



Recycled Water Feasibility Study

capital construction costs to modify or replace the existing recycled water BPS and on-going O&M costs for the expanded recycled water pump station and existing and proposed pipelines.

The comparison of the \$1,634 per AF cost of this Alternative and the \$1,350 per AF cost for potable water in Rialto, \$1,035 per AF cost for potable water in WVWD, and \$667 per AF cost for potable water in SBMWD indicate that Alternative 3 is not economically feasible. If the parallel pipeline and jack and bore were excluded from the capital cost the cost per AF of recycled water would be reduced to \$1,542 per AF which is still more than the potable water cost per AF for each water potable water provider.

4.6 Alternative 4

Alternative 4 consists of creating a new northern recycled water service area. Source water for the northern service area will be supplied by a proposed scalping plant to be located in Jerry Eves Park. The scalping plant would scalp wastewater flows from an existing 18-inch diameter gravity sewer main located in Ayala Drive. Flows would be treated at the scalping plant to produce tertiary treated recycled water. Recycled water would be stored onsite in a proposed recycled water storage tank. The recycled water storage tank would supply the proposed northern service area by gravity. A proposed fill station would be located at the scalping plant site to allow customers to fill up tanks with recycled water, to provide a source of construction water and sewer cleaning.

Alternative 4 expands recycled water service for potential recycled water customers within and outside of Rialto. Several of the potential recycled water customers are located outside of Rialto's water service area within the water service area of FWC, WVWD, and the SBMWD. Estimated recycled water demand to serve Alternative 4 is presented in Table 4-12.

Potable Water Service Area	Potential Recycled Water Customer	Average Day Demand (gallons per day)	Average Day Demand (AF/YR)	Peak Day Demand (gallons per day)	Peak Hour Demand (gallons per minute)
City of Rialto	Caltrans	56,668	63	151,179	307
City of Rialto	Rialto Bioenergy Facility ^(a)	59,096	66	153,650	320
City of Rialto	Curtis Elementary School	27,725	31	50,964	150
City of Rialto	Boyd Elementary School ^(b)	16,749	19	25,144	91
City of Rialto	Anderson Park	15,251	17	28,209	83
City of Rialto	Rialto Middle School	23,747	27	51,905	129
City of Rialto	Charlotte N. Werner Elementary School	17,545	20	26,780	95
City of Rialto	Rialto Community Day School	421	0	1,182	2
City of Rialto	Rialto City Hall	10,309	12	16,981	56
City of Rialto	Bud Bender Park	32,205	36	49,540	174



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Table 4-12. Alternative 4 Recycled Water Customers and Estimated Demand

Potable Water Service Area	Potential Recycled Water Customer	Average Day Demand (gallons per day)	Average Day Demand (AF/YR)	Peak Day Demand (gallons per day)	Peak Hour Demand (gallons per minute)
City of Rialto	Rialto Park Cemetery	23,923	27	41,168	130
City of Rialto	Margaret Todd Park / Rialto Recreational & Community Services ^(b)	9,576	11	35,956	52
City of Rialto	Rialto Center for Education ^(b)	5,663	6	11,695	31
City of Rialto	Helen L. Dollahan Elementary School ^(b)	15,887	18	25,359	86
City of Rialto	Flores Park	20,204	23	33,089	109
City of Rialto	Dunn Elementary School ^(b)	14,340	16	33,928	78
City of Rialto	Henry Elementary School ^(b)	8,382	9	21,500	45
City of Rialto	Bemis Elementary School ^(b)	8,237	9	23,045	45
City of Rialto	Myers Elementary School ^(b)	8,532	10	38,102	46
City of Rialto	Proposed Fill Station ^(c)	131,768	148	303,066	622
Fontana Water Company	Maple Elementary School ^(b)	16,805	19	34,011	91
Fontana Water Company	Virginia Primrose Elementary School ^(b)	12,754	14	26,531	69
Fontana Water Company	Ted J Porter Elementary School ^(c)	17,460	20	45,396	95
Fontana Water Company	Tamarind Park ^(c)	27,936	31	72,634	151
Fontana Water Company	North Tamarind Elementary School ^(c)	27,936	31	72,634	151
Fontana Water Company	South Tamarind Elementary School ^(d)	20,952	23	54,475	113
Fontana Water Company	Fernandez Park ^(c)	17,460	20	45,396	95
Fontana Water Company	Eric Birch High School ^(c)	34,920	39	90,792	189
San Bernardino Municipal Water District	Rialto High School	116,120	130	238,267	629
West Valley Water District	Morris Elementary School	11,334	12	29,367	61
West Valley Water District	Jehue Middle School	16,918	19	45,606	92



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Table 4-12. Alternative 4 Recycled Water Customers and Estimated Demand

Potable Water Service Area	Potential Recycled Water Customer	Average Day Demand (gallons per day)	Average Day Demand (AF/YR)	Peak Day Demand (gallons per day)	Peak Hour Demand (gallons per minute)
West Valley Water District	Calvary Chapel	15,014	17	26,206	81
Totals		841,837	943	1,903,757	3,841

(a) Estimated Peak Day Demand for proposed Rialto Bioenergy Facility based on 2/6/18 email from Yaniv Scherson with Anaergia.

(b) Estimated irrigation demand based on domestic meter data.

(c) Fill Station demand based on average annual hydrant meter use between 2015-2017.

(d) Estimated average day demand based on acreage of turf multiplied by demand factor of 3,492 gallons per acre per day.

A proposed recycled water system is required for Alternative 4. The northern service area recycled water system will include a new 0.841 MGD Sequencing Batch Reactor (SBR) scalping plant, a new 3.6 MG storage tank, a new fill station, and new recycled water pipelines to serve potential customers. Alternative 4 is illustrated Figure 4-5.

The estimated cost for Alternative 4 is \$2,850 per AF. A detailed summary of the estimated capital cost for Alternative 4 is provided in Table 4-13.

Table 4-13. Alternative 4 Recycled Water Capital Costs

Proposed Recycled Water Infrastructure	Quantity	Unit	Unit Cost (\$)	Total Cost (\$)
Scalping Plant	841,000	Gallons per Day	\$5.50	\$4,030,000
Recycled Water Storage Tank	3,100,000	Gallons	\$2.00	\$6,200,000
Fill Station	1	Lump Sum	\$100,000	\$100,000
New Pipeline				
4-Inch Diameter Pipe	16,619	Linear Feet	\$80	\$1,330,000
6-Inch Diameter Pipe	11,937	Linear Feet	\$100	\$1,200,000
8-Inch Diameter Pipe	10,692	Linear Feet	\$140	\$1,500,000
10-Inch Diameter Pipe	17,141	Linear Feet	\$160	\$2,750,000
12-Inch Diameter Pipe	10,604	Linear Feet	\$200	\$2,130,000
16-Inch Diameter Pipe	5,742	Linear Feet	\$240	\$1,380,000
Subtotal				\$20,620,000
40 Percent Contingency				\$8,250,000
Total Capital Cost				\$28,870,000
Annual Amortized Capital Cost				\$2,189,554
Annual ac-ft. of Recycled Water				819
Annual Capital Cost per ac-ft.				\$2,675
Annual O&M Cost per ac-ft.				\$982
Total Annual Cost per ac-ft.				\$3,657

Alternative 4 would offset potable water use within Rialto, FWC, SBMWD, and WVWD service areas. Areas located outside of the Rialto water service area would require new recycled water

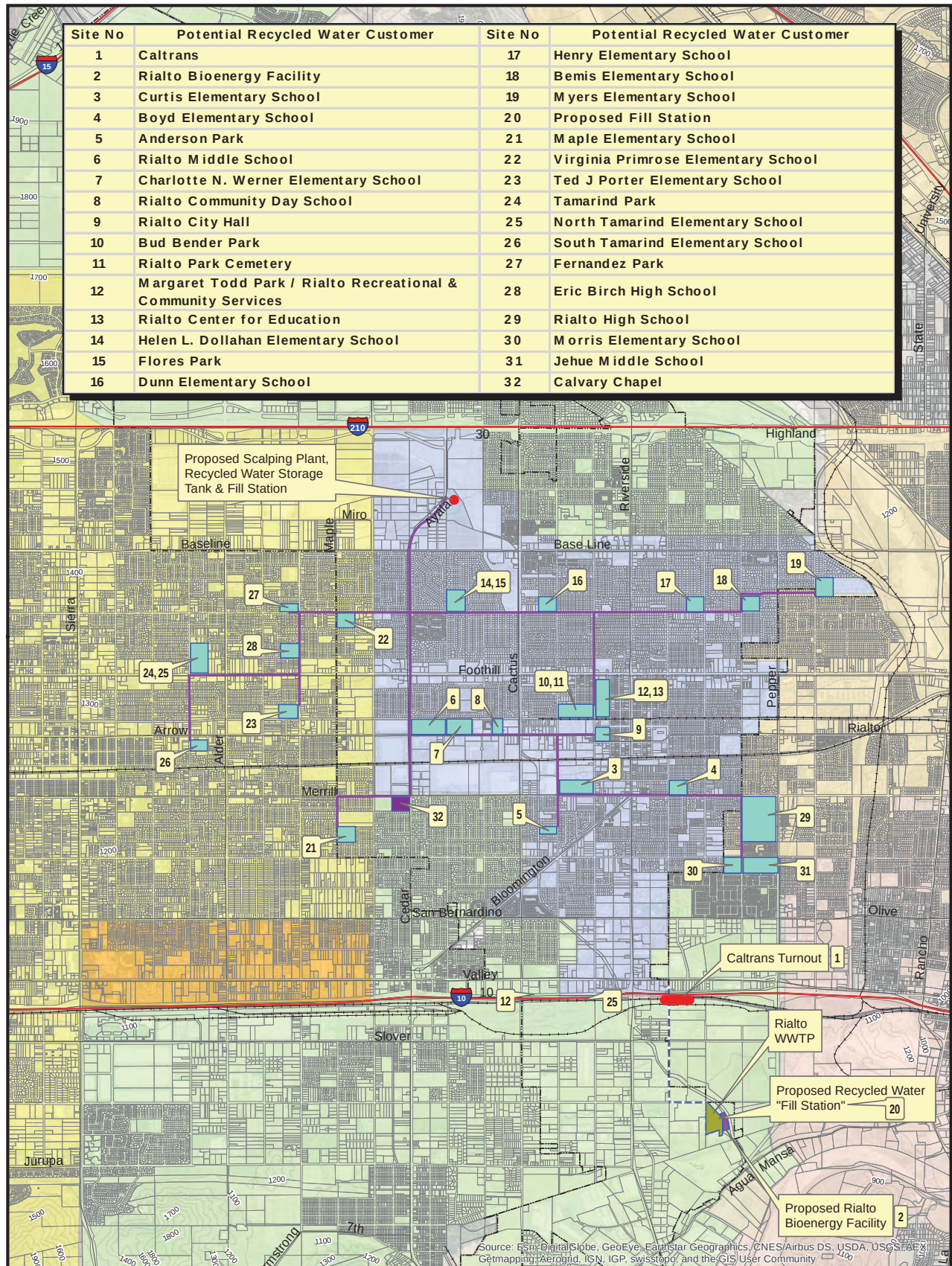


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wholesale agreements with Rialto. Construction of a new recycled water system would require construction disturbance within City streets. This alternative would continue to provide a consistent water source supply for habitat restoration in the Rialto Channel and Santa Ana River. Alternative 4 includes use of available recycled water to offset potable water use for construction water. Costs for this alternative include capital construction costs for a new, 0.841 MGD SBR scalping plant, 3.6 MG storage tank, fill station, pipelines and on-going O&M costs for the SBR scalping plant and proposed pipelines.

The comparison of the \$2,823 per AF cost of this alternative and the \$1,372 per AF cost of potable water in Rialto, \$1,061 per AF cost of potable water in WVWD, \$1,932 per AF cost for potable water in FWC, and \$667 per AF cost for potable water in SBMWD indicate that Alternative 4 is not economically feasible.

DRAFT



Legend

- Rialto City Limits
- Commercial Sites
- Schools & Parks
- Scalping Plant Site
- Freeway/Highway
- +—+— Rail Road
- - - Exist. Recycled Water Pipes
- Proposed Recycled Water Pipes
- City of Colton
- City of Rialto
- Fontana Water Company
- Marigold Mutual Water Company
- San Bernardino Municipal Water District
- West Valley Water District

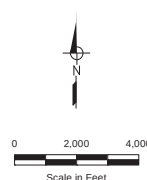


Figure 4-5
Alternative 4
City of Rialto
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