer Diameter (in)	Existing Or Future	Length (ft)	Sewer Slope (ft/ft)	Pipe Capacity (MGD)	2008		2028						Comments	
								Model PWWF (MGD)	PWWF Surcharge (ft)	Model PWWF (MGD)	Estimated PWWF Surcharge (ft)	REPLACEMENT SEWER		PARALLEL SEWER			
												Size (in)	Capacity (MGD)	Size (in)	Capacity (MGD)		
507	H19-14	C St PS	8	E	4.00	0.338	4.534	2.027		2.105							
511	H21-13	H21-07	8	E	245.80	0.003	0.427	0.006		0.009							
513	H21-07	H21-02	8	E	139.88	0.004	0.493	0.013		0.019							
515	H21-02	H20-17	8	E	118.01	0.002	0.349	0.019		0.028							
517	H20-17	H20-14	8	E	267.41	0.005	0.551	0.027		0.039							
519	H20-14	H20-11	8	E	178.65	0.004	0.493	0.034		0.048							
521	H20-11	H20-07	8	E	209.23	0.003	0.427	0.040		0.057							
523	H20-07	H20-02	8	E	200.62	0.004	0.493	0.046		0.067							
525	H20-02	H19-21	8	E	354.11	0.003	0.427	0.053		0.076							
527	H19-21	H19-20	8	E	56.03	0.009	0.740	0.059		0.086							
529	H19-20	H19-14	8	E	141.61	0.004	0.493	0.065		0.097							
531	H13-14	H13-15	8	E	21.47	0.013	0.889	0.088		0.075							
533	H13-15	H14-03	8	E	128.76	0.011	0.818	0.167		0.141							
535	H14-03	H14-07	8	E	286.72	0.003	0.427	0.245		0.210							
537	H14-07	H14-09	8	E	182.23	0.004	0.493	0.332		0.284							
539	H14-09	H14-16	8	E	337.04	0.002	0.349	0.417		0.354							
541	H14-16	Rose PS	8	E	17.65	0.094	2.391	0.438		0.365							
543	F16-08	F16-09	6	E	362.07	0.012	0.397	0.033		0.025							
545	F16-09	F17-01	8	E	240.06	0.023	1.183	0.062		0.065							
547	F17-01	F17-04	8	E	199.91	0.010	0.780	0.093		0.089							
551	F17-05	F17-07	8	E	46.13	0.003	0.427	0.154		0.134							
553	F17-07	F17-08	8	E	236.51	0.013	0.889	0.184		0.157							
555	F17-08	F17-09	8	E	188.48	0.007	0.652	0.215		0.179							
557	F17-10	F17-11	8	E	291.54	0.012	0.854	0.276		0.226							
559	F17-11	F17-12	6	E	217.28	0.006	0.280	0.306	4.0	0.250							Compton St. Sewer ⁽³⁾
561	F17-09	F17-10	8	E	17.33	0.095	2.404	0.245		0.204							
563	F17-12	F17-14	6	E	154.03	0.007	0.303	0.337	4.0	0.286							Russell St. Sewer ⁽³⁾
565	F17-14	F17-15	8	E	37.48	0.030	1.351	0.368		0.310							
567	F17-15	F18-03	8	E	287.20	0.004	0.493	0.398		0.333							
569	F18-03	G18-03	8	E	282.00	0.014	0.923	0.429		0.356							
571	G18-03	G18-08	8	E	356.04	0.006	0.604	0.460		0.380							
573	G18-08	G19-01	8	E	346.94	0.004	0.493	0.537	4.0	0.456							Martin St. Sewer ⁽³⁾
575	G19-01	G19-03	8	E	236.85	0.008	0.697	0.800	5.0	0.666							Martin St. Sewer ⁽³⁾
577	G19-03	G19-04	8	E	279.42	0.007	0.652	0.862	6.0	0.741	1.0	10	1.20	4	0.10		Martin St. Sewer ⁽³⁾
579	G19-04	G19-05	8	E	270.21	0.008	0.697	0.919	3.0	0.786							Martin St. Sewer ⁽³⁾
581	G19-08	G19-07	8	E	17.93	0.118	2.679	0.121		0.144							
583	E20-03	E20-02	8	E	299.27	0.003	0.427	0.022		0.087							
585	E20-02	E20-01	8	E	157.55	0.005	0.551	0.043		0.117							
587	F20-03	F20-05	8	E	314.67	0.010	0.780	0.101		0.193							
589	F20-05	F21-01	8	E	298.31	0.005	0.551	0.119		0.219							
591	F21-01	F21-05	8	E	292.41	0.005	0.551	0.145		0.254							
593	F21-05	F21-06	8	E	201.79	0.005	0.551	0.163		0.281							
595	F21-06	F21-04	8	E	662.22	0.010	0.780	0.215		0.343							
597	G20-08	G20-07	8	E	173.72	0.006	0.604	0.336		0.521							
599	G20-07	G20-06	8	E	257.08	0.005	0.551	0.364		0.557							
601	F20-04	F20-07	8	E	225.53	0.009	0.740	0.033		0.042							
603	F20-07	F20-06	8	E	248.21	0.007	0.652	0.050		0.072							
605	F20-06	G20-09	8	E	405.15	0.016	0.986	0.068		0.098							
607	F21-04	G20-09	8	E	456.82	0.006	0.604	0.233		0.369							
609	G20-09	G20-08	8	E	238.06	0.006	0.604	0.318		0.494							
611	H25-04	H25-02	12	E	438.97	0.011	2.411	0.790		0.789							
613	H25-02	H24-04	12	E	83.12	0.025	3.635	0.812		0.828							
615	H24-04	H24-03	12	E	122.06	0.003	1.259	0.827		0.860							
617	H24-03	H24-02	12	E	354.35	0.001	0.727	0.843		0.968							
619	H24-02	H24-01	12	E	63.36	0.006	1.781	0.859		1.002							
621	H24-01	H23-09	12	E	339.11	0.003	1.259	0.874		1.034							
623	H23-09	H23-07	12	E	335.04	0.002	1.028	0.917		1.094							
625	H23-07	H23-05	12	E	48.58	0.005	1.626	0.996		1.206							
627	H23-05	H23-04	12	E	223.90	0.003	1.259	1.011		1.238							
629	H23-04	H23-02	12	E	124.96	0.001	0.727	1.044		1.287							
631	H23-02	H22-05	12	E	279.02	0.000	0.230	1.060		1.322							
633	H22-05	H22-04	12	E	56.11	0.007	1.924	1.079		1.359							
635	H22-04	H22-03	12	E	305.35	0.002	1.028	1.094		1.391							
637	H22-03	H22-01	12	E	297.39	0.002	1.028	1.112		1.426							
639	H22-01	H21-15	12	E	244.04	0.002	1.028	1.137		1.468							
641	H21-15	H21-11	12	E	312.12	0.004	1.454	1.187		1.535							
643	H21-10	H21-11	6	E	71.30	0.028	0.606	0.359		0.298							
645	H21-09	H21-10	6	E	215.40	0.035	0.677	0.368		0.307							
647	H17-07	H17-16	8	E	252.39	0.001	0.247	0.052		0.045							
649	H17-16	H17-20	8	E	262.82	0.002	0.349	0.104		0.089							
651	H17-20	H17-25	8	E	265.49	0.002	0.349	0.155		0.133							
653	H17-25	H18-07	8	E	327.63	0.002	0.349	0.207		0.178							
655	H18-07	H18-15	8	E	460.14	0.005	0.551	0.333		0.296							
657	H18-15	H19-15	8	E	529.47	0.001	0.247	0.384		0.341							

TABLE 12
CITY OF LAKEPORT
2008 MASTER SEWER PLAN
HYDRAULIC MODEL SEWER CAPACITY AND FLOW SUMMARY

Model Pipe ID No.	From Model Manhole	To Model Manhole	Sewer Diameter (in)	Existing Or Future	Length (ft)	Sewer Slope (ft/ft)	Pipe Capacity (MGD)	2008		2028				Comments		
								Model PWWF (MGD)	PWWF Surcharge (ft)	Model PWWF (MGD)	Estimated PWWF Surcharge (ft)	REPLACEMENT SEWER			PARALLEL SEWER	
												Size (in)	Capacity (MGD)		Size (in)	Capacity (MGD)
659	H15-03	H15-07	8	E	323.72	0.003	0.427	0.569	4.0	0.554	4.0	10	0.77	6	0.20	North Main St. ⁽³⁾⁽⁴⁾
661	H15-07	H15-10	8	E	240.22	0.003	0.427	0.592	4.0	0.554	4.0	10	0.77	8	0.42	North Main St. ⁽³⁾⁽⁴⁾
663	F19-01	F19-02	6	E	130.76	0.025	0.573	0.064		0.050						
665	F19-02	G19-02	6	E	306.14	0.017	0.472	0.149		0.122						
667	G19-02	G19-01	8	E	19.75	0.143	2.949	0.206		0.166						
669	H12-12	H12-17	8	E	93.41	0.025	1.233	0.213		0.287						
671	H12-16	H12-17	8	E	27.35	0.078	2.178	1.027		1.035						
673	E20-01	F20-03	8	E	287.73	0.012	0.854	0.073		0.155						
675	H23-06	H23-07	6	E	301.34	0.016	0.458	0.021		0.038						
679	H19-15	C St PS	8	E	24.36	0.014	0.923	0.387		0.344						
685	H21-11	Lakeport PS	12	E	70.30	0.048	5.037	1.549		1.834						
693	F22-06	F22-07	15	E	75.00	0.006	3.229	3.762		3.762						See foot note ⁽¹⁾
695	F22-07	F22-08	15	E	341.00	0.041	8.441	3.765		3.778						See foot note ⁽¹⁾
697	F22-08	F22-09	15	E	398.00	0.027	6.850	3.766		3.780						See foot note ⁽¹⁾
699	F22-09	G23-01	15	E	400.00	0.018	5.593	3.768		3.781						See foot note ⁽¹⁾
701	G23-01	G23-04	15	E	400.00	0.019	5.746	3.770		3.805						See foot note ⁽¹⁾
703	G23-04	G24-01	15	E	400.00	0.015	5.106	3.772		3.806						See foot note ⁽¹⁾
705	G24-01	G24-02	15	E	400.00	0.009	3.955	3.774		3.829						See foot note ⁽¹⁾
707	G24-02	G24-03	21	E	400.00	0.001	3.233	3.776		3.831						See foot note ⁽¹⁾
709	G24-03	G25-01	21	E	184.50	0.001	3.233	3.777		3.832						See foot note ⁽¹⁾
711	G25-01	G25-02	24	E	400.00	0.001	4.617	3.779		3.834						See foot note ⁽¹⁾
713	G25-02	G25-03	24	E	400.00	0.001	4.617	3.781		3.835						See foot note ⁽¹⁾
715	G25-03	H26-01	24	E	400.00	0.001	4.617	3.782		3.836						See foot note ⁽¹⁾
717	H26-01	H26-02	24	E	400.00	0.001	4.617	3.783		3.838						See foot note ⁽¹⁾
719	H26-02	H26-03	24	E	273.50	0.001	4.617	3.784		3.839						See foot note ⁽¹⁾
721	H26-03	H27-01	24	E	223.00	0.001	4.617	3.785		3.840						See foot note ⁽¹⁾
723	H27-01	92 SIPHON UP	18	E	26.39	0.145	25.812	2.509		2.548						See foot note ⁽¹⁾
725	H27-04	H27-05	24	E	400.00	0.002	6.529	3.789		3.846						See foot note ⁽¹⁾
727	H27-05	H27-06	24	E	400.00	0.001	4.617	3.791		3.847						See foot note ⁽¹⁾
729	H27-06	H28-03	24	E	171.00	0.001	4.617	3.792		3.848						See foot note ⁽¹⁾
731	H28-03	H28-02	24	E	250.00	0.001	4.617	3.793		3.850						See foot note ⁽¹⁾
733	H28-02	H28-01	24	E	271.50	0.001	4.617	3.794		3.851						See foot note ⁽¹⁾
735	H28-01	Linda Ln PS	24	E	54.00	0.001	4.617	3.795		3.852						See foot note ⁽¹⁾
741	G19-05	Martin St PS	8	E	84.30	0.035	1.459	1.614	10.0	1.042						
743	H12-17	Lakeshore PS	10	E	34.99	0.079	3.974	1.244		1.325						
755	G19-07	96	8	E	99.50	0.024	1.208	0.262		0.309						
757	88	76	12	E	5.00	0.100	7.271	0.761		0.764						
761	90	74	20	E	5.00	0.200	40.150	5.358		5.354						
763	F17-04	F17-05	8	E	110.56	0.008	0.697	0.123		0.111						
765	G20-06	102	6	E	134.61	0.013	0.413	0.385		0.586	1.7					
767	92	H27-04 SIPHON DOWN	18	E	31.48	0.119	23.384	2.510		2.549						
769	H27-01	94 SIPHON UP	8	E	26.61	0.144	2.959	1.277		1.294						
771	94	H27-04 SIPHON DOWN	8	E	31.55	0.119	2.690	1.278		1.296						
773	96	Martin St PS	8	E	135.74	0.007	0.652	0.377		0.447						
775	98	G10-04	10	E	427.54	0.021	2.049	0.014		0.018						
777	102	86	12	E	29.49	0.156	9.081	0.385		0.614						

- (1) PWWF flows in the Parallel Drive gravity sewer based on Larrecou Lift Station Pumping Capacity.
- (2) Minimum sewer size to be 8-inch.
- (3) City to observe these sewers during future PWWF conditions to verify if significant surcharging is occurring prior to performing recommended improvements.
- (4) Peak flows will be reduced on this sewer segment if the Rose Ave. L.S. is diverted to the north per proposed City and County agreement.
- (5) Peak flows will be increased on this sewer segment if the Rose Ave. L.S. is diverted to the north per proposed City and County agreement.

TABLE 13
City of Lakeport
2008 MASTER SEWER PLAN
INFILTRATION AND INFLOW REDUCTION PROGRAM

	Approx 2008 I&I				Phase 2 - Sewer Repair and Replacement ⁽³⁾															Total Project Cost	Ultimate Estimated I&I Reduction				
	Subservice Area	Existing Sewered Area (Ac)	MGD	GPAD	Sewer Size (inches)	Estimated Length (ft)	MH's	Estimated # of Laterals ⁽¹⁾⁽²⁾	Grout Sealing (ft) ⁽⁴⁾	Sealing Costs (\$) ⁽⁵⁾	MH's Repaired (ea) ⁽⁶⁾	MH's Repair Costs (\$) ⁽⁶⁾	MH's Replaced (ea) ⁽⁷⁾	MH's Replaced (\$) ⁽⁷⁾	Sewer Repair or Replacement			Lateral Repairs			%	(MGD)			
															Main	Length	Unit Cost	Total Cost	Number ⁽¹⁰⁾				Cost @ \$6,700 ea.		
INITIAL I&I REDUCTION TARGET AREA (2008 to 2018)	9B	28.6	0.33	11,550	8	300	11	86	60	\$300	1	\$4,000	1	\$6,000	8	60	\$163	\$9,800	17	\$113,900	\$319,100	60%	0.198		
					6	3,540			708	\$3,700			6	708	\$158	\$111,900									
					4	2,130			426	\$2,200			4	426	\$158	\$67,300									
	7C	2	0.013	6,700	6	250	1	8	50	\$300	0	\$0	0	\$0	6	50	\$158	\$7,900	2	\$13,400	\$21,600	75%	0.010		
	9C	10.5	0.062	5,950	6	890	5	23	178	\$900	0	\$0	0	\$0	6	178	\$158	\$28,100	5	\$33,500	\$79,400	65%	0.040		
					4	520			104	\$500			4	104	\$158	\$16,400									
	4B	28	0.161	5,740	8	1,150	13	18	230	\$1,200	1	\$4,000	1	\$6,000	8	230	\$163	\$37,500	4	\$26,800	\$144,400	75%	0.121		
					6	1,230			246	\$1,300			6	246	\$158	\$38,900									
					4	880			176	\$900			4	176	\$158	\$27,800									
	13A	33.9	0.179	5,270	8	2,260	22	102	452	\$2,400	2	\$8,000	2	\$12,000	8	452	\$163	\$73,700	20	\$134,000	\$321,500	50%	0.090		
					6	2,370			474	\$2,500			6	474	\$158	\$74,900									
					4	430			86	\$400			4	86	\$158	\$13,600									
3C	27.6	0.137	5,010	8	2,500	14	53	500	\$2,600	1	\$4,000	1	\$6,000	8	250 ⁽¹¹⁾	\$163	\$38,300	6 ⁽¹²⁾	\$40,200	\$127,800	35%	0.048			
				6	745			149	\$800			6	149	\$158	\$23,500										
				4	380			76	\$400			4	76	\$158	\$12,000										
SUBSEQUENT I&I REDUCTION TARGET AREA (2018 to 2028)	10B	44.5	0.201	4,510	8	2,185	23	100	437	\$2,300	2	\$8,000	2	\$12,000	8	437	\$163	\$71,200	20	\$134,000	\$303,200	50%	0.101		
					6	2,320			464	\$2,400			6	464	\$158	\$73,300									
	7B	5.3	0.022	4,210	8	227	3	15	45	\$200	0	\$0	0	\$0	8	45.4	\$163	\$7,400	3	\$20,100	\$58,900	60%	0.013		
					6	380			76	\$400			6	76	\$158	\$12,000									
					4	575			115	\$600			4	115	\$158	\$18,200									
	1B	32.9	0.139	4,210	8	460	16	40	92	\$500	2	\$8,000	2	\$12,000	8	92	\$163	\$15,000	8	\$53,600	\$189,900	65%	0.090		
					6	3,090			618	\$3,200			6	618	\$158	\$97,600									
					4	1,780			356	\$1,900			4	356	\$158	\$56,200									
	9A	23	0.094	4,080	8	1,350	10	30	270	\$1,400	1	\$4,000	1	\$6,000	8	270	\$163	\$44,000	6	\$40,200	\$142,000	55%	0.052		
					6	1,360			272	\$1,400			6	272	\$158	\$43,000									
					4	60			12	\$100			4	12	\$158	\$1,900									
	SUBTOTAL INITIAL I&I TARGET AREA		130.6	0.882			19,575	66	290	3,915	\$20,400	5	\$20,000	5	\$30,000		3415		\$726,100	48	\$361,800	\$1,013,800		0.506	
TOTAL ALL HIGH I&I AREAS		297.3	1.588			36,492	133	540	7,298	\$38,000	12	\$48,000	12	\$72,000		6,798		\$1,121,200	98	\$696,800	\$1,976,000		0.912		

NOTES:

- (1) Laterals refer to the sewer pipe serving the property from the sewer main to the property line (i.e., lateral in the public right-of-way).
- (2) House connection refers to the sewer pipe on private property from the property line to the structure being served.
- (3) All costs include 25% engineering and 15% contingency and are based on prevailing wages and Contractor costs.
- (4) Grout sealing of mainline sewers assumes that 20% of the sewers in the high I&I target areas will require sealing.
- (5) Grout sealing costs based on 10-foot sewer pipe segments. \$52/joint includes 40% Engineering and contingency.
- (6) Cost for manhole repairs based on 10% of the existing MHs needing some type of repair. Repair cost \$4,000/MH.

- (7) Cost for manhole replacement based on 10% of the existing MHs needing replacement. Replacement cost \$6,000/MH.
- (8) Replacement and/or repair of sewers is based on 20% of the existing sewers needing some type of replacement or repair (i.e., lining, pipe bursting, etc.).
- (9) Replacement sewer costs assume pavement restoration and sewer depth less than 8 feet deep.
- (10) Replacement and/or repair of laterals is based on 20% of the existing laterals needing some type of replacement or repair (i.e., lining, pipe bursting, etc.).
- (11) Due to previous rehabilitation project completed in 1994, replacement and/or repair of sewers in this area is based on only 10% of the existing sewers needing some type of replacement or repair (i.e., lining, pipe bursting, etc.).
- (12) Due to previous rehabilitation project completed in 1994, replacement and/or repair of laterals in this area is based on only 10% of the existing laterals needing some type of replacement or repair (i.e., lining, pipe bursting, etc.).

MGD = Million Gallons Per Day
GPAD = Gallons Per Acre Per Day

TABLE 14
CITY OF LAKEPORT
2008 MASTER SEWER PLAN
PRELIMINARY COST ESTIMATES FOR MAJOR SEWER
SYSTEM IMPROVEMENTS

ITEM NO.	PROJECT NAME DESCRIPTION	PROJECT YEAR			
		COST IN JUNE 2008 DOLLARS ⁽¹⁾			
		Near Term 2008 TO 2013	Intermediate 2013 TO 2018	Long Term 2018 TO 2028	
1	Main Street Sewer Replacement 12" Sewer Replacement Pt. 1 to 2	\$220,000			
2	Treatment Plant - Replace Chlorine Gas System Hypochlorite System See Fig. 2	\$300,000			
3	Treatment Plant - Inspect & Clean Chlorine Contact Pipe Inspect/restore Chlorine Contact pipe capacity See Fig. 2	\$80,000			
4	Treatment Plant - Modify Recycle Pump Station No. 1 Modify pump station for time-of-use operation See Fig. 2	\$25,000			
5	Lift Station Radio Telemetry and SCADA Improvements Install Radio Telemetry in 5 lift stations Install SCADA	\$30,000	\$250,000		
6	I&I Reduction Program - Initial Target Areas ⁽⁵⁾ Subservice Areas 3A & 13C See Plate 1 & 2 Subservice Areas 4B, 7C, 9C, & 9B See Plate 1 & 2	\$450,000	\$564,000		
7	Linda Lane Lift Station Odor Control Install larger blower at lift station See Fig. 2	\$12,000			
8	Lakeshore Blvd and N High Street Parallel Sewer 8" Parallel Sewer Pt. 4 to 5		\$180,000		
9	Clearlake Lift Station Replacement L.S. Pt. 10 Replacement ⁽²⁾		\$205,000		
10	Treatment Plant - Repair Aeration Basins & Remove Sludge Repair Aeration Basin 1 See Fig. 2 ⁽³⁾⁽⁴⁾ Repair Aeration Basin 2 See Fig. 2 ⁽³⁾⁽⁴⁾		\$100,000 \$100,000		
11	Main Street Parallel Sewer 15" Parallel Sewer Pt. 1 to 3		\$715,000		
12	N High Street Sewer Replacement 8" Replacement Sewer Pt. 6 to 7		\$60,000		
13	Martin Street Parallel Sewer 8" Parallel Sewer Pt. 11 to 12		\$250,000		
14	I&I Reduction Program - Subsequent High I&I Areas ⁽⁵⁾ Subservice Areas 1B, 7A, 7B, 9A, & 10B See Plate 1 & 2			\$962,000	
15	10th Street Parallel Sewer 8" Parallel Sewer Pt. 8 to 9			\$192,000	
16	Treatment Plant - Install 20" Chlorine Contact Pipe Increase PWWF chlorine contact time See Fig. 2			\$170,000	
17	Martin Street Lift Station Capacity Improvements Increase L.S. Effective Pump Capacity Pt. 11			\$60,000	
18	Russell Street Sewer Replacement 8" Replacement Sewer Pt. 13 to 14			\$81,000	
TOTAL ESTIMATED PROJECT COSTS (June 2008 Dollars) ⁽¹⁾		\$1,117,000	\$2,424,000	\$1,465,000	\$5,006,000
I&I Reduction Costs		\$450,000	\$564,000	\$962,000	\$1,976,000
General Fund Costs		\$262,000	\$1,660,000	\$333,000	\$2,255,000
Treatment Plant Improvements		\$405,000	\$200,000	\$170,000	\$775,000

¹ Estimated project costs include 40% allowance for indirect costs and contingencies, but exclude inflation and financing costs.

² Replacement cost for Clearlake Ave L.S.

³ Aeration basin slope repair costs based on installation of rip rap armament placed along the aeration slopes.

⁴ Cost for sludge removal does not include disposal landfill trucking and disposal costs.

⁵ The I&I reduction area costs are order of magnitude costs based on preliminary sewer repairs and I&I monitoring data. Additional analysis must be completed by the City as a part of the Phase 1 work before definite costs can be determined.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. 98-207

WASTE DISCHARGE REQUIREMENTS
FOR
CITY OF LAKEPORT
MUNICIPAL SEWER DISTRICT
LAKE COUNTY

The California Regional Water Quality Control Board, Central Valley Region, (hereafter Board) finds that:

1. The City of Lakeport Municipal Sewer District (hereafter Discharger) owns and operates a wastewater collection, treatment and disposal system which serves the City of Lakeport. The property (Assessor's Parcel No(s). 007-003-43 and 46, and 005-035-06, 16 and 18) is owned by the Discharger.
2. Waste Discharge Requirements Order No. 92-196, adopted by the Board on 25 September 1992, prescribed requirements for a discharge from the City of Lakeport Municipal Sewer District No. 1 to a storage reservoir and land application area.
3. Order No. 92-196 is neither adequate nor consistent with current plans and policies of the Board.
4. Currently, the Discharger treats approximately 1.05 million gallons per day (mgd) of municipal sewage in a baffled pond system. The effluent is disinfected prior to discharge to a storage reservoir and then to a land application area on Parallel Drive, southwest of downtown Lakeport, as shown in Attachment A, which is attached hereto and part of the Order by reference. The capacity of the storage reservoir is 650 acre-feet and the land application area consists of approximately 340 irrigated acres.
5. The City of Lakeport's treatment and storage system is in Section 36, T14N, R10W, MDB&M, and the land application area is in Section 1, T13N, R10W, MDB&M, with surface water drainage to Clear Lake, as shown in Attachment B, which is attached hereto and part of the Order by reference.
6. The Board adopted a Water Quality Control Plan, Fourth Edition, for the Sacramento River and San Joaquin River Basins (hereafter Basin Plan), which contains water quality objectives for all waters of the Basin. These requirements implement the Basin Plan.
7. The beneficial uses of Clear Lake are municipal, industrial, and agricultural supply; recreation; aesthetic enjoyment; navigation; ground water recharge; fresh water replenishment; hydropower generation; and preservation and enhancement of fish, wildlife, and other aquatic resources.
8. The beneficial uses of underlying ground water are domestic, industrial, and agricultural supply.
9. The Basin Plan encourages reclamation.
10. The action to update waste discharge requirements for this facility is exempt from the provisions of the California Environmental Quality Act (CEQA), in accordance with Title 14, California Code of Regulations (CCR), Section 15301.
11. This discharge is exempt from the requirements of Consolidated Regulations for Treatment, Storage, Processing, or Disposal of Solid Waste, as set forth in Title 27, CCR, Division 2,

WASTE DISCHARGE REQUIREMENTS ORDER NO. 98-207
CITY OF LAKEPORT
MUNICIPAL SEWER DISTRICT
LAKE COUNTY

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Subdivision 1, Section 20005, et seq. (hereafter Title 27). The exemption, pursuant to Section 20090(b), is based on the following:

- a. The Board is issuing waste discharge requirements, and
 - b. The discharge complies with the Basin Plan, and
 - c. The wastewater does not need to be managed according to Title 22, CCR, Division 4.5, Chapter 11, as a hazardous waste.
12. The Board has notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for this discharge and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.
 13. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED that Order No. 92-196 is rescinded and the City of Lakeport Municipal Sewer District, its agents, successors, and assigns, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, shall comply with the following:

A. Discharge Prohibitions:

1. Discharge of wastes to surface waters or surface water drainage courses is prohibited.
2. Bypass or overflow of untreated or partially treated waste is prohibited.
3. Discharge of waste classified as 'hazardous', as defined in Sections 2521(a) of Title 23, CCR, Section 2510, et seq. (hereafter Chapter 15), or 'designated', as defined in Section 13173 of California Water Code, is prohibited.

B. Discharge Specifications:

1. The monthly average dry weather discharge flow shall not exceed 1.05 mgd.
2. The maximum daily discharge shall not exceed 3.8 million gallons.
3. The discharge shall not cause degradation of any water supply.
4. Objectionable odors originating at this facility shall not be perceivable beyond the limits of the wastewater treatment and disposal areas.
5. As a means of discerning compliance with Discharge Specification No. 4, the dissolved oxygen content in the upper zone (1 foot) of wastewater in ponds and the storage reservoir shall not be less than 1.0 mg/l.
6. The treatment facilities shall be designed, constructed, operated and maintained to prevent inundation or washout due to floods with a 100-year return frequency.

WASTE DISCHARGE REQUIREMENTS ORDER NO. 98-207
 CITY OF LAKEPORT
 MUNICIPAL SEWER DISTRICT
 LAKE COUNTY

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7. Treatment plant effluent (Sample Location L-1) and storage reservoir effluent (Sample Location L-2) shall not exceed the following Limits:

<u>Constituent</u>	<u>Units</u>	<u>Monthly Average</u>	<u>Daily Maximum</u>
Settleable Solids	ml/l	0.2	0.5
Coliform ¹	MPN	23	500

¹ Coliform limits are applicable after chlorination.

8. Ponds shall not have a pH less than 6.5 or greater than 8.5.
9. Ponds shall be managed to prevent breeding of mosquitoes. In particular,
- An erosion control program should assure that small coves and irregularities are not created around the perimeter of the water surface.
 - Weeds shall be minimized.
 - Dead algae, vegetation, and debris shall not accumulate on the water surface.
10. Public contact with wastewater shall be precluded through such means as fences, signs and other acceptable alternatives.
11. Treatment ponds and the storage reservoir shall have sufficient capacity to accommodate allowable wastewater flow, design seasonal precipitation and ancillary inflow and infiltration during the nonirrigation season. Design seasonal precipitation shall be based on total annual precipitation using a return period of 100 years, distributed monthly in accordance with historical rainfall patterns. The effluent storage reservoir freeboard shall never be less than two (2.0) feet (measured vertically at the spillway) except during years equaling or exceeding the precipitation of a 100-year return period. Treatment ponds shall never have a freeboard of less than 2.0 feet (measured vertically).
12. On or about 1 October of each year, available pond storage capacity shall at least equal the volume necessary to comply with Discharge Specification No. 11.

C. Sludge Disposal:

- Collected screenings, sludges and other solids removed from liquid wastes shall be disposed of in a manner that is consistent with Consolidated Regulations for Treatment, Storage, Processing, or Disposal of Solid Waste, as set forth in Title 27, CCR, Division 2, Subdivision 1, Section 20005, et seq. and approved by the Executive Officer.
- Any proposed change in sludge use or disposal practice from a previously approved practice shall be reported to the Executive Officer and U.S. Environmental Protection Agency (EPA) Regional Administrator at least 90 days in advance of the change.
- Use and disposal of sewage shall comply with existing Federal and State laws and regulations, including permitting requirements and technical standards included in 40 CFR 503.

WASTE DISCHARGE REQUIREMENTS ORDER NO. 98-207
CITY OF LAKEPORT
MUNICIPAL SEWER DISTRICT
LAKE COUNTY

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If the State Water Resources Control Board and the Regional Water Quality Control Boards are given the authority to implement regulations contained in 40 CFR 503, this Order may be reopened to incorporate appropriate time schedules and technical standards. The Discharger must comply with the standards and time schedules contained in 40 CFR 503 whether or not they have been incorporated into this Order.

4. The Discharger is encouraged to comply with the State Guidance Manual issued by the Department of Health Services titled *Manual of Good Practice for Landspreading of Sewage Sludge*.

D. Wastewater Reclamation Prohibitions:

1. Spray irrigation of orchards and vineyards with undisinfected reclaimed water is prohibited.
2. Grazing of milking animals within the area irrigated with effluent is prohibited.

E. Wastewater Reclamation Specifications:

1. Use of reclaimed water shall be limited to surface irrigation of orchards, vineyards, and fodder, fiber and seed crops.
2. If spray irrigation of orchards and vineyards is initiated, reclaimed water shall be adequately disinfected, oxidized, coagulated, clarified and filtered as required by Title 22, CCR, Division 4, Section 60301, et seq. For adequate disinfection, the 7-day median number of coliform organisms shall not exceed 23 MPN per 100 milliliters.
3. Public contact with reclaimed water shall be precluded through such means as fences, signs and irrigation management practices. Fence and sign requirements will be at the direction of the County Health Officer.
4. Areas irrigated with reclaimed water shall be managed to prevent breeding of mosquitoes. More specifically,
 - a. Tail water must be returned and all applied irrigation water must infiltrate completely within a 48-hour period.
 - b. Ditches not serving as wildlife habitat should be maintained free of emergent, marginal and floating vegetation.
 - c. Low-pressure and unpressurized pipelines and ditches accessible to mosquitoes shall not be used to store reclaimed water.
5. Reclaimed water for irrigation shall be managed to minimize erosion, runoff and movement of aerosols from the disposal area.
6. Direct or windblown spray shall be confined to the designated reclamation area and prevented from contacting drinking water facilities.
7. The Discharger may not spray irrigate effluent during periods of precipitation and for at least 24 hours after cessation of precipitation, or when winds exceed 30 mph.

WASTE DISCHARGE REQUIREMENTS ORDER NO. 98-207
CITY OF LAKEPORT
MUNICIPAL SEWER DISTRICT
LAKE COUNTY

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- 8. Signs with proper wording of sufficient size shall be placed at areas of access and around the perimeter of all areas used for effluent disposal to alert the public of the use of reclaimed water.
- 9. A 100 foot setback distance/buffer zone shall be maintained for all additions to the reclamation area from 1 January 1992 forward. The buffer zone is meant to separate the storage and use of the wastewater from domestic wells and property lines.

F. Wastewater Reclamation Provisions:

- 1. For the purposes of this Order, "spray irrigation" means application of reclaimed water to crops by sprinklers and "surface irrigation" means application by flood or furrow irrigation.
- 2. Reclaimed water controllers, valves, etc., shall be affixed with reclaimed water warning signs as required by the County Health Officer. The wastewater reclamation system shall be secured in a manner that permits operation by authorized personnel only and prevents operations that would cause a violation of this Order.
- 3. A revised contingency plan, including notification of the Board and health agencies and outlining actions to be taken when effluent quality fails to meet required standards or in the case of an unauthorized release of effluent, shall be submitted within 90 days after adoption of this Order.
- 4. If the Discharger intends to use reclaimed water on crops other than those specified in an accepted land management plan, it shall first submit a written report demonstrating to the satisfaction of the Executive Officer, that management of reclaimed water and irrigated properties will assure compliance with the terms of this Order.
- 5. If reclaimed water is used for construction purposes, it shall comply with the most current edition of "Guidelines for Use of Reclaimed Water for Construction Purposes". Other uses of reclaimed water not specifically authorized herein shall be subject to the approval of the Executive Officer and shall comply with Title 22, CCR, Division 4.

G. Ground Water Limitation:

- 1. The discharger, in combination with other sources, shall not cause underlying ground water to be degraded.

H. Provisions:

- 1. The Discharger shall comply with the Monitoring and Reporting Program No. 98-207, which is part of this Order, and any revisions thereto as ordered by the Executive Officer.
- 2. The Discharger shall comply with the following time schedule to assure compliance with Groundwater Limitation No. 1 of this Order:

<u>Task</u>	<u>Report Due</u>
Submit proposed groundwater assessment work plan	1 July 1999

WASTE DISCHARGE REQUIREMENTS ORDER NO. 98-207
 CITY OF LAKEPORT
 MUNICIPAL SEWER DISTRICT
 LAKE COUNTY

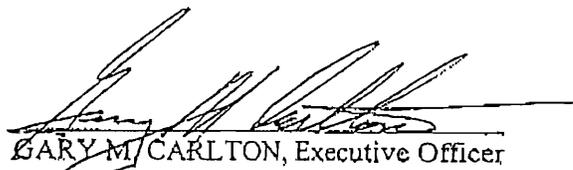
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3. The Discharger shall comply with the following time schedule to resolve capacity issues related to high inflow and infiltration (I/I).

<u>Task</u>	<u>Compliance Date</u>
a. Status Report on I/I Impacts to WWTP due to lake level and high ground water	Annually, 1 June
b. I/I assessment report describing I/I correction plan, critical areas, time schedule and costs	1 June 1999

4. The Discharger shall comply with the "Standard Provisions and Reporting Requirements for Waste Discharge Requirements", dated 1 March 1991, which are attached hereto and by reference a part of this Order. This attachment and its individual paragraphs are commonly referenced as "Standard Provision(s)."
5. In the event of any change in control or ownership of land or waste discharge facilities described herein, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to this office.
6. At least 90 days prior to termination or expiration of any lease, contract, or agreement involving disposal or reclamation areas or off-site reuse of effluent, used to justify the capacity authorized herein and assure compliance with this Order, the Discharger shall notify the Board in writing of the situation and of what measures have been taken or are being taken to assure full compliance with this Order.
7. The Discharger must comply with all conditions of this Order, including timely submittal of technical and monitoring reports as directed by the Executive Officer. Violations may result in enforcement action, including Board or court orders requiring corrective action or imposing civil monetary liability, or in revision or rescission of this Order.
8. A copy of this Order shall be kept at the discharge facility for reference by operating personnel. Key operating personnel shall be familiar with its contents.
9. The Board will review this Order periodically and will revise requirements when necessary.

I, GARY M. CARLTON, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 23 October 1998.


 GARY M. CARLTON, Executive Officer

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. 98-207

FOR
CITY OF LAKEPORT
MUNICIPAL SEWER DISTRICT
LAKE COUNTY

EFFLUENT MONITORING

Effluent samples shall be collected just prior to discharge to the disposal facility. Effluent samples should be representative of the volume and nature of the discharge. Samples collected from the outlet structure of ponds will be considered adequately composited. Time of collection of a grab sample shall be recorded. Effluent monitoring shall include at least the following:

<u>Constituents</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>	<u>Sample Location</u>
Flow to Sewage Treatment Facility	mgd	Cumulative	Daily	At Pumps
Flow from Sewage Treatment Facility	mgd	Cumulative	Daily	L-1
Flow to Irrigation Areas	mgd	Cumulative	Daily	L-2
BOD ₅ 20°C	mg/l	Grab	Weekly	L-1
Suspended Matter	mg/l	Grab	Weekly	L-1
Settleable Matter	ml/l	Grab	Weekly	L-1
Specific Conductivity	µmhos/cm	Grab	Weekly	L-2
pH	pH Units	Grab	Weekly	L-2
Total Coliform Organisms	MPN/100 ml	Grab	Weekly	L-2
Nitrates as N	mg/l	Grab	Monthly	L-2
Total Dissolved Solids	mg/l	Grab	Monthly	L-2
Standard Minerals	mg/l	Grab	Annually	L-2

*L-2 monitoring station
in the pond*

Sample location L-1 is the effluent end of the pond treatment system
Sample location L-2 is prior to use as irrigation water

STORAGE RESERVOIR MONITORING

The storage reservoir shall be monitored for dissolved oxygen in accordance with the following protocol:

1. When laboratory results for treatment plant effluent is under 30 mg/l BOD₅ Day 20°C, the storage reservoir need not be tested for dissolved oxygen.
2. The Discharger shall initiate monitoring of the storage reservoir dissolved oxygen levels when the results of one laboratory BOD₅ 20°C is greater than 30 mg/l. The monitoring shall continue through two consecutive weekly BOD laboratory results under 30 mg/l. The storage reservoir shall be monitored for dissolved oxygen at the one foot depth and at each 5 foot incremental depth to the bottom of the reservoir. The monitoring shall be done at the deepest part of the reservoir only. Dissolved oxygen monitoring shall be conducted weekly.

MONITORING AND REPORTING PROGRAM NO. 98-207
 CITY OF LAKEPORT
 MUNICIPAL SEWER DISTRICT
 LAKE COUNTY

-2-

SLUDGE MONITORING

A composite sample of sludge shall be collected annually in accordance with EPA's *POTW Sludge Sampling and Analysis Guidance Document, August 1989*, and tested for the following metals:

Cadmium	Copper	Lead
Chromium	Zinc	Nickel

Sampling records shall be retained for a minimum of five years. A log shall be kept of sludge quantities generated and of handling and disposal activities. The frequency of entries is discretionary; however, the log should be complete enough to serve as a basis for part of the annual report.

WATER SUPPLY MONITORING

A sampling station shall be established where a representative sample of the municipal water supply can be obtained. Water supply monitoring shall include at least the following:

<u>Constituents</u>	<u>Units</u>	<u>Sampling Frequency</u>
pH	pH unit	Annually
Electrical Conductivity @ 25°C	µmhos/cm	Annually
Total Dissolved Solids	mg/l	Annually
Standard Minerals	mg/l	Annually

GROUND WATER MONITORING

Ground water shall be monitored quarterly for the first year after installation of the monitoring wells and semi-annually thereafter. Monitoring wells shall be tested for the presence of coliform organisms, pH, specific conductivity, Nitrates as NO₃, ground water elevation and flow gradients.

REPORTING

In reporting the monitoring data, the Discharger shall arrange the data in tabular form so that the date, the constituents, and the concentrations are readily discernible. The data shall be summarized in such a manner to illustrate clearly the compliance with waste discharge requirements.

Monthly monitoring reports shall be submitted to the Board by the 15th day of the following month.

The results of any monitoring done more frequently than required at the locations specified in the Monitoring and Reporting Program shall be reported to the Board.

MONITORING AND REPORTING PROGRAM NO. 98-207
CITY OF LAKEPORT
MUNICIPAL SEWER DISTRICT
LAKE COUNTY

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The Discharger shall submit a report to the Board by 30 March of each year. The report shall contain both tabular and graphical summaries of the monitoring data obtained during the previous year. In addition, the Discharger shall discuss the compliance record and the corrective actions taken or planned which may be needed to bring the discharge into full compliance with the waste discharge requirements.

The Discharger shall implement the above monitoring program as of the date of this Order.

Ordered by:

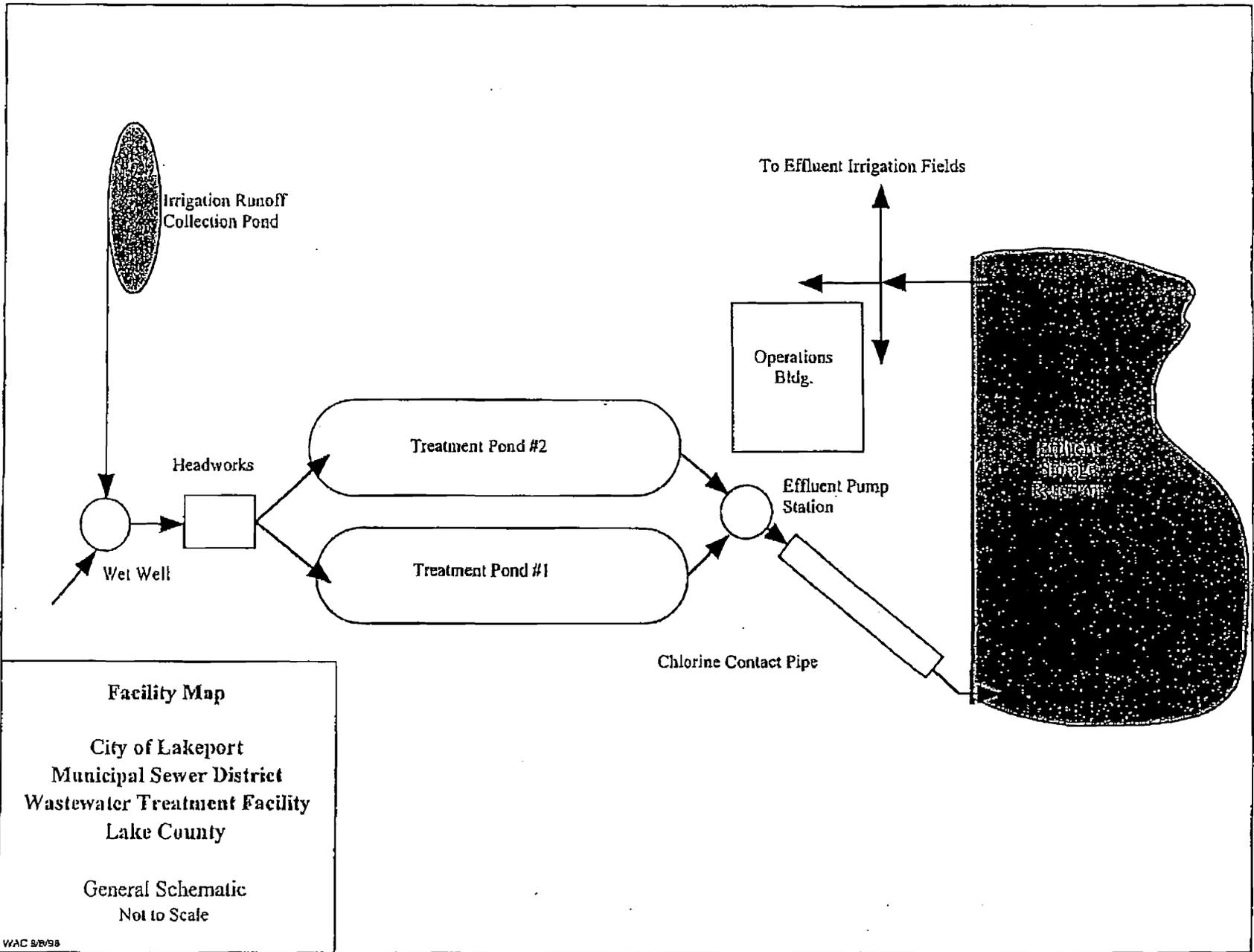

GARY M. CARLTON, Executive Officer

23 October 1998

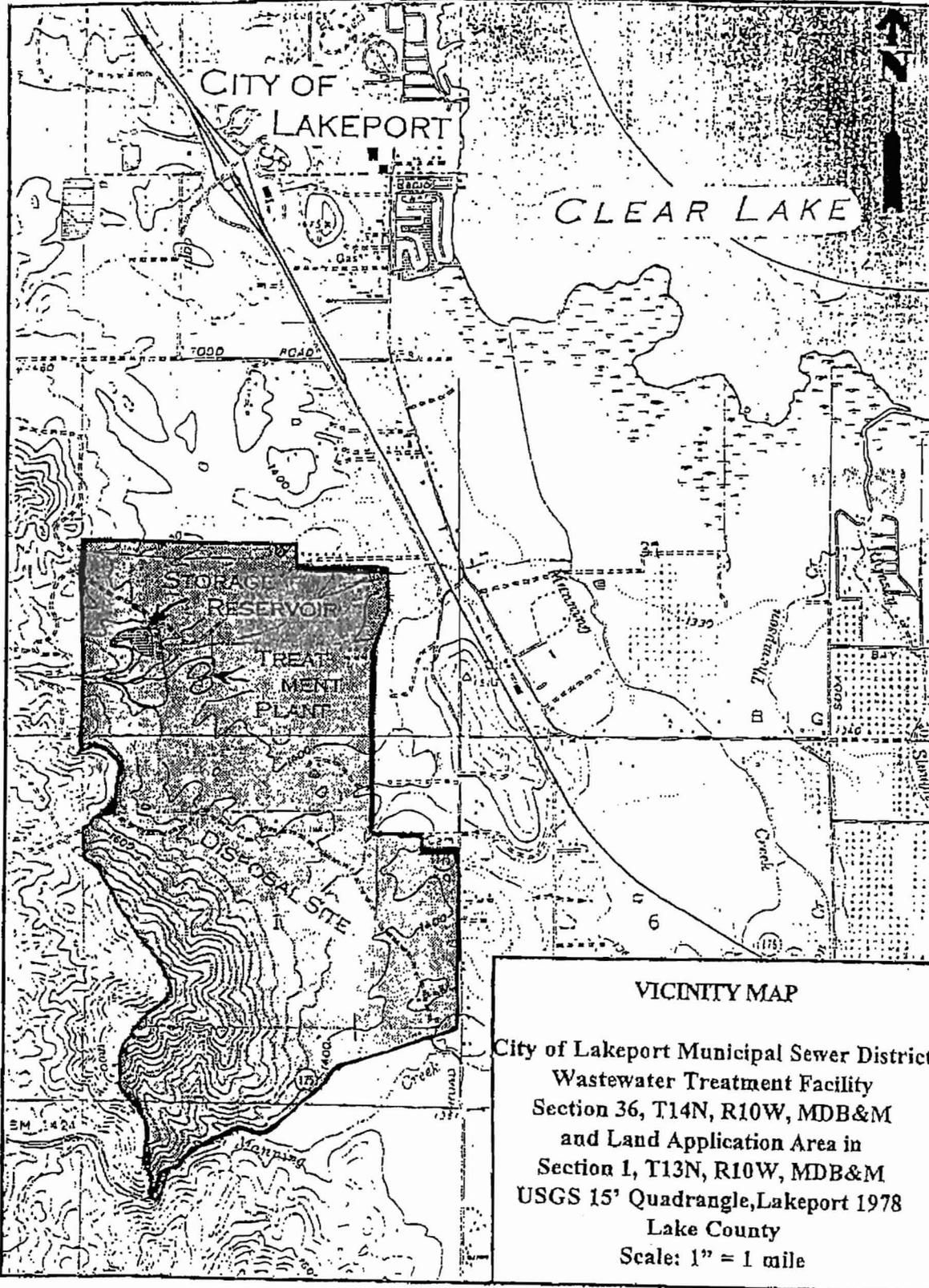
(Date)

AMENDED

wac/lfb:lakeport.mrp



ATTACHMENT B



INFORMATION SHEET

CITY OF LAKEPORT
MUNICIPAL SEWER DISTRICT
LAKE COUNTY

The City of Lakeport is on the northwestern shore of Clear Lake in Lake County. The City currently treats approximately 1.05 mgd of municipal sewage in a baffled pond system. After treatment and disinfection, the effluent is pumped into a storage reservoir and used for land application. The maximum daily discharge shall not exceed 3.8 million gallons. The storage capacity of the storage reservoir is 650 acre-feet and the land application area consists of approximately 340 irrigated acres. The property used for wastewater reclamation is owned by the City of Lakeport. Ground water monitoring will be conducted to assess the impact of the facility on ground water.

The beneficial uses of Clear Lake are municipal, industrial, and agricultural supply; recreation; aesthetic enjoyment; navigation; ground water recharge; fresh water replenishment; hydropower generation; and preservation and enhancement of fish, wildlife, and other aquatic resources.

The beneficial uses of underlying ground water are domestic, industrial, and agricultural supply.

The surface water drainage is to Clear Lake.

10.23.98

wac/asb.lakeport.inf



California Regional Water Quality Control Board
Central Valley Region

Karl E. Longley, ScD, P.E., Chair



Linda S. Adams
Secretary for
Environmental
Protection

Sacramento Main Office
11020 Sun Center Drive #200, Rancho Cordova, California 95670-6114
Phone (916) 464-3291 • FAX (916) 464-4645
<http://www.waterboards.ca.gov/centralvalley>

Arnold
Schwarzenegger
Governor

File
523.22

28 March 2007

Mark Brannigan
City of Lakeport Municipal Sewer District
City of Lakeport Corporation Yard
591 Martin Street
Lakeport, CA 95453

RECEIVED

APR 04 2007

PACE Civil, Inc.

CERTIFIED MAIL
7005 1160 0004 0127 2893

NOTICE OF ADOPTION
OF
CEASE AND DESIST ORDER
CITY OF LAKEPORT MUNICIPAL SEWER DISTRICT
WASTEWATER TREATMENT FACILITY
LAKE COUNTY

Cease and Desist Order (CDO) No. R5-2007-0010 for the Wastewater Treatment Facility was adopted by the California Regional Water Quality Control Board, Central Valley Region, at its 15 March 2007 meeting.

Please note that the CDO does not include a connection restriction as in the draft Order. However, the CDO has a flow limitation which states: "Effective immediately, the average monthly dry weather inflow to the wastewater treatment plant shall not exceed 0.42 million gallons per day, (calculated by averaging the flows from August through October each year) and the annual inflow (measured from October through September) shall not exceed 885 acre-feet (approximately 288 million gallons)." The City of Lakeport Municipal Sewer District (Discharger) must be aware that it is their responsibility to allocate sewer connections and not exceed the revised flow limit as required by CDO No. R5-2007-0010.

The CDO also contains compliance schedules with specific timetables for submitting reports and conducting studies to the wastewater system. The first scheduled compliance date is **1 April 2007** when irrigation with wastewater shall not be performed within 24 hours before a predicted precipitation event, during precipitation, or within 24 hours after any precipitation event, nor shall it be performed when the ground is saturated or when winds exceed 30 mph. In addition, the first scheduled reporting date is **1 June 2007**, when the City of Lakeport Municipal Sewer District must submit documentation showing that a magnetic flow meter has been installed to accurately measure the influent wastewater flows into the wastewater treatment facility.

In order to conserve paper and reduce mailing costs, a paper copy of the order has been sent only to the Discharger. Interested parties are advised that the full text of this order is available on the Regional Water Board's web site at http://www.waterboards.ca.gov/centralvalley/adopted_orders. Anyone without access to the Internet who needs a paper copy of the order can obtain one by calling Regional Water Board staff.

California Environmental Protection Agency



If you have any questions regarding the CDO, please call Guy Childs at (916) 464-4648.

Wendy Wyeles

for MARK R. LIST, Chief, P.G.
Waste Discharge to Land Unit

Enclosures - Adopted Cease and Desist Order No. R5-2007-0010

cc w/o enc: Frances McChesney, Office of Chief Counsel, State Water Board, Sacramento
Gordon Innes, Division of Water Quality, State Water Board, Sacramento
Mark Bradley, Enforcement Unit, State Water Board, Sacramento
Department of Water Resources, Sacramento
Bruce Burton, Department of Health Services, Santa Rosa
Sandy Morey, Department of Fish and Game, Rancho Cordova
Bill Jennings, California Sportfishing Alliance, Stockton
Ray Ruminski Lake County Environmental Health Department, Lakeport
Richard Knoll, Lakeport Community Development Department, Lakeport
Scott Schellinger, Schellinger Homes, Santa Rosa
Mark L. Ranft, Attorney and Counselor at Law, Ukiah
Christopher Carr, Morrison and Forestor LLC, San Francisco
Theresa A. Dunham, Somach, Simmons, and Dunn, Sacramento
Thomas Warnock, Pace Civil, Inc., Redding
Kenneth Walters, Civil Engineer, Santa Rosa
Bill Jennings, California Sportfishing Alliance, Stockton

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2007-0010

CEASE AND DESIST ORDER

FOR
CITY OF LAKEPORT MUNICIPAL SEWER DISTRICT
WASTEWATER TREATMENT FACILITY
LAKE COUNTY

TO CEASE AND DESIST
FROM DISCHARGING CONTRARY TO REQUIREMENTS

The Regional Water Quality Control Board, Central Valley Region, (hereafter referred to as "Regional Water Board") finds that:

1. Waste Discharge Requirements (WDRs) Order No. 98-207, adopted by the Regional Water Board on 23 October 1998, prescribes requirements for the wastewater system owned and operated by the City of Lakeport Municipal Sewer District (hereafter referred to as "Discharger"). Revised Monitoring and Reporting Program No. 98-207 was issued on 22 April 2004.
2. The Discharger's wastewater treatment and storage system is on the southwestern shore of Clear Lake in Section 1 of T13N, R10W, MDB&M. The facility is southwest of downtown Lakeport on the west side of Highway 29. Assessor's Parcel Numbers for the property are APN 007-003-43 and 46, and 005-035-06, 16 and 18.

Wastewater Treatment Facility

3. The WDRs prescribe requirements for the treatment and disposal of a monthly average dry weather flow not exceed 1.05 million gallons per day (mgd) and a maximum daily discharge not to exceed 3.8 million gallons.
4. The Wastewater Treatment Facility (WWTF) is comprised of a domestic wastewater collection system, a treatment facility, a storage reservoir, a tailwater recapture system and disposal fields. The collection system consists of approximately 250,000 linear feet of sewer main and laterals and collects wastewater from approximately 5,150 residents. The treatment system is designed to treat 1.05 mgd of domestic sewage in a baffled pond system. The effluent is disinfected to secondary standards prior to discharge to a 600 acre-foot storage reservoir (at two feet of freeboard) and to a land application area.
5. The Discharger states that the discharge from the storage reservoir is used to irrigate approximately 242 acres of pasture and open areas (land application areas). However, the WDRs state that the land application area consists of 340 acres. The Discharger states that 211 acres are spray irrigated and 31 acres are flood irrigated. The land application area is divided into 31 fields. On a typical irrigation day, between nine and ten fields are irrigated on an alternating schedule over a 12-hour period. A different set of irrigation fields are used each day over a three-day period.

Violations of the Waste Discharge Requirements

Spill Violations

6. Discharge Prohibition No. A.1 of WDRs Order No.98-207 states: *"Discharge of wastes to surface waters or surface water drainage courses is prohibited."*
7. Discharge Prohibition No. A.2 of WDRs Order No. 98-207 states: *"Bypass or overflow of untreated or partially treated effluent is prohibited."*
8. Since adoption of WDRs Order No. 98-207 on 23 October 1998, the Discharger has reported 64 spills from the collection system and 3 spills from the treatment system. Of these spills, 33 entered surface waters. The largest of these spills was partially treated wastewater that occurred over an 11 day period in April 2006 and was estimated between 3.6 and 6.6 million gallons. A description of these spills is presented as Attachment A of this Cease and Desist Order.
9. To prevent unauthorized discharges of wastewater to surface water and surface water drainage courses, it is appropriate to require a Spill Contingency Plan.

Storage Capacity Violations

10. Discharge Specification No. B.11 of the WDRs Order No. 98-207 states: *"Treatment ponds and the storage reservoir shall have sufficient capacity to accommodate allowable wastewater flow, design seasonal precipitation and ancillary inflow and infiltration during the nonirrigating season. Design seasonal precipitation shall be based on total annual precipitation using a return period of 100 years, distributed monthly in accordance with historical rainfall patterns. The effluent storage reservoir freeboard shall never be less than two (2.0) feet (measured vertically at the spillway) except during years equaling or exceeding the precipitation of a 100-year return period. Treatment ponds shall never have a freeboard of less than 2.0 feet (measured vertically)."*
11. Monthly self-monitoring reports show that the freeboard in the storage reservoir was less than two feet in April and May 2006.
12. The Discharger's 18 September 2006 water balance, prepared by a California Registered Engineer, shows that there is adequate storage capacity for an average dry weather flow (ADWF) of 0.57 mgd. However, at the currently permitted ADWF of 1.05 mgd, there is inadequate storage capacity. The water balance is based on 100-year annual precipitation data, 600 acre-feet of storage with two feet of freeboard, a beginning storage volume in October of each year of 100 acre-feet or less, and applying wastewater to 260 acres of disposal area (however, the actual sprayfield area is 242 acres).

Staff and the Discharger discussed how to measure the ADWF, and agreed that it is to be an average of the inflows for the months of August, September, and October each year. The ADWF for the years 2003 through 2006 ranges from 0.37 to 0.41 mgd.

Staff's California Registered Engineer worked with the Discharger to revise the water balance to reflect actual conditions and better model inflow/infiltration rates. Staff's revised water balance shows that there is adequate storage capacity for 0.35 mgd ADWF. Therefore, the Discharger does not have sufficient capacity for its current flows, in violation of the WDRs.

However, the Discharger has the ability to rapidly make two changes to increase its capacity: lower the volume remaining in the storage reservoir to 50 acre feet each October, and increase the sprayfield by 90 acres. When staff's revised water balance was changed to reflect these improvements, it shows that the Discharger has adequate storage capacity for an ADWF of 0.42 mgd.

13. The Discharger's 2006 General Plan and related documents found on 12 March 2007 at <http://www.cityoflakeport.com/docs/Project-contacts-August-2006mxd-726200635900PM.pdf> shows that it has approved projects to build 334 homes, and that it has pending applications for an additional 203 homes. If all of these projects are built, then the ADWF will increase from 0.4 mgd to 0.54 mgd, which is significantly over the calculated capacity.
14. Influent flows are currently measured using pump run times from the Linda Lane Pump Station. It is unknown when this was last calibrated and therefore to ensure that influent flows are accurately measured, it is appropriate to require that a proper flow meter be installed and all flow meters be calibrated.

Land Application Area Violations

15. Wastewater Reclamation Specification No. E.7 of the WDRs Order No. 98-207 states: *"The Discharger may not spray irrigate effluent during periods of precipitation and for at least 24 hours after cessation of precipitation or when winds exceed 30 mph."*
16. Monthly self-monitoring reports show that the Discharger has violated Wastewater Reclamation Specification No. E.7. During April 2006, rainfall occurred a total of four days and the Discharger applied wastewater to the land application areas via spray irrigation on these days. This discharge during precipitation events resulted in the discharge of wastewater to Clear Lake.

Groundwater Violations

17. Groundwater Limitations No. G.1 of the WDRs Order No. 98-207 states: *"The Discharger, in combination with other sources, shall not cause underlying groundwater to be degraded."*
18. The provisions of the WDRs and Revised Monitoring and Reporting Program (MRP) No. 98-207 require that the City of Lakeport install groundwater monitoring wells, sample the installed groundwater monitoring wells, and evaluate groundwater conditions related to the discharge of waste at the facility.

19. Five groundwater monitoring wells were installed at the WWTF and land application area in September 2004. Quarterly groundwater monitoring and sampling reports were submitted between November 2004 and December 2006. Review of the groundwater monitoring data shows that the discharge appears to have degraded groundwater when comparing the upgradient background well to the downgradient wells. Concentrations of Total Dissolved Solids (TDS), boron, iron, manganese, magnesium, potassium, sodium, and chloride in the downgradient wells are higher than those in the upgradient background well. The discharge of waste from the City of Lakeport's WWTF has violated the Groundwater Limitations of WDRs Order No. 98-207. Therefore, it is appropriate to require the Discharger to complete a Background Groundwater Quality Study Analysis and to evaluate Best Practicable Treatment Control Measures to reduce degradation to below water quality objectives.

Previous Enforcement

20. Since issuance of the current WDRs in October 1998, Regional Water Board records indicate that four Notices of Violations (NOVs) have been issued for multiple wastewater spills. These NOVs are summarized as follows:
- a. An NOV was issued on 15 January 2004 for a 66,000 gallon raw sewage spill that occurred on 27 October 2003 and for five other spills ranging from 25 to 100 gallons that occurred in November and December 2003. The NOV required the submittal of a *Sanitary Sewer System Operation, Maintenance, Overflow Prevention, and Response Plan* (SSS Plan). The SSS plan was received by Regional Water Board staff on 4 June 2004.
 - b. An NOV was issued on 8 February 2006 for a raw sewage spill estimated at approximately 500 gallons that occurred on 31 December 2005 and the Discharger's inability to report the spill as required by the Standard Provisions and Reporting Requirements of the Waste Discharge Requirements. The spill was caused by (i) excessive amounts of rain accompanied with inflow and infiltration (I/I), (ii) fats, oils, and greases in the main sewer line, (iii) privately operated sewer pumps from nearby motels that are connected to the sewer main, (iv) and an undersized section of the sewer main. Because the Discharger did not report the spill as required by the Standard Provisions and Reporting Requirements, the NOV required the submittal of a technical report describing how they will change internal procedures such that all spills will be reported as required by the Standard Provisions. The NOV also required the submittal of a report showing the repairs that had been completed to reduce the I/I in the spill area, a copy of the ordinance submitted to City of Lakeport regarding the reduction of fats, oils, and grease from nearby restaurants connected to the main sewer line, results of the investigation regarding the operation of the privately operated sewer pumps during periods of heavy rains, and a timeline for the replacement of the undersized section of sewer main. The Discharger has submitted the required information.

- c. An NOV was issued on 3 August 2006 for a discharge of wastewater into Clear Lake from the recapture reservoir. The discharge occurred between 13 and 24 April 2006 and was estimated to be between 3,600,000 and 6,600,000 gallons of partially treated wastewater. The Discharger based the estimate spilled on approximately 15 to 25 percent of the total amount of wastewater (24 million gallons) that was discharged to the spray field during this period. The primary causes of the spill were the inflow from the Willow Point area due to the high lake levels and the uncapped sewer cleanouts, the heavy rains that occurred during this period, the lack of storage capacity, and the inability to allow the land application area to dry prior to irrigation. The NOV required the Discharger to submit a water balance prepared by a California Registered Engineer evaluating the wastewater treatment system's capacity and ability of the ponds to maintain two feet of freeboard on a month-by-month basis. The technical report and water balance prepared by a California Registered Engineer were received on 18 September 2006.
- d. On 9 January 2007, an NOV was issued for two raw sewage spills that occurred on 26 October and 9 November 2006. The October spill was estimated to be between 100 and 200 gallons, and was from an overflowing manhole. The spill entered a flowing storm drain and eventually Clear Lake and was caused by a grease blockage in the sewer pipe. The Discharger states that the sewer pipe was cleaned of grease deposits and video surveyed. The Discharger indicates that this section of sewer pipe will be inspected by the 3rd quarter 2007. The November spill, estimated at 90 gallons, occurred from an overflowing manhole located near the Clear Lake High School. The spill did not enter a surface water drainage course. The spill was caused by a blockage in the sewer line from a large mass of wet paper products possibly from vandalism. A video inspection conducted by the Discharger on 9 November 2006 indicated that there were no defects within the manhole or sewer mains.

Response to April 2006 Spill and Notice of Violation

21. On 10 August 2006, the Discharger requested a meeting with Regional Water Board staff to discuss the 3 August 2006 NOV and any additional enforcement action under consideration. The meeting with staff was held on 5 September 2006, and a subsequent meeting was held with the Executive Officer on 6 October 2006. The following information was presented at each meeting and in follow-up correspondence.

The Discharger states that the main cause of the April 2006 spill was the continuous rainfall that occurred beginning in December 2005 and the inability to apply wastewater to the land application area. Once the Discharger began irrigating in April, storm water run-on into the tailwater diversion ditch from the surrounding areas contributed to the increased volumes to the storage reservoir. In addition, the Discharger submitted the following information:

- In response to increased flows at Lift Station C, the City of Lakeport staff inspected the Willow Point RV Park on 1 March 2006 and found approximately 20 uncapped

private sewer cleanouts. The RV Park is immediately adjacent to Clear Lake.

- Extensive flooding occurred along the shores of Clear Lake and in the Willow Point RV Park from 6 March through 27 April 2006. This flooding allowed approximately 65 acre-feet of excess water to enter the collection system through the uncapped sewer cleanouts.
- The majority of the open sewer cleanouts were brought to grade and capped with watertight covers on 24 March 2006 after utilizing the services of the City of Lakeport Building Department, the California Housing and Community Development, and Lake County Environmental Health Department. Wastewater flows at the nearby Lift Station No. 6 have since been reduced. However, follow-up site investigations on 18 and 22 August 2006 indicate that the Recreation Vehicle (RV) Dump Station cleanout remains open and is subject to future flooding. The inspection also found that large amounts of rock and gravel were placed onsite to prevent future flooding of the area.
- The City of Lakeport will monitor the repairs made to the sewer cleanouts through inspections and take flow measurements both upstream and downstream of the Willow Point RV Park.
- The owner of the Willow Point RV Park has received citations from the Lake County Environmental Health Department and the California Department of Housing and Community Development for the two sewer spills. One of the sewer spills was discovered within five feet of the lake level on 1 March 2006.

The impact to beneficial uses from the millions of gallons of wastewater spilled into Clear Lake was negligible because (a) the wastewater was re-disinfected prior to discharge and (b) the heavy rains diluted any constituents of concern. In addition, the Discharger took action to prevent some wastewater from entering Clear Lake. Approximately 597,000 gallons of partially treated wastewater was transported by sewage pumper trucks to the Southeast Regional Wastewater Treatment Facility during a seven-day period from 13 through 21 April 2006 at a cost of approximately \$96,000.

Inflow/Infiltration Assessment

22. Provision H.3.a of the WDRs requires that, in order to resolve capacity issues related to high inflow and infiltration (I/I), the Discharger was to submit an I/I assessment report by 1 June 1999. The report was not submitted until November 2000.
23. In a 10 May 2000 inspection report, Regional Water Board staff informed the Discharger that the wastewater treatment and disposal facilities appeared well-operated and maintained. However, the report also stated that the collection system had significant inflow/infiltration (I/I) problems (documented in Attachment A to this Order). To address these problems, the Discharger was reminded that the WDRs required submittal of an I/I assessment report, and that it should detail the City's plan and schedule for implementing a program to define the nature and extent of I/I in the collection system, establish cost

effective measures for reduction of I/I sources, and perform ongoing I/I prevention and control. The report was received in November 2000, and included the following:

Task	Target Completion Date	Status
Determine the strategy to mitigate the I/I problem	16 October 2001	Completed
Finalize the analysis of the new sewer rates and coordinate the rate increase with the Lake County Sanitation District rate increase.	10 January 2001	Completed
Implement the rate increase with Proposition 218 requirements.	31 March 2001	Completed
Hire additional staff for I/I issues, and obtain necessary monitoring equipment and provide training.	15 June 2001	Hired two additional staff in March and April 2004.
Conduct initial smoke testing, provide initial update for mapping the sewer collection system, conduct base flow monitoring, sewer testing and miscellaneous repair activities.	15 October 2001	Smoke testing began in June 2004 (as of June 2005 approximately 65 percent of the lines inspected). Geographical Information System (GIS) mapping of sewer manholes (2004/2005).
Issue repair notices and work orders for defective collection system facilities.	30 November 2001	Ongoing
Initiate wet weather flow monitoring	1 December 2001	Magnetic flow meters arrived in June 2004 and have been installed at four lift stations (Lakeshore Blvd., Rose Ave., Martin Street, and C Street). A fifth magnetic flow meter is planned to be installed at the Linda Lane lift station.
Conduct ongoing flow monitoring, mapping, and repair activities to the sewer collection system.	Ongoing	Ongoing

24. The Discharger states that a concerted effort has been made towards an I/I Reduction Program with the following actions having been taken: (a) aerial mapping of the city in 1991, 2002, 2006, (b) GIS mapping of utilities from 1999 to present, (c) inventory of sewer utilities from 2001 to present, (d) creation of the I/I Department in 2003, (e) providing a GIS utility atlas to field crews in 2004, (f) completion of the sewer spillage database in 2005, (g) physical inspection of all sewer manholes from 2001 to present, (h) video inspection of sewers from 2001 to present, (i) purchase of magnetic flow meters for sewage lift stations

in 2004, (j) restoration of 10 sewer manholes in 2004, 21 manholes in 2005, and 20 manholes in 2006, and (k) the installation of 44 sewer manhole covers in 2005.

25. The Discharger's 18 September 2006 technical report states that historically, the wastewater collection system has experienced substantial inflow and infiltration; however, the I/I Reduction Program was created in 2003 to identify the problem areas and repair the collection system. The Discharger states that an average of \$225,000 per year has been spent on the I/I Reduction Program.
26. In addition, the Discharger indicates that it has recently contracted with a consultant to prepare a Sewer Master Plan. The Plan will address both collection system and treatment system improvements. The estimated cost to complete the plan is \$50,000 and the scheduled completion date is 13 August 2007. In summary, the Master Plan will contain the following: (a) development of a service area and system map, (b) an inflow/infiltration flow monitoring program, (c) development of a hydraulic model, (d) an evaluation of, and recommended improvements to the wastewater treatment, storage and disposal system to accommodate the next 20 years of growth, (e) cost estimates associated with those recommended improvements, and (f) development of a sewer master plan map.
27. To ensure that a mechanism is in place to provide adequate funding needed for the treatment, storage and disposal capacity necessary to consistently comply with the permit conditions, it is appropriate for the Discharger to submit a Revenue Plan for existing and future expansion of the City of Lakeport's WWTF.
28. To ensure that adequate staffing is available to perform operation and maintenance of the wastewater treatment and disposal system to comply with the WDRs, it is appropriate that the Discharger submit a Staffing Analysis Report.
29. On 2 May 2006, the State Water Board adopted Statewide General Waste Discharge Requirements For Sanitary Sewer Systems General Order No. 2006-0003-DWQ (General Order). The General Order requires all public agencies that own or operate sanitary sewer systems greater than one mile in length to comply with the Order. The Discharger's collection system exceeds one mile in length, therefore the General Order is applicable. The Discharger applied for coverage under the General Order on 29 October 2006.

Regulatory Considerations

30. As a result of the events and activities described in this Order, the Regional Water Board finds that the Discharger has caused or permitted waste to be discharged in such a manner that it has created, and continues to threaten to create, a condition of pollution or nuisance. The Regional Water Board also finds that the Discharger is discharging waste in violation of WDRs No. 98-207 as described in the above Findings.
31. The Regional Water Board's Water Quality Control Plan for the Sacramento and San Joaquin River Basins (Basin Plan) designates beneficial uses, includes water quality objectives to protect the beneficial uses, and includes implementation plans to implement the water quality objectives.

32. Surface water drainage from the facility is to Clear Lake. The beneficial uses of Clear Lake, as stated in the Basin Plan, are municipal and domestic supply; agricultural supply; industrial service supply; water contact recreation; noncontact water recreation; warm freshwater habitat, cold freshwater habitat; spawning, reproduction, and/or early development; and wildlife habitat.
33. The beneficial uses of underlying groundwater are municipal and domestic water supply, agricultural supply, industrial service supply, and industrial process supply.
34. Section 13301 of the California Water Code states in part: "When a regional board finds that a discharge of waste is taking place or threatening to take place in violation of requirements or discharge prohibitions prescribed by the regional board or the state board, the board may issue an order to cease and desist and direct that those persons not complying with the requirements or discharge prohibitions (a) comply forthwith, (b) comply in accordance with a time schedule set by the board, or (c) in the event of a threatened violation, take appropriate remedial or preventive action. In the event of an existing or threatened violation of waste discharge requirements in the operation of a community sewer system, cease and desist orders may restrict or prohibit the volume, type, or concentration of waste that might be added to such system by discharges who did not discharge into the system prior to the issuance of the cease and desist order. Cease and desist orders may be issued directly by a board, after notice and hearing, or in accordance with the procedure set forth in Section 13302."
35. Section 13267(b) of the California Water Code states: " In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste within its region, or any citizen or domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge, waste outside of its region that could affect the quality of waters within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports."
36. The Discharger owns and operates the facility subject to this Order. Monitoring reports and other technical reports required by this Order are necessary to assure compliance with WDRs Order No. 98-207 and revised MRP No. 98-207 to assure protection of public health and safety.
37. The issuance of this Order is an enforcement action by a regulatory agency and is exempt from the provisions of the California Environmental Quality Act, pursuant to Section 15321(a)(2), Title 14, California Code of Regulations.
38. On 15 March 2007, in Rancho Cordova, California, after due notice to the Discharger and all other affected persons, the Regional Water Board conducted a public hearing at which evidence was received to consider a Cease and Desist Order and Connection Restriction.
39. Any person affected by this action of the Regional Water Board may petition the State Water Resources Control Board to review the action in accordance with Section 2050 through 2068, Title 23, California Code of Regulations. The petition must be received by the State Water Resources Control Board, Office of Chief Counsel, P.O. Box 100,

Sacramento, CA, 95812-0100, within 30 days of the date on which the Regional Water Board action took place. Copies of the law and regulations applicable to filing petitions are available at www.waterboards.ca.gov/water_laws/index.html and also provided upon request.

IT IS HEREBY ORDERED that, pursuant to Sections 13301 and 13267 of the California Water Code, the City of Lakeport Municipal Sewer District, its agents, successors, and assigns, shall implement certain measures, and identify and implement facility improvements, in accordance with the scope and schedule set forth below to ensure long-term compliance with WDRs Order No. 98-207 or any revisions to those WDRs.

Each document submitted under this Order shall bear the following certification signed by the Discharger:

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my knowledge and on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

1. The Discharger shall **immediately** comply with all aspects of WDRs Order No. 98-207, and in addition shall comply with all items described in this Order. Where the CDO imposes more stringent conditions than those provided in the WDRs, the Discharger shall comply with the more stringent conditions required by this Order.
2. Effective immediately, the average monthly dry weather inflow to the wastewater treatment plant shall not exceed 0.42 mgd (calculated by averaging the flows from August through October each year), and the annual inflow (measured from October through September) shall not exceed 885 acre-feet (approximately 288 million gallons).
3. Effective **1 November 2007**, the facility shall have sufficient treatment, storage, and disposal capacity to accommodate allowable wastewater flow, design seasonal precipitation, and ancillary inflow and infiltration. Design seasonal precipitation shall be based on total annual precipitation using a return period of 100 years, distributed monthly in accordance with historical rainfall patterns. The freeboard in the treatment ponds and storage reservoir shall never be less than two feet as measured from the water surface to the lowest point of overflow. By **1 October** of each year, the storage reservoir capacity shall at least equal the volume necessary to comply with the above.
4. Effective **1 April 2007**, irrigation with wastewater shall not be performed within 24 hours before a predicted precipitation event, during precipitation, or within 24 hours after any precipitation event, nor shall it be performed when ground is saturated or when winds exceed 30 mph.

5. By **1 June 2007**, the Discharger shall install a magnetic flow meter to accurately measure the influent wastewater flows into the wastewater treatment facility. By this date, the Discharger shall submit documentation certifying installation of the flow meter.
6. By **1 September 2007**, the Discharger shall submit a *Flow Meter Calibration Report* that demonstrates that all flow meters used for determining compliance with the WDRs and this Order have been independently calibrated by a third party. The report shall also (a) provide standard procedures for plant personnel to use when taking and recording flow measurements and (b) provide a schedule for on-going meter calibration, and (c) shall provide two months of data showing influent flows for the Linda Lane pump station calculated by both pump run times and by the magnetic flow meter, and shall discuss the differences and the impact on the water balance.
7. By **1 October of each year**, the volume of wastewater in the effluent storage reservoir shall not exceed 50 acre-feet.

Short Term Storage and Disposal Capacity Improvements

8. By **1 July 2007**, the Discharger shall submit and immediately implement a *Spill Contingency Plan* containing the interim measures necessary for preventing unauthorized discharges to surface water and surface water drainage courses from the WWTF. The Spill Contingency Plan shall remain in effect until all improvements to the WWTF are completed. The Spill Contingency Plan must, at a minimum, consider additional water conservation measures to reduce wastewater flows, provisions for transporting wastewater offsite for disposal, and provisions for increasing the capacity of the storage reservoir. The cost and funding mechanism for each contingency measure must be identified. The Spill Contingency Plan must identify the selected alternatives, and for each alternative, specify all necessary materials, staffing, and equipment required for implementation.
9. By **1 August 2007**, the Discharger shall submit a *Staffing Analysis Report* for the wastewater treatment, storage and disposal system. The analysis shall include a review of current staffing levels, allocation of staff tasks, an analysis of whether current staff allocation is adequate, and if necessary, describe the shortfalls and make recommendations for future staffing needs. If the analysis indicates additional staff are necessary, then the report shall also include a *Staffing Contingency Plan* describing the steps the Discharger shall take in the short term and long term to assure that it has enough staff to perform the necessary operation and maintenance activities associated with the wastewater storage and disposal system. If the analysis indicates additional staff are necessary, then the *Staffing Contingency Plan* shall also contain a proposed timeline for acquiring the necessary staff.
10. By **1 November 2007**, the Discharger shall submit a report demonstrating that it has completed the 90-acre expansion of the spray irrigation disposal fields. The report shall clearly show that tailwater generated on these fields will be captured and returned to the storage reservoir.

Groundwater Evaluation

11. By **1 November 2007**, the Discharger shall submit a *Background Groundwater Quality Study and Degradation Assessment Report*. For each groundwater monitoring parameter/constituent identified in revised MRP No. 98-207, the report shall present a summary of all monitoring data and calculation of the concentration in background monitoring well(s). Determination of background quality shall be made using the methods described in Title 27, Section 20415(e)(10), and shall be based on data from at least eight consecutive quarterly (or more frequent) groundwater monitoring events. For each monitoring parameter/constituent, the report shall compare the measured concentration in each compliance monitoring well with the proposed background concentration.
12. By **1 November 2007**, the Discharger shall submit a *BPTC Evaluation Workplan* that sets forth the scope and schedule for a systematic and comprehensive technical evaluation of the waste constituent(s) to determine which best practicable treatment and control (BPTC) practices are necessary to implement to ensure that groundwater degradation is minimized. The workplan shall contain an evaluation of each component of the wastewater treatment facility and shall propose a comprehensive evaluation of appropriate treatment and control measures for each waste constituent causing degradation.
13. By **1 November 2008**, the Discharger shall submit a *BPTC Evaluation Report* containing the results of the study described in Ordered Item No. 12. The report shall recommend improvements to the WWTF that will result in compliance with the Groundwater Limitations of WDRs Order No. 98-207.

Sewer System Master Plan

14. By **1 July 2008**, the Discharger shall submit a *Sewer System Master Plan* that describes the facility improvements needed to:
 - a. Increase overall storage and disposal capacity as necessary to comply with a 100-year total annual precipitation event;
 - b. Provide enough wastewater storage and disposal capacity for current flows, as well as growth projected over the next 15 years;
 - c. Prevent sanitary sewer overflows;
 - d. Comply with pond freeboard requirements in the WDRs; and
 - e. Address I/I (shall include items listed in Finding No. 26).

The *Sewer System Master Plan* shall include a water balance for both the current inflow and projected flows through at least the year 2022, and shall clearly show the times of the year when wastewater must be stored versus when it may be applied to land. The water balance shall evaluate the wastewater storage reservoir's ability to provide sufficient capacity to maintain two feet of freeboard on a month-by-month basis. The water balance shall be based on all flows entering the wastewater system, 100-year annual precipitation returns, and compliance with the two-foot freeboard requirement in treatment ponds and storage reservoir, and shall model I/I flows using the method described in the July 2004 State Water Board training manual titled "Training Handbook for Disposal of Non-Designated Waste to Land Systems" or other appropriate method if approved by the Executive Officer. All assumptions and calculations used in preparing the water balance

must be clearly identified. The water balance shall include consideration of at least the following:

- a. Wastewater flows from all sources such as subsurface inflows, storm water run-on, and any inflow and infiltration from the collection system;
- b. Local precipitation data (indicate what weather station was used to obtain the data, and indicate what the total annual precipitation is for average and 100 year annual storm events, and show how that value was distributed throughout the year, by months, based on historical rainfall patterns);
- c. Infiltration and inflow;
- d. Local evaporation data;
- e. Measured evaporation data from any enhanced evaporation system;
- f. Projected percolation rates for the effluent storage reservoir; and
- g. ~~Irrigation disposal rates that comply with the requirements of the WDRs.~~

The *Sewer System Master Plan* shall include a proposed timeline for all improvements.

Revenue Plan

15. ~~By 1 September 2008, the Discharger shall submit a Revenue Plan for all work and improvements described in the Sewer System Master Plan. The Revenue Plan shall include the following:~~

- a. A detailed description of the scope and schedule of all planning, design, and construction, including improvements to existing facilities and construction of new facilities as needed to accommodate projected future influent flows over the next 15 years. A phased expansion plan may be proposed; and
- b. A preliminary capital cost estimate and a financing plan describing how the improvement project(s) will be funded.

Report of Waste Discharge

16. By 1 April 2009, the Discharger shall submit a *Report of Waste Discharge* (RWD) to allow the WDRs to be revised to reflect the proposed upgrades in the Sewer System Master Plan. The RWD consists of the Form 200 (*Application for Report of Waste Discharge*) and a technical report that addresses all items listed in Attachment B to this Order, "*Additional Information Requirements for a Report of Waste Discharge*." The Report of Waste Discharge shall clearly reference the groundwater monitoring data collected for the sprayfields and shall demonstrate that the proposed improvements are compliant with State Water Resources Control Board Resolution No. 68-16 (the Antidegradation Policy).

Progress Reports

17. **Beginning with the second quarter 2007**, the Discharger shall submit a *Quarterly Compliance Status Report*. These reports shall describe all work completed during the calendar quarter to comply with this Cease and Desist Order; any new, modified, or renovated component of the collection, treatment, storage, and disposal system and number of new connections authorized during that quarter. The reports shall specifically address work completed to identify and reduce I/I. These reports shall be submitted by the **1st day of the second month after the quarter** (e.g., the first quarterly report is due by 1 May of each year).

In addition to the above, the Discharger shall comply with all applicable provisions of the California Water Code that are not specifically referred to in this Order. As required by the California Business and Professions Code Sections 6735, 7835, and 7835.1, all technical reports shall be prepared by, or under the supervision of, a California Registered Engineer or Professional Geologist and signed/stamped by the registered professional.

If, in the opinion of the Executive Officer, the Discharger fails to comply with the provisions of this Order, the Executive Officer may refer this matter to the Attorney General for judicial enforcement or may issue a complaint for administrative civil liability.

Failure to comply with this Order or with the WDRs may result in the assessment of Administrative Civil Liability of \$1,000 to \$10,000 per day of violation, depending on the violation, pursuant to the California Water Code, including sections 13268, 13350 and 13385. The Regional Water Board reserves its right to take any enforcement actions authorized by law.

I, PAMELA C. CREEDON, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 15 March 2007.

- Original Signed by -

PAMELA C. CREEDON, Executive Officer

Attachment A - Summary of Spills from October 1998 through 2006

Attachment B - Additional Information Requirements for a Report of Waste Discharge

GJC/MRL/WSW: 15 March 2007

ATTACHMENT A

CEASE AND DESIST ORDER NO. R5-2007-0010

FOR

**CITY OF LAKEPORT MUNICIPAL SEWER DISTRICT
WASTEWATER TREATMENT FACILITY
LAKE COUNTY**

The following table summarizes the wastewater spills that have occurred (as documented in the Regional Water Board case file) since adoption of the Waste Discharge Requirements in October 1998 through the issuance of this Cease and Desist Order.

Date of Spill	Volume Discharged (Gallons)	Discharge to Surface Water Drainage Course?	Type of Waste	Location of Spill	Cause of Spill¹
29 Oct 1998	>325,900	Yes	Partially Treated Effluent	2400 Linda Lane & Parallel Drive	Recapture pond gate partially open because pond was full and overflowing due to storm water flow into the pond
23 Nov 1998	400	Yes	Partially Treated Effluent	Disposal Site	Overflow from recapture pond caused during installation of plastic pipe in earthen berm
29 Dec 1998	100	Yes	Raw Sewage	420 2 nd Street	Blockage in sewer lateral
30 Dec 1998	75	No	Raw Sewage	375 High Street	Plugged sewer lateral
16 Jan 1999	30	No	Raw Sewage	975 Armstrong and Russell Street	Blockage in sewer lateral
28 Jan 1999	50	No	Raw Sewage	635 11 th and Main Streets	Blockage in sewer lateral
31 Jan 1999	20	No	Raw Sewage	40 th and South Main Street	Plugged sewer service lateral
17 Feb 1999	50	Yes	Raw Sewage	475 Third Street and Tunis Ave.	Blockage in main sewer line
4 Mar 1999	30	Yes	Raw Sewage	825 Forbes	Roots in sewer lateral
13 Mar 1999	25	No	Raw Sewage	450 Hillcrest and Forest	Plugged sewer lateral
19 Apr 1999	30	Yes	Raw Sewage	480 Third Street and Tunis Ave.	Blockage in sewer lateral
23 June 1999	1,500	Yes	Raw Sewage	1940 Lakeshore Drive and Giselman	Blockage in main sewer line
18 Nov 1999	20	No	Raw Sewage	2235 Heulton Circle	Plugged sewer lateral

Attachment A to
 Cease and Desist Order No. R5-2007-0010
 City of Lakeport Municipal Sewer District
 Wastewater Treatment Facility
 Lake County

Date of Spill	Volume Discharged (Gallons)	Discharge to Surface Water Drainage Course?	Type of Waste	Location of Spill	Cause of Spill ¹
19 March 2000	75 to 100	No	Raw Sewage	Tunis Street between 2 nd and 3 rd Streets	Plugged sewer main
24 March 2000	25	No	Raw Sewage	480 3 rd Street	Plugged sewer main
13 April 2000	50	No	Raw Sewage	475 3 rd Street	Plugged sewer main
21 April 2000	50	No	Raw Sewage	210 11 th Street	Plugged sewer lateral
16 May 2000	200	No	Raw Sewage	16 th and 17 th Streets	Debris blockage in sewer manhole
30 May 2000	30	No	Raw Sewage	Pecham Street	Blockage in sewer main
5 June 2000	25	Yes	Raw Sewage	1824 Via Del Cabana	Plugged sewer lateral
8 Sept 2000	50	No	Raw Sewage	155 South Forbes	Plugged sewer line cleanout
15 Nov 2000	100	Yes	Raw Sewage	Via Delago & Via Del Cabana	Blockage in sewer main
15 Nov 2000	150	Yes	Raw Sewage	1880 High Street	Blockage in sewer main
25 Dec 2000	50	No	Raw Sewage	224 2 nd Street	Blockage in sewer main
9 Jan 2001	25	Yes	Raw Sewage	Peckham & South Main	Blockage in sewer main
9 Feb 2001	25	No	Raw Sewage	Parallel & Craig	Blockage in sewer main
23 Feb 2001	25	Yes	Raw Sewage	426 2 nd Street	Plugged sewer main
23 Feb 2001	30	Yes	Raw Sewage	2019 South Main	Plugged sewer main
23 July 2001	30	Yes	Raw Sewage	Via Delago & Del Cabana	Blockage in sewer main
8 Oct 2001	10	No	Raw Sewage	425 3 rd and Tunis Street	Plugged sewer main
9 Oct 2001	25	Yes	Raw Sewage	975 North Brush Street	Plugged sewer lateral
26 Nov 2001	25	Yes	Raw Sewage	1130 Mellor Street	Root blockage in sewer lateral
28 Feb 2002	40	Yes	Raw Sewage	475 Tunis Street	Blockage in sewer main

Attachment A to
 Cease and Desist Order No. R5-2007-0010
 City of Lakeport Municipal Sewer District
 Wastewater Treatment Facility
 Lake County

Date of Spill	Volume Discharged (Gallons)	Discharge to Surface Water Drainage Course?	Type of Waste	Location of Spill	Cause of Spill ¹
11 Mar 2002	25	No	Raw Sewage	480 3 rd Street	Blockage in sewer main
30 April 2002	25	No	Raw Sewage	475 Tunis Street	Plugged sewer main
12 May 2002	20	No	Raw Sewage	1264 Craig Ave	Plugged sewer lateral
12 May 2002	10	No	Raw Sewage	1155 North Forbes	Plugged sewer lateral
25 June 2002	100	Yes	Raw Sewage	1425 North Main Street	Power failure to the pumps and controls
7 July 2002	50	No	Raw Sewage	1264 Craig Street	Plugged sewer lateral
17 July 2002	25	No	Raw Sewage	1155 North Forbes Street	Plugged sewer lateral
13 Sept 2002	15	No	Raw Sewage	2235 Healdton Circle	Plugged sewer main
4 Oct 2002	20	Yes	Raw Sewage	100 North Main Street	Plugged sewer main
29 Oct 2002	50	No	Raw Sewage	992 19 th Street	Blockage in sewer main
1 Nov 2002	50	No	Raw Sewage	1021 24 th Street	Blockage in sewer main
8 Nov 2002	5	No	Raw Sewage	360 Third Street	Blockage in sewer lateral
13 Nov 2002	25	No	Raw Sewage	210 11 th Street	Plugged sewer cleanout
18 Dec 2002	10	No	Raw Sewage	15 th and High Street	Blockage in sewer main
10 Jan 2003	20	No	Raw Sewage	785 6 th Street	Roots in sewer lateral
27 Jan 2003	300	Yes	Raw Sewage	755 11 th Street	Blockage in sewer main
29 Jan 2003	25	Yes	Raw Sewage	Clearlake Ave & Main Street	Leaking valve cover
20 Feb 2003	500	Yes	Raw Sewage	6 th Street	Grease blockage in sewer main
24 Feb 2003	50	Yes	Raw Sewage	High and 20 th Streets	Grease blockage in sewer main
18 Oct 2003	15	Yes	Raw Sewage	195 South Main Street	Plugged sewer line
18 Oct 2003	15	Yes	Raw Sewage	235 South High Street	Plugged sewer line

Date of Spill	Volume Discharged (Gallons)	Discharge to Surface Water Drainage Course?	Type of Waste	Location of Spill	Cause of Spill ¹
27 Oct 2003	66,000	Yes	Raw Sewage	2485 Parallel Drive	Power failure and standby generator running out of fuel
18 Nov 2003	1,400	Yes	Raw Sewage	320 16 th Street	Grease blockage in sewer line
24 Nov 2003	25	No	Raw Sewage	470 2 nd Street	Plugged sewer main
30 Nov 2003	30	No.	Raw Sewage	867 14 th Street	Plugged sewer lateral
15 Dec 2003	100	Yes	Raw Sewage	180 6 th Street	Partially blocked sewer main
18 Dec 2003	100	Yes	Raw Sewage	180 6 th Street	Partially blocked sewer main
29 Dec 2003	100	Yes	Raw Sewage	1005 North Main	Heavy rains and I/I problems
13 Mar 2004	15	No	Raw Sewage	975 Armstrong Ave.	Blockage in sewer lateral
19 July 2004	20	No	Raw Sewage	1155 North Forbes Street	Blockage in sewer lateral
31 Dec 2005	500	Yes	Raw Sewage	1100 North Main	I/I problems, grease blockage, undersized section of sewer pipe
13 – 24 April 2006	3,600,000 to 6,623,250	Yes	Partially Treated Effluent	Land Application Area	Excessive rains, I/I and storage capacity problems, flooding of sewer cleanouts at Willow Point RV Park
26 Oct 2006	200	Yes	Raw Sewage	Villa Del Lago and Via Del Cabana	Grease blockage in sewer line
9 Nov 2006	90	No	Raw Sewage	Lakeport Unified School District	Backup in manhole due to vandalism

¹Based on Discharger's spill reports.

ATTACHMENT B

**ADDITIONAL INFORMATION REQUIREMENTS
FOR A REPORT OF WASTE DISCHARGE**

**CEASE AND DESIST ORDER NO. R5-2007-0010
FOR
CITY OF LAKEPORT MUNICIPAL SEWER DISTRICT
WASTEWATER TREATMENT FACILITY**

Provide a technical report prepared by a California Registered Civil Engineer that presents the following information:

1. A narrative description of all wastewater conveyance, treatment, and disposal systems currently existing at the facility.
2. A narrative description of all planned physical improvements, their purpose, and anticipated completion dates. If phased build out is planned provide scope and completion dates for each phase.
3. A process flow diagram, scaled treatment plant site plan, and scaled map(s) showing all existing and proposed effluent disposal areas (including conveyance and tailwater control systems).
4. For each pond and other waste containment structure, provide the following information. Discuss both existing and proposed ponds:
 - a. Identification (name) and function of the pond;
 - b. Surface area, depth, and volumetric capacity at two feet of freeboard;
 - c. Height (relative to surrounding grade), crest width, interior slope, and exterior slope of each berm or levee;
 - d. Materials used to construct each berm or levee;
 - e. Description of engineered liner, if any;
 - f. Estimated steady state percolation rate for each unlined pond;
 - g. Depth to shallow groundwater below the planned base of the ponds;
 - h. Overfilling/overflow prevention features; and
 - i. Operation and maintenance procedures.
5. For each reclamation site, provide:
 - a. Complete ownership information.
 - b. A scaled map showing the topography, property boundary, streets, residences, surface waters, etc. A USGS topo map may be sufficient as a base map.

- c. A scaled map showing the limits of the reclamation areas, reclaimed water conveyance systems, other irrigation water conveyance systems, on-site drainage, tailwater systems, and runoff controls (existing and proposed).
 - d. Net irrigation area.
 - e. Method(s) of irrigation, including typical frequency and depths of application for each month when irrigation will occur.
 - f. Typical cropping practices (crops grown, rotation cycles, use of fertilizers and pesticides, etc.).
 - g. Typical storm water management practices.
6. A description of the sources and types of wastewater flowing into the wastewater treatment system, design flow rates, and the design capacity of the system (existing and proposed). Include projected infiltration/inflow rates and peaking factors used in design calculations.
 7. A description of emergency wastewater storage facilities or other means of preventing system bypass or failure during reasonably foreseeable overload conditions (e.g., power failure, sewer blockage, and illicit sewer discharges). Consider both potential problems at the plant and within the community sewer system.
 8. A description of the community sewer system: materials, age, infiltration/inflow estimate, and lift station details (type, location, capacity, backup systems, and alarm features).
 9. Chemical characterization of influent wastewater quality, including biochemical oxygen demand, total suspended solids, total dissolved solids, and nitrogenous compounds. Include a discussion of seasonal variations, if any, and supporting analytical data.
 10. A description of all known or anticipated industrial dischargers whose individual BOD, total dissolved solids and/or hydraulic loads will be greater than 2% of the plant's total daily influent loading, including the following:
 - a. Name;
 - b. Industry;
 - c. Nature of waste stream;
 - d. Average daily flow (gpd and percentage of total plant loading);
 - e. Peak daily flow;
 - f. Average daily BOD loading (lb/day and percentage of total plant loading);
 - g. Peak daily BOD loading;
 - h. Salinity (e.g., total dissolved solids, electrical conductivity, major ions);
 - i. Nitrogen (all forms);
 - j. Nature of seasonal or diurnal variations in influent flow or quality, if any; and

- k. Pre-treatment or self-monitoring programs, if any.
11. A description of the following for the both existing system and each phase of the proposed expansion:
 - a. Average dry weather flow;
 - b. Peak wet weather flow; and
 - c. Effluent quality at the point of discharge to the disposal system (BOD, total suspended solids, settleable matter, nitrogenous compounds, electrical conductivity, pH, and total coliform organisms).
 12. Narrative description of expected solids generation rates and handling/storage procedures:
 - a. Debris;
 - b. Grit and screenings; and
 - c. Biosolids.
 13. Narrative description of proposed solids disposal practices for debris, grit, screenings, and biosolids:
 - a. Method of disposal;
 - b. Frequency of disposal;
 - c. Disposal site/area name(s) and location(s); and
 - d. For biosolids (if beneficial re-use is proposed for reclamation sites):
 - Land application rates (dry tons per unit area per application, number of applications per year);
 - Soil incorporation practices;
 - Vegetation grown;
 - Runoff controls, if any; and
 - Public access controls.
 14. A description of the types of soil underlying any planned ponds and effluent disposal areas (include a copy of the geotechnical report).
 15. Projected monthly water balance for each phase of buildout demonstrating adequate containment capacity for the 100-year return period total annual precipitation, including consideration of at least the following.
 - a. A minimum of two feet of freeboard in each pond at all times;
 - b. Historical local evaporation data (monthly average values);
 - c. Local precipitation data with the 100-year return period annual total distributed monthly in accordance with mean monthly precipitation patterns;

- d. Proposed wastewater loading rates distributed monthly in accordance with expected seasonal variations;
 - e. Projected long-term percolation rates (including consideration of percolation from unlined ponds and the effects of solids plugging on all ponds); and
 - f. Projected irrigation usage rates (if recycling is proposed).
16. Proposed flow limits and basis for the limit for the current facility and each phase of the planned expansion. Consider dry weather flows vs. peak flows and seasonal variations associated with major industrial dischargers. Include the technical basis for the proposed flow limit (e.g., design treatment capacity; hydraulic capacity of a main lift station, headworks, or other system element; and demonstrated effluent disposal capacity).
17. A narrative description of plant operation and maintenance procedures to be employed, including those associated with effluent storage and disposal.
18. A description of any policies or facility design features that reduce the potential for groundwater degradation (best practicable treatment and control or BPTC measures). Such features might include industrial discharger effluent quality limits, prohibitions on discharge of certain types of waste, advanced treatment, disinfection, concrete treatment structures, and pond lining systems.
19. Provide a technical report prepared by a Professional Geologist or Certified Hydrogeologist that provides an assessment of the following:
- a. Baseline groundwater quality at each new disposal or reclamation site.
 - b. Groundwater degradation, if any, that has resulted from the existing operation; and
 - c. The potential for the proposed effluent disposal expansion to degrade groundwater quality (at the plant and at reclamation/disposal sites).

This assessment must be made based on site-specific data and must provide technically-based answers to the following questions based on historical data and supplemental data to be collected for the purpose of this study:

- ◆ What is the groundwater elevation and gradient at the existing facility? At least one new well will be required to better define background groundwater quality outside the influence of any mounding around the ponds and at least one more well will be required downgradient of the existing ponds.
- ◆ What is background shallow groundwater quality for typical municipal waste constituents? Compare to established water quality objectives for protection of the beneficial uses of groundwater.¹

¹ Include analyses for the following: BOD, total coliform organisms, total dissolved solids, ammonia (as N), total Kjeldahl nitrogen, nitrate (as N), nitrite (as N), and a complete anion/cation scan with ion balance. Total coliform organisms shall be determined using the 15- or 25- tube method.

- ◆ What is the groundwater quality data downgradient of the existing WWTP and application areas.
- ◆ For each monitored constituent, has the existing facility degraded groundwater quality? If so:
 - What constituents exceed the applicable water quality objective?
 - What constituents exceed background concentrations?
 - Based on site hydrogeology, is the degradation contained within a defined area (or one that could be defined by additional investigation)?
 - What Best Practicable Treatment and Control (BPTC) methods will be utilized to minimize the degradation?
- ◆ What are subsurface conditions at the proposed new disposal sites?²
- ◆ What is the character of groundwater quality at the proposed new disposal sites?²
- ◆ Based on site hydrogeology, the nature of the waste, and the proposed disposal method, what level of degradation is expected to result from the expansion (if any)?
- ◆ If the proposed expansion will cause degradation, how will the degradation be confined or controlled?
- ◆ At a minimum, the report shall include the following:
 - Rationale for field investigation approach.
 - Description and documentation of all proposed investigational methods and activities.
 - Description of the site hydrogeology including stratigraphy, hydraulic conductivity of the soils, capillary rise, groundwater elevation and gradient, transmissivity, and influence of all recharge and pumping sources (i.e., a site conceptual model)
 - A detailed map showing locations of all water wells including springs and isolated wetlands within one mile of the WWTP and land application areas.
 - Description of fate and transport mechanisms for all monitored constituents.
 - Description of data reduction/analysis techniques and results.
 - Presentation of historical and supplemental site-specific soil and groundwater data.
 - Comparison of groundwater quality data to background groundwater quality and water quality objectives for each constituent.
 - An analysis of all data and conclusions regarding each of the above questions.

² This must be based on subsurface investigation at the proposed disposal site including soil borings and/or cone penetrometer tests and groundwater analyses. Groundwater samples may be obtained using a one-time sampling method such as Hydropunch®.

SMALL COMMUNITY WASTEWATER GRANT
INITIAL SCOPE OF WORK FORM
FOR THE REGIONAL WATER QUALITY CONTROL BOARD
COMPETITIVE PROJECT LISTS

Project Title: City of Lakeport Municipal Sewer District (CLMSD) Capacity Expansion Project

Type of Grant Assistance Needed (check all that apply): Planning Design Construction

Estimated Total Project Cost: \$2,000,000 **Estimated Construction Cost:** \$1,700,000

Applicant: City of Lakeport Municipal Sewer District

Mailing Address: 591 Martin St., Lakeport CA. 95453

Telephone Number: 707-263-3578

Fax Number: 707-263-1514

Contact Name: Mr. Mark Brannigan

Contact Title: Utilities Superintendent

E-mail Address: mbrannigan@cityoflakeport.com

Project Description: Design and construction of the following improvements to the existing wastewater treatment plant;

1. Expansion of spray irrigation fields by approximately 90 acres to include two recapture pump stations, additional irrigation pump, additional monitoring wells, piping and controls.
2. Installation of magnetic flow meter at the Linda Lane Lift Station to accurately record flow.
3. Construction of a diversion ditch bypass to divert natural runoff around the tail water Recapture Pump Station No. 1 and thereby extend the irrigation season.

Is the project necessary to rectify an existing or potential, health hazard or pollution problem?

Existing Potential

Health Hazard Pollution Problem

Describe the existing or potential problem: The existing reclaimed water storage reservoir and spray irrigation disposal area do not have enough capacity to meet present or future demands given a 100-year rainfall event. In April 2006, the CLMSD was forced into discharging reclaimed water to the spray irrigation area when the ground was saturated and runoff could not be recaptured. Approximately 3 to 6 MG of reclaimed water is estimated to have left the site and enter waterways that eventually flowed into Clear Lake.

List all enforcement actions such as, Orders, Moratoriums, Prohibitions, or Declarations, that exist regarding the wastewater system and/or facilities: (Please include type and title of the document, the governing agency that adopted it, and the date of the adoption):

A Notice of Violation was issued by the Central Valley Regional Water Quality Control Board on August 3, 2006. Following that, a Cease and Desist Order # R5-2007-0010 was adopted by CVRWQCB on March 15, 2007. The CVRWQCB water balance indicates that the City of Lakeport Municipal Sewer District does not have sufficient capacity for its current flows, and is in violation its WDRs. To increase capacity the Cease and Desist Order requires that CLMSD install 90 acre of additional spray irrigation, and submit a report by 1 November 2007.

Current Status of Project – Please be Specific (Ex: pre-planning, mid-planning, planning complete, pre-design, mid-design, design complete):

Pre-design has been completed and the CLMSD has signed an engineering agreement with PACE Civil, Inc. to provide engineering services through design and construction including contract administration and construction observation. The CVRWQCB Cease and Desist Order requires construction of the spray irrigation area and magnetic flow meter be completed and operational by November 1, 2007, respectively. The projects are on a fast track design and construction schedule.

Water Body Effluent Discharges to: Normally, no reclaimed water is to leave the boundaries of the facilities. If reclaimed water inadvertently leaves the site it eventually makes it to Clear Lake.

Description of Existing Wastewater Facility: Over the past three years the average dry weather flow (ADWF) has averaged 0.4 million gallons per day (MGD). All of the sewage is pumped by the Linda Lane Pump Station to extended aeration/oxidation pond system, and then pumped again through a disinfection contact pipe to a 650 acre foot storage/treatment reservoir. Reclaimed water from the storage reservoir is used for pasture irrigation on 242 acres used for disposal and recapture. The facility service area receives primarily domestic sewage from an estimated 5,000 residents. There are approximately 1,863 residential unit equivalents (RUE) contributing to the CLMSD.

Age and Condition of Facility: The existing facilities were substantially expanded in 1992 including construction of the oxidations ponds and disinfection facilities, and expansion of the spray irrigation fields and storage reservoir from 300 acre-feet to the current 650 acre-feet. The existing facilities are generally in good condition.

Will this project benefit a community currently lacking an adequate sewer system? Yes. The City of Lakeport sewer system has a serious inflow and infiltration problem that needs to be addressed. The City is currently under a Cease and Desist Order that requires expansion of the spray irrigation area and a meter installed at the Linda Lane Lift Station; among other improvements.

Will this project benefit a community whose treatment plant capacity is currently at 90% or greater? Yes. Cease and Disist Order No. R5-2007-0010 states that "...the Discharger does not have sufficient capacity for its current flows, in violation of the WDRs." (*Page 3, first paragraph*) and that CLMSD complete a variety of projects in a short time to create capacity, which was not budgeted for.

Estimated Median Household Income (MHI) of Community: \$32,226

Source of MHI Data: 2000 Census

Estimated Population Served: 5,000

Estimated % of Permanent Residents (residing more than 6 months per year): 4,150

Source of Population Data: 2000 Census lists a 17% vacancy factor.

Special Environmental Concerns: Expansion of the spray irrigation field was already covered under the original CEQA documentation. The proposed diversion ditch bypass is less than one mile in length; therefore it will be declared statutorily exempt under CEQA.

Previous Small Community Wastewater Grants Received (Include grant award date and funding amount received for each grant): None.

Anticipated Project Milestones:

<u>Task</u>	<u>Anticipated Completion Date</u>	<u>Date Completed</u>
a. Hire Consultant	March 20, 2007	_____
b. Submit Facilities Plan (Includes: Feasibility Report, Environmental (CEQA) Documents, Draft Revenue Program, Operations Evaluation)	N/A	_____
c. Submit Final Plans & Specifications (P&S)	May 1, 2007	_____
d. Start Construction	July 1, 2007	_____

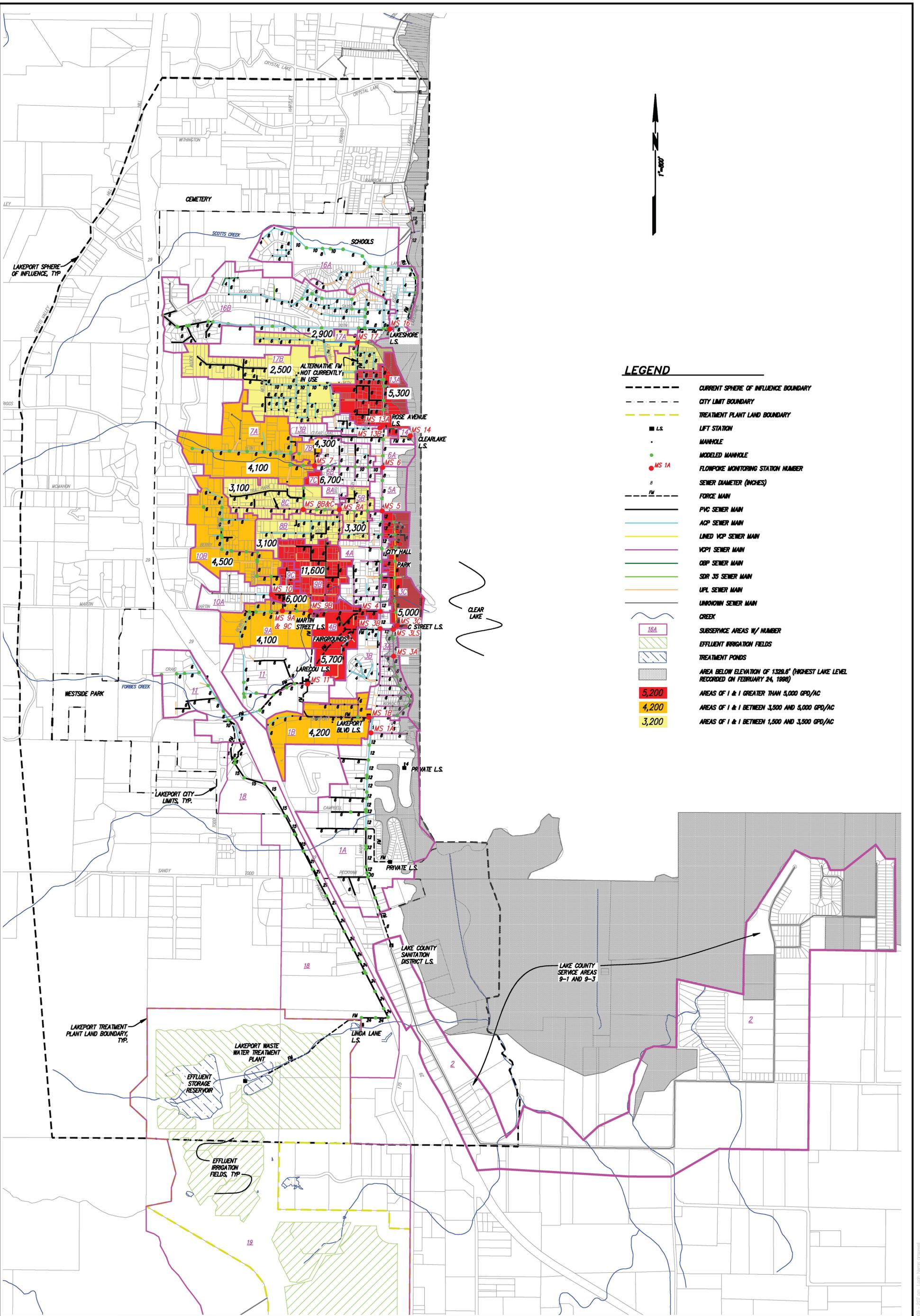
Signature of Authorized Representative

Date

Attachments:

Cease and Desist Order No. R5-2007-0010
Notice of Violation Dated 3 August 2006

PLATES



LEGEND

- CURRENT SPHERE OF INFLUENCE BOUNDARY
- - - CITY LIMIT BOUNDARY
- TREATMENT PLANT LAND BOUNDARY
- L.S. LIFT STATION
- MANHOLE
- MODELED MANHOLE
- MS 1A FLOWPICK MONITORING STATION NUMBER
- 8 SEWER DIAMETER (INCHES)
- FM FORCE MAIN
- PVC SEWER MAIN
- ACP SEWER MAIN
- LINED VCP SEWER MAIN
- VCP1 SEWER MAIN
- OBP SEWER MAIN
- SDR 35 SEWER MAIN
- UPL SEWER MAIN
- UNKNOWN SEWER MAIN
- CREEK
- 16A SUBSERVICE AREAS W/ NUMBER
- EFFLUENT IRRIGATION FIELDS
- TREATMENT PONDS
- AREA BELOW ELEVATION OF 1328.6' (HIGHEST LAKE LEVEL RECORDED ON FEBRUARY 24, 1988)
- 5,200 AREAS OF I & I GREATER THAN 5,000 GPD/AC
- 4,200 AREAS OF I & I BETWEEN 3,500 AND 5,000 GPD/AC
- 3,200 AREAS OF I & I BETWEEN 1,500 AND 3,500 GPD/AC

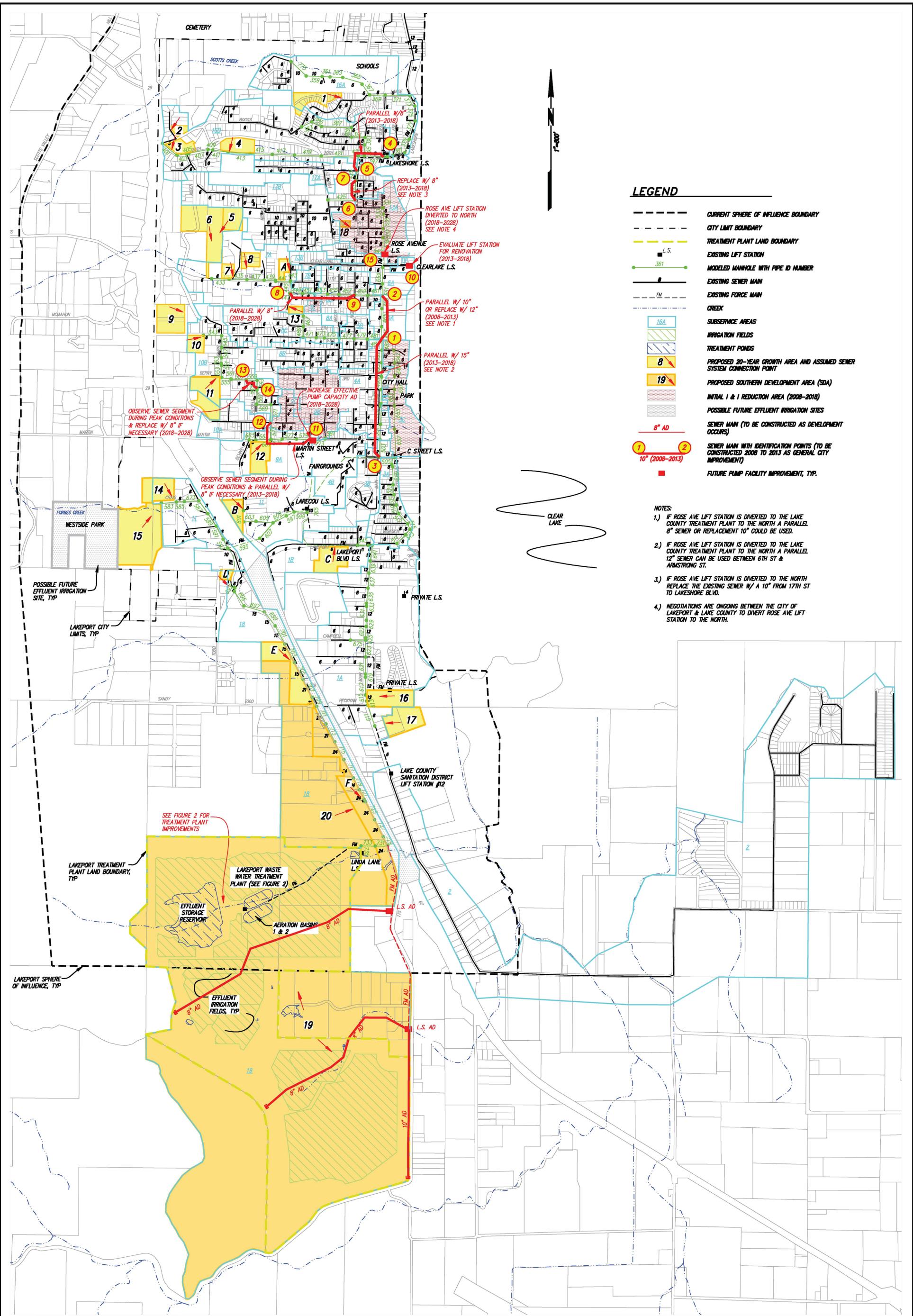
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03/08



CITY OF LAKEPORT
2008 MASTER SEWER PLAN
EXISTING SEWER SYSTEM

PLATE
1

Plot Date: April 08, 2008 - 2:07 pm; User: Name: grawwell
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LEGEND

- CURRENT SPHERE OF INFLUENCE BOUNDARY
- - - CITY LIMIT BOUNDARY
- - - TREATMENT PLANT LAND BOUNDARY
- L.S. EXISTING LIFT STATION
- 361 MODELED MANHOLE WITH PIPE ID NUMBER
- EXISTING SEWER MAIN
- FM EXISTING FORCE MAIN
- CREEK
- 16A SUBSERVICE AREAS
- IRRIGATION FIELDS
- TREATMENT PONDS
- 8 20-YEAR GROWTH AREA AND ASSUMED SEWER SYSTEM CONNECTION POINT
- 19 PROPOSED SOUTHERN DEVELOPMENT AREA (SDA)
- INITIAL I & I REDUCTION AREA (2008-2018)
- POSSIBLE FUTURE EFFLUENT IRRIGATION SITES
- SEWER MAIN (TO BE CONSTRUCTED AS DEVELOPMENT OCCURS)
- 1 2 SEWER MAIN WITH IDENTIFICATION POINTS (TO BE CONSTRUCTED 2008 TO 2013 AS GENERAL CITY IMPROVEMENT)
- 8" AD 10" (2008-2013)
- FUTURE PUMP FACILITY IMPROVEMENT, TYP.

- NOTES:**
- 1.) IF ROSE AVE LIFT STATION IS DIVERTED TO THE LAKE COUNTY TREATMENT PLANT TO THE NORTH A PARALLEL 8" SEWER OR REPLACEMENT 10" COULD BE USED.
 - 2.) IF ROSE AVE LIFT STATION IS DIVERTED TO THE LAKE COUNTY TREATMENT PLANT TO THE NORTH A PARALLEL 12" SEWER CAN BE USED BETWEEN 6TH ST & ARMSTRONG ST.
 - 3.) IF ROSE AVE LIFT STATION IS DIVERTED TO THE NORTH REPLACE THE EXISTING SEWER W/ A 10" FROM 17TH ST TO LAKESHORE BLVD.
 - 4.) NEGOTIATIONS ARE ONGOING BETWEEN THE CITY OF LAKEPORT & LAKE COUNTY TO DIVERT ROSE AVE LIFT STATION TO THE NORTH.