CASTAIC LAKE WATER AGENCY

Castaic Lake Water Agency
Recycled Water Optimization Evaluation

CLWA
Contract/Job No.: 47422

Technical Memorandum
Recycled Water Optimization Evaluation
October 2013

LEE & RO, Inc.
1199 S. Fullerton Road
City of Industry, CA 91748-1232
(626) 912-3391
www.lee-ro.com

EXHIBIT F

Optimized and New Users
without Seasonal Storage* (Figure 5)

	Zone	Total Demand (AFY)	Total Cost for Pipe	Total Cost for Pumps	Total Costs for Tanks	Total Cost for PRV's	Total Cost for Seasonal Storage	Total Cost Construction	Total Cost (CLWA) (i)	Distribution Main (Purveyors) Total Cost	Valencia Water Co.			Santa Clarita Water Division			Newhall County Water District			On-Site Retrofit Cost	Total Project Cost (Construction + Retrofit)
											Total Demand	% of Demand	Pro-rated Distribution Cost	Total Demand	% of Demand	Pro-rated Distribution Cost	Total Demand	% of Demand	Pro-rated Distribution Cost		
Phase A	1704	117	$ 1,879,000	$ 25,000	$ -	$ -	$ -	$ 1,904,000	$ 25,000	$ 1,879,000	0	0%	$ -	0	0%	$ -	117	100%	$ 1,879,000	$ 140,000	$ 2,044,000
	1487A	788	$ 6,724,000	$ 75,000	$ 729,000	$ -	$ -	$ 7,528,000	$ 1,353,000	$ 6,175,000	0	0%	$ -	176	22%	$ 1,379,000	612	78%	$ 4,796,000	$ 125,000	$ 7,653,000
	1732	25	$ 625,000	$ 25,000	$ -	$ -	$ -	$ 650,000	$ 25,000	$ 625,000	0	0%	$ -	0	0%	$ -	25	100%	$ 625,000	$ 28,000	$ 678,000
	1430A	679	$ 8,602,000	$ 25,000	$ -	$ 98,000	$ -	$ 8,725,000	$ 672,000	$ 8,053,000	679	100%	$ 8,053,000	0	0%	$ -	0	0%	$ -	$ 434,000	$ 9,159,000
	1550A	583	$ 4,942,000	$ 25,000	$ -	$ -	$ -	$ 4,967,000	$ 1,808,000	$ 3,159,000	583	100%	$ 3,159,000	0	0%	$ -	0	0%	$ -	$ 446,000	$ 5,413,000
	1594A	7	$ 1,128,000	$ -	$ -	$ -	$ -	$ 1,128,000	$ -	$ 1,128,000	0	0%	$ -	0	0%	$ -	7	100%	$ 1,128,000	$ 7,000	$ 1,135,000
	1550B	1,060	$ 6,639,000	$ 50,000	$ 729,000	$ -	$ -	$ 7,418,000	$ 899,000	$ 6,519,000	1,060	100%	$ 6,519,000	0	0%	$ -	0	0%	$ -	$ 420,000	$ 7,838,000
	1711	777	$ 6,245,000	$ 150,000		$ -	$ -	$ 6,395,000	$ 150,000	$ 6,245,000	777	100%	$ 6,245,000	0	0%	$ -	0	0%	$ -	$ 434,000	$ 6,829,000
	1895	204	$ 1,405,000	$ 25,000	$ 729,000	$ -	$ -	$ 2,159,000	$ 754,000	$ 1,405,000	204	100%	$ 1,405,000	0	0%	$ -	0	0%	$ -	$ 252,000	$ 2,411,000
	1430C	161	$ 2,166,000	$ 50,000	$ -	$ -	$ -	$ 2,216,000	$ 1,679,000	$ 537,000	161	100%	$ 537,000	0	0%	$ -	0	0%	$ -	$ 7,000	$ 2,223,000
	1430B	359	$ 3,669,000	$ -	$ -	$ -	$ -	$ 3,669,000	$ 737,000	$ 2,932,000	359	100%	$ 2,932,000	0	0%	$ -	0	0%	$ -	$ 399,000	$ 4,068,000
	Subtotal Phase A	4,760	$ 44,024,000	$ 450,000	$ 2,187,000	$ 98,000	$ -	$ 46,759,000	$ 8,102,000	$ 38,657,000	3,824	80%	$ 28,850,000	176	4%	$ 1,379,000	761	16%	$ 8,428,000	$ 2,692,000	$ 49,451,000
	Phase A Total Project Cost/AFY =		$ 10,400			Phase A Total Project Cost =		$ 49,451,000			Phase A Total Distribution Main + On-Site Retrofit Costs =			$ 41,349,000							
Phase A Summary (Accumulated):		4,760	**Total Project Cost/AFY =**		$ 10,400		**Total Project Cost =**	$ 49,451,000	$ 8,102,000	$ 41,349,000	3,824	80%	$ 28,850,000	176	4%	$ 1,379,000	761	16%	$ 8,428,000	$ 2,692,000	$ 49,451,000

(ii)

	Zone	Total Demand (AFY)	Total Cost for Pipe	Total Cost for Pumps	Total Costs for Tanks	Total Cost for PRV's	Total Cost for Seasonal Storage	Total Cost Construction	Total Cost (CLWA) (i)	Distribution Main (Purveyors) Total Cost	Valencia Water Co.			Santa Clarita Water Division			Newhall County Water District			On-Site Retrofit Cost	Total Project Cost (Construction + Retrofit)
											Total Demand	% of Demand	Pro-rated Distribution Cost	Total Demand	% of Demand	Pro-rated Distribution Cost	Total Demand	% of Demand	Pro-rated Distribution Cost		
Phase B	Newhall	4,453	$ 9,563,000	$ 75,000	$ -	$ -	$ -	$ 9,638,000	$ 5,011,000	$ 4,627,000	0	0%	$ -	0	0%	$ -	4,453	100%	$ 4,627,000	$ -	$ 9,638,000
	Subtotal Phase B	4,453	$ 9,563,000	$ 75,000	$ -	$ -	$ -	$ 9,638,000	$ 5,011,000	$ 4,627,000	0	0%	$ -	0	0%	$ -	4,453	100%	$ 4,627,000	$ -	$ 9,638,000
	Phase B Total Project Cost/AFY =		$ 2,200			Phase B1 Total Project Cost =		$ 9,638,000			Phase B Total Distribution Main + On-Site Retrofit Costs =			$ 4,627,000							
Phase A to B Summary (Accumulated):		9,213	**Total Project Cost/AFY =**		$ 6,400		**Total Project Cost =**	$ 59,089,000	$ 13,113,000	$ 45,976,000	3,824	41%	$ 28,850,000	176	2%	$ 1,379,000	5,214	57%	$ 13,055,000	$ 2,692,000	$ 59,089,000

(ii)

	Zone	Total Demand (AFY)	Total Cost for Pipe	Total Cost for Pumps	Total Costs for Tanks	Total Cost for PRV's	Total Cost for Seasonal Storage	Total Cost Construction	Total Cost (CLWA) (i)	Distribution Main (Purveyors) Total Cost	Valencia Water Co.			Santa Clarita Water Division			Newhall County Water District			On-Site Retrofit Cost	Total Project Cost (Construction + Retrofit)
											Total Demand	% of Demand	Pro-rated Distribution Cost	Total Demand	% of Demand	Pro-rated Distribution Cost	Total Demand	% of Demand	Pro-rated Distribution Cost		
Phase C	1300A	228	$ 4,786,000	$ 75,000	$ 729,000	$ -	$ -	$ 5,590,000	$ 2,473,000	$ 3,117,000	228	100%	$ 3,117,000	0	0%	$ -	0	0%	$ -	$ 182,000	$ 5,772,000
	1430B	1,252	$ 14,350,000	$ 175,000	$ 729,000	$ -	$ -	$ 15,254,000	$ 5,706,000	$ 9,548,000	1,202	96%	$ 9,173,000	23	2%	$ 174,000	26	2%	$ 201,000	$ 1,196,000	$ 16,450,000
	1487A	111	$ 3,062,000	$ 25,000	$ -	$ -	$ -	$ 3,087,000	$ 25,000	$ 3,062,000	0	0%		111	100%	$ 3,062,000	0	0%	$ -	$ 63,000	$ 3,150,000
	Subtotal Phase C	1,591	$ 22,198,000	$ 275,000	$ 1,458,000	$ -	$ -	$ 23,931,000	$ 8,204,000	$ 15,727,000	1,431	90%	$ 12,290,000	134	8%	$ 3,236,000	26	2%	$ 201,000	$ 1,441,000	$ 25,372,000
	Phase C Total Project Cost/AFY =		$ 15,900			Phase C Total Project Cost =		$ 25,372,000			Phase C Total Distribution Main + On-Site Retrofit Costs =			$ 17,168,000							
Phase A to C Summary (Accumulated):		10,805	**Total Project Cost/AFY =**		$ 7,800		**Total Project Cost =**	$ 84,461,000	$ 21,317,000	$ 63,144,000	5,254	49%	$ 41,140,000	310	3%	$ 4,615,000	5,240	48%	$ 13,256,000	$ 4,133,000	$ 84,461,000

(ii)

Legend

- TANKS
- PUMPS
- NEW RW CUSTOMERS

PH DEMANDS

- less than 0.00
- 0.00~1.00
- 1.00~3.00
- 3.00~6.00
- 6.00~9.00
- 9.00~13.00
- 13.00~20.00
- 20.00~37.00
- 37.00~63.00
- greater than 63.00
- RESERVIORS
- EXISTING CLWA PIPELINE
- PHASE 2A PIPELINE
- PHASE 2C PIPELINE
- FUTURE RWP PIPELINE

RECYCLE WATER PIPELINES

- 4 INCH
- 6 INCH
- 8 INCH
- 10 INCH
- 12 INCH
- 14 INCH (EXISTING)
- 16 INCH
- 18 INCH
- 20 INCH (EXISTING)
- 21 INCH (EXISTING)
- 24 INCH
- 30 INCH
- 36 INCH
- 42 INCH

CONSTRUCTION PHASES

- PHASE A
- PHASE B
- PHASE C
- PHASE D
- PHASE E
- PHASE F
- PHASE G
- PHASE H
- CLWA SERVICE AREA

OPTIMIZED AND FUTURE USERS

Total Demand: 12,356 AFY

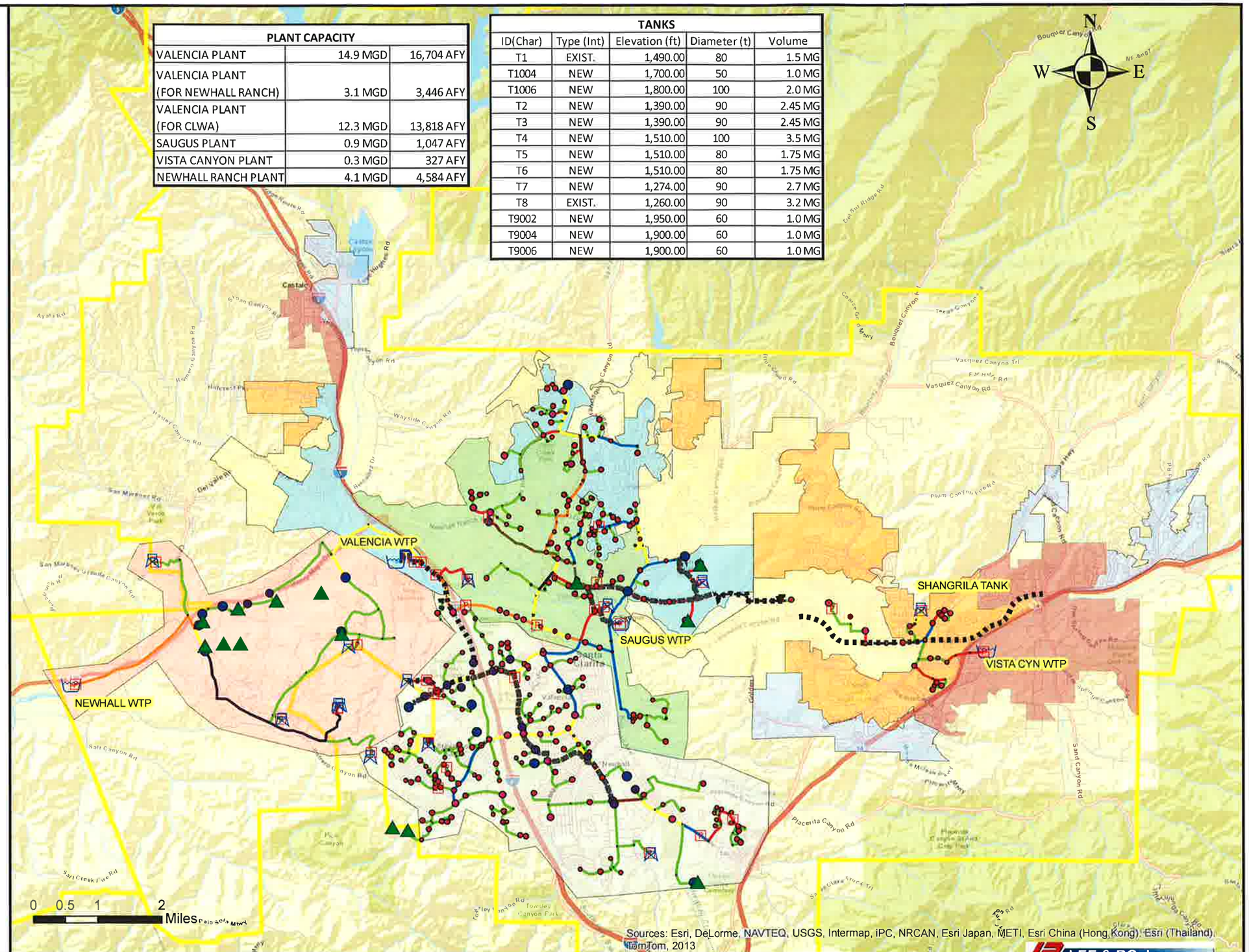
Total Retrofit Demand = 6,885 AFY
Total New Demand = 1,018 AFY
Total Newhall Demand = 4,453 AFY

Castaic Lake Water Agency Recycled Water System

FIGURE 5
Optimized & Future Users without Seasonal Storage Analysis

PLANT CAPACITY		
VALENCIA PLANT	14.9 MGD	16,704 AFY
VALENCIA PLANT (FOR NEWHALL RANCH)	3.1 MGD	3,446 AFY
VALENCIA PLANT (FOR CLWA)	12.3 MGD	13,818 AFY
SAUGUS PLANT	0.9 MGD	1,047 AFY
VISTA CANYON PLANT	0.3 MGD	327 AFY
NEWHALL RANCH PLANT	4.1 MGD	4,584 AFY

TANKS				
ID(Char)	Type (Int)	Elevation (ft)	Diameter (t)	Volume
T1	EXIST.	1,490.00	80	1.5 MG
T1004	NEW	1,700.00	50	1.0 MG
T1006	NEW	1,800.00	100	2.0 MG
T2	NEW	1,390.00	90	2.45 MG
T3	NEW	1,390.00	90	2.45 MG
T4	NEW	1,510.00	100	3.5 MG
T5	NEW	1,510.00	80	1.75 MG
T6	NEW	1,510.00	80	1.75 MG
T7	NEW	1,274.00	90	2.7 MG
T8	EXIST.	1,260.00	90	3.2 MG
T9002	NEW	1,950.00	60	1.0 MG
T9004	NEW	1,900.00	60	1.0 MG
T9006	NEW	1,900.00	60	1.0 MG



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