

CHAPTER TWELVE: POTABLE WATER

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CHAPTER TWELVE: POTABLE WATER

12.1 INTRODUCTION

This section describes the potable water supply and distribution system for Specific Plan I. In general, the provisions apply to each of the three subareas. Where a provision only applies to one or two of the subareas, it is so noted.

12.2 SERVICE AREA

As discussed in the Master Plan, the water supply for the project will be provided by the Byron Bethany Irrigation District (BBID). However, the Specific Plan Area is not entirely within the current service area of BBID. Areas not currently within the BBID service area will be annexed to BBID to allow for water to be provided by BBID.

The areas not currently within the BBID service area include the water treatment plant area north of Byron Bethany Road on the western side of the project area, which is not currently within any water or irrigation district, and the Old River Industrial Park subarea north of Byron Bethany Road, which is currently within the Westside Irrigation District (see Figure 12.1: Irrigation/Water District Boundaries).

- a) Water Plant Annexation to BBID. Annexation into the BBID shall be completed for the water treatment plant site located north of Byron Road at Kelso Road. Annexation to BBID shall be approved prior to submittal of the first Development Permit as described in the Master Plan.
- b) Wastewater Annexation to BBID. Annexation of the wastewater plant to BBID shall be approved prior to the need for potable water.

12.3 MAINTENANCE OF AGRICULTURAL WATER SUPPLY

Areas located outside of this Specific Plan Area will continue to be used for agriculture throughout the development of the Specific Plan, and therefore water service for irrigation uses must be maintained for as long as feasible.

Only the eastern end of the 70-foot-elevation irrigation canal which is within this Specific Plan Area will be abandoned. The entire 120-foot elevation canal and portions of the 155-foot elevation canal will remain in operation.

- a) 70-Foot Elevation Canal. The 70-foot elevation BBID canal shall be cut back in increments from its eastern end when it is no longer needed.
- b) 155-Foot Canal. The portion of the 155-foot elevation canal which is within the Specific Plan Area shall be abandoned and replaced by a pipeline. A 10-inch diameter pipeline and a 20 horsepower booster pump station shall convey water from the end of the 155-foot-elevation canal, around the Mountain House Business Park subarea to the BBID service area parcel located east of the Mountain House Business Park subarea (see Figure 12.1: Irrigation /Water District Boundaries).
- c) Irrigation Supply Maintenance. The historical use of irrigation water within the Specific Plan I area exceeds the required urban water for the same area by 53%.

The surplus water will be used for urban uses upon annexation of non-BBID lands (see Table 12.3: Historical Water Use, Specific Plan I).

- d) Agricultural Drainage. The development of the central area of this Specific Plan will require the conversion of all farm fields from Mascot Drive to Byron Road, except for the fields located in Neighborhood H. The fields around the Town Center not within Specific Plan I will be needed as interim storm detention basins. Neighborhood H will continue to be served water by the 70-foot canal without modification. Fields in Neighborhood H will continue to drain to the BBID underground drain which drains northwest along Byron Road.

Fields south of Mascot will continue to be served by the 120-foot canal. Drainage patterns will remain the same except where fields are cut along Mascot Drive and new drainage ditches are added. Drainage will continue to the BBID drain along Mountain House Parkway to Byron Road. The Mountain House Parkway tile drain is deep and will be left in place until development occurs in the non-residential areas along Mountain House Parkway. This agricultural drainage will terminate at Mountain House Creek.

Development of both the Mountain House Business Park and the Old River Industrial Park will require shutdown of both farm fields. No other farm areas or drainage lines will be impacted.

Development of the water treatment plant has no impacts on any farm fields as this area is not irrigated.

No other BBID facilities are impacted.

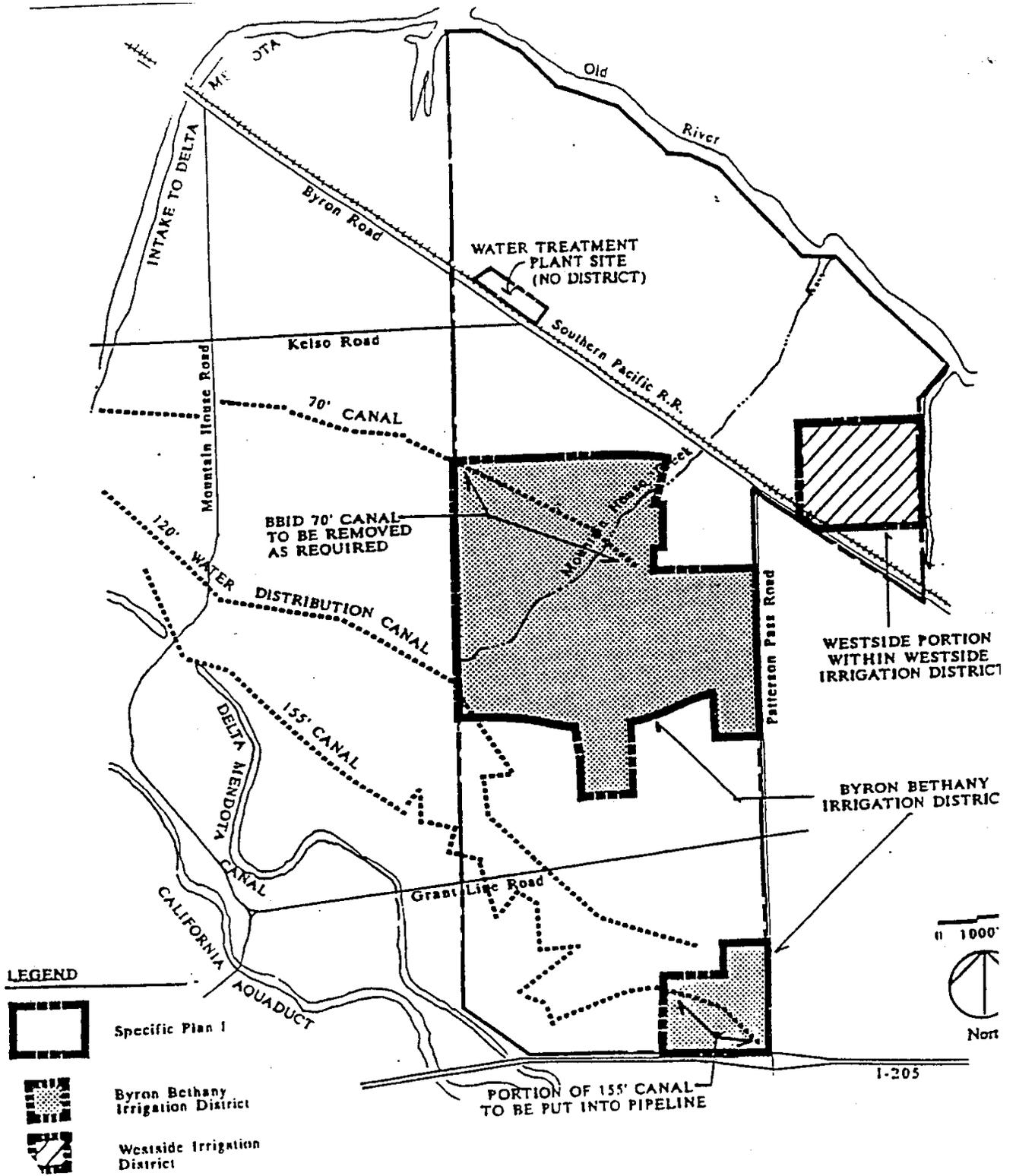


FIGURE 12.1 – IRRIGATION/WATER DISTRICT BOUNDARIES

MOUNTAIN HOUSE SPECIFIC PLAN I

Table 12.1 Specific Plan I Potable Water Demand Revised 6/2003			
Land Use	Acres (1)	Conservation Demand w/conservation w/o reclamation	
		Average Annual Water Use (AF/AC YR)	Total Annual Water Use (AF/YR)
CENTRAL MOUNTAIN HOUSE			
Neighborhood E			
Low Density Residential	101.1	2	202.2
Medium Density Residential	107.5	2.5	268.75
Medium-High Density Residential	19.4	3	58.2
Neighborhood E Total	228.0		529.15
Neighborhood F			
Low Density Residential	142.3	2	284.6
Medium Density Residential	66.4	2.5	166
High Density Residential	24.0	3.5	84
Neighborhood F Total	232.7		534.6
Neighborhood G			
Low Density Residential	83.5	2	167
Medium Density Residential	88.1	2.5	220.25
Medium-High Density Residential	22.3	3	66.95
Neighborhood G Total	193.9		454.15
Other Land Uses			
Neighborhood Commercial	5.3	1.3	6.89
Community Commercial	17.8	1.3	23.14
Office Commercial	30.29	1.3	39.38
Business Park	35.43	1.3	46.06
Neighborhood Park	15	4	60
Community Park	65.9	4	263.6
Wetland	7.5	0	0
Easements	8	2	16
K-8 Schools	48	1.8	86.4
High School	46.5	1.8	83.7
Churches/Institutional	5.9	0.5	2.95
Arterial Street ROW	119.6	1	119.6
Other Land Uses Total	393.5		747.72
Central Mountain House Total	1,040		2,265.62
OLD RIVER INDUSTRIAL PARK			
Limited Industrial	48.1	1.3	62.53
General Industrial	55.3	1.3	71.89
Wastewater Treatment Site	21.9	0.5	11
Utility Area	26.3	0.5	13.15
Collector Street ROW	10.5	0	0
Old River Industrial Park Total	162.1		158.57
MOUNTAIN HOUSE BUSINESS PARK			
Freeway Service Commercial	30	1.3	39
Office Commercial	9.7	1.3	12.61
Transit	4.4	0.5	2.2
Business Park	71	1.3	92.3
Arterial Street ROW	20.5	1	20.5
Collector Street ROW	9	0	0
Mountain House Business Park Total	144.6		166.61

For the raw water pump station, transmission pipeline and water treatment plant, the capacities required for each subarea are shown in Table 12.2.

12.4 POTABLE WATER DEMAND, SUPPLY AND TREATMENT

It is estimated that the annual potable water demand at buildout of the Specific Plan Area, assuming the conservation measures discussed in the Master Plan are implemented, will be 2,521 2,500 acre-feet per year (see Table 12.1: Specific Plan I Potable Water Demand Conditions). This is approximately 25% of the water demand projected at buildout of the entire Master Plan area. The majority of this water demand is associated with the Central Mountain House subarea as is shown in Table 12.2: Specific Plan I Potable Water Demand.

The water supply facilities will be phased to match the water demands of the various phases of development. The conceptual locations of the water facilities required to serve the Specific Plan Area are shown on Figure 12.2: Water Supply Facilities.

Raw water for Specific Plan I will be supplied as specified in the Master Plan via a pump station and conveyance pipelines. It is anticipated that the pipeline will be sized to serve the entire community. The pumps in the pump station will be phased as needed. The pipeline will be as described in the Master Plan.

Figure 12.3: Water Treatment Plant Site Layout illustrates the site layout of the water treatment plant.

- a) Capacities. The water supply facilities shall have capacities which correspond with the water demands of the Specific Plan Area, as shown in Table 12.2.

The water supply facilities shall have the following minimum capacities (shown in million gallons per day, mgd, or cubic feet per second, cfs):

Water Supply Facility	Required Capacity
Raw Water Pump Station	5.0 mgd
Raw Water Transmission Pipeline	5.0 mgd (7.7 cfs)
Water Treatment Plant	5.0 mgd
Water Storage Reservoirs/Tanks	See Section 12.5: Potable Water Storage and Distribution
Distribution Pipelines	See Section 12.5: Potable Water Storage and Distribution

- b) Historical Water Use. The amount of BBID waters available for use in the Specific Plan I area is based on the historical use of farm water within the same area. Compliance with the County’s water policy is confirmed by the fact that the historical water use exceeds the Specific Plan I demands by over 50%. The identified surface waters will be reserved for community expansions into non-BBID or Riparian Water areas.

Table 12.2:
Specific Plan I Potable Water Demand Conditions
 Revised 6/2003

Mountain House Development Area	Total Annual Water Use (AF/YR)	Average Day Demand (mgd)	Maximum Day Demand (mgd)	Peak Hour Demand (mgd)
Central Mountain House	2,265.62	2.0	4.3	7.4
Old River Industrial Park	158.57	0.1	0.3	0.5
Mountain House Business Park	166.61	0.1	0.3	0.6
TOTAL	2,590.80	2.2	4.9	8.5

MOUNTAIN HOUSE SPECIFIC PLAN I

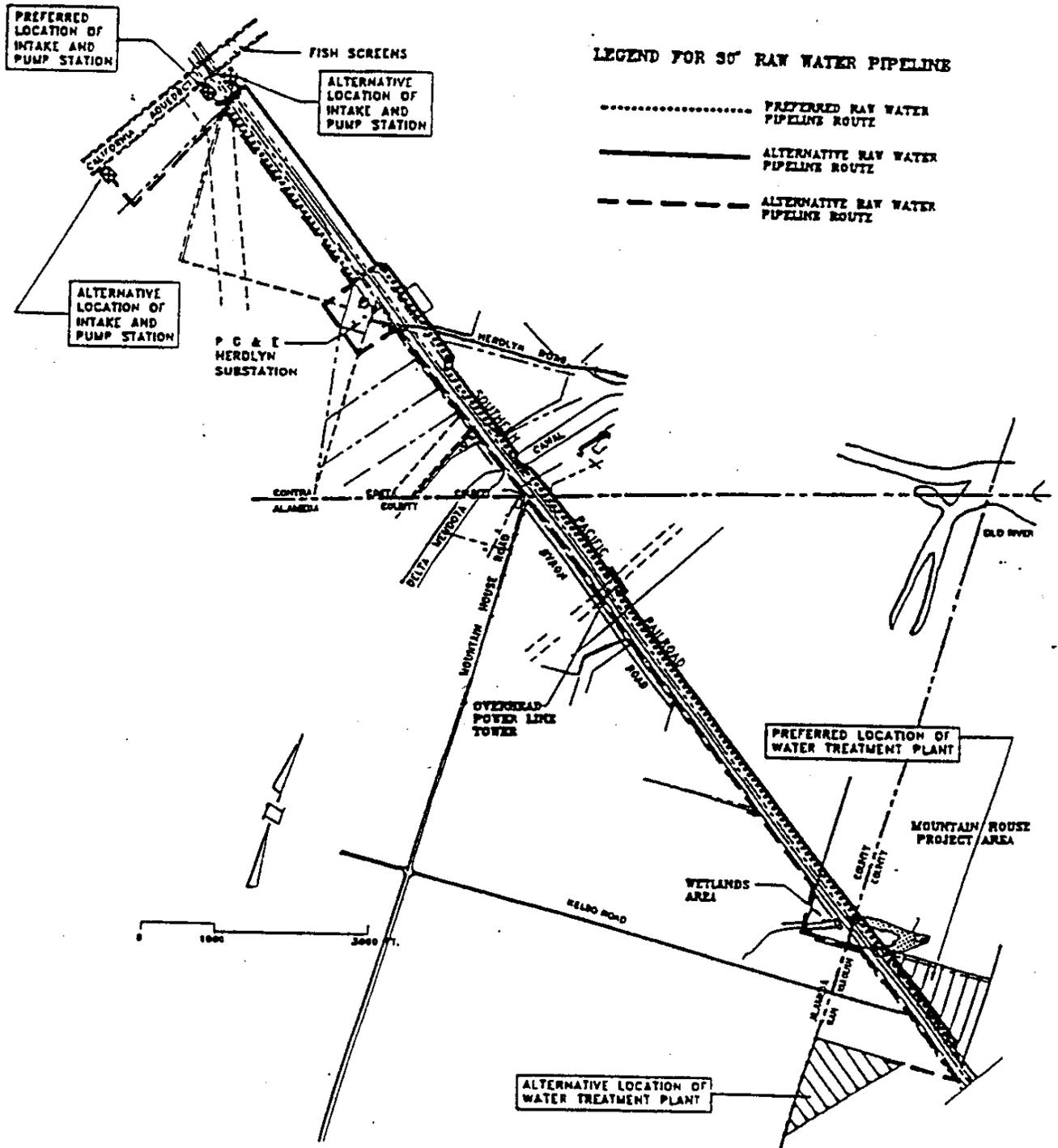


FIGURE 12.2 – WATER SUPPLY FACILITIES

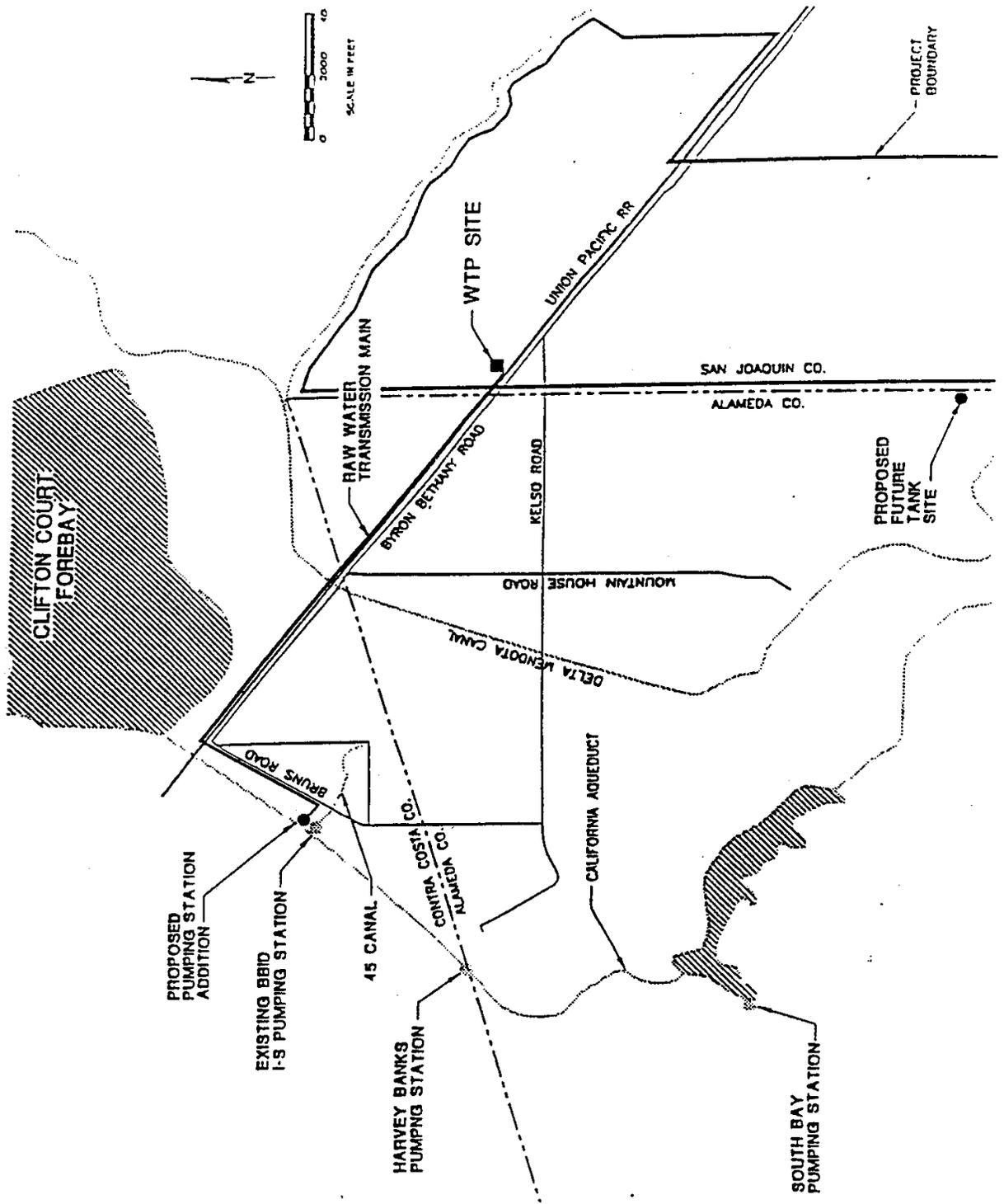


FIGURE 12.3 – LOCATION OF RAW WATER PIPELINE AND PUMP STATION

Table 12.3:		
Historical Water Use, Specific Plan I		
Mountain House Development Area	Acres*	Historic Water Use Acre-ft
Central Area	860	2,795
Lands of Arnaudo (BBID)	180	585
Lands of Arnaudo (BBID)		
Mountain House Business Park		
Lands of Spatafore (BBID)	142	462
		2,795
Old River Industrial Park		
Lands of Silva (Westside)	152	494
		2795
Total Historic Water Use		4,336
Less Westside Water Not Available		(494)
Total BBID Water Available		3,842
Less Required Urban Water		(2,521)
Surplus Water		1,321

*Irrigated Acres Only

12.5 POTABLE WATER STORAGE AND DISTRIBUTION

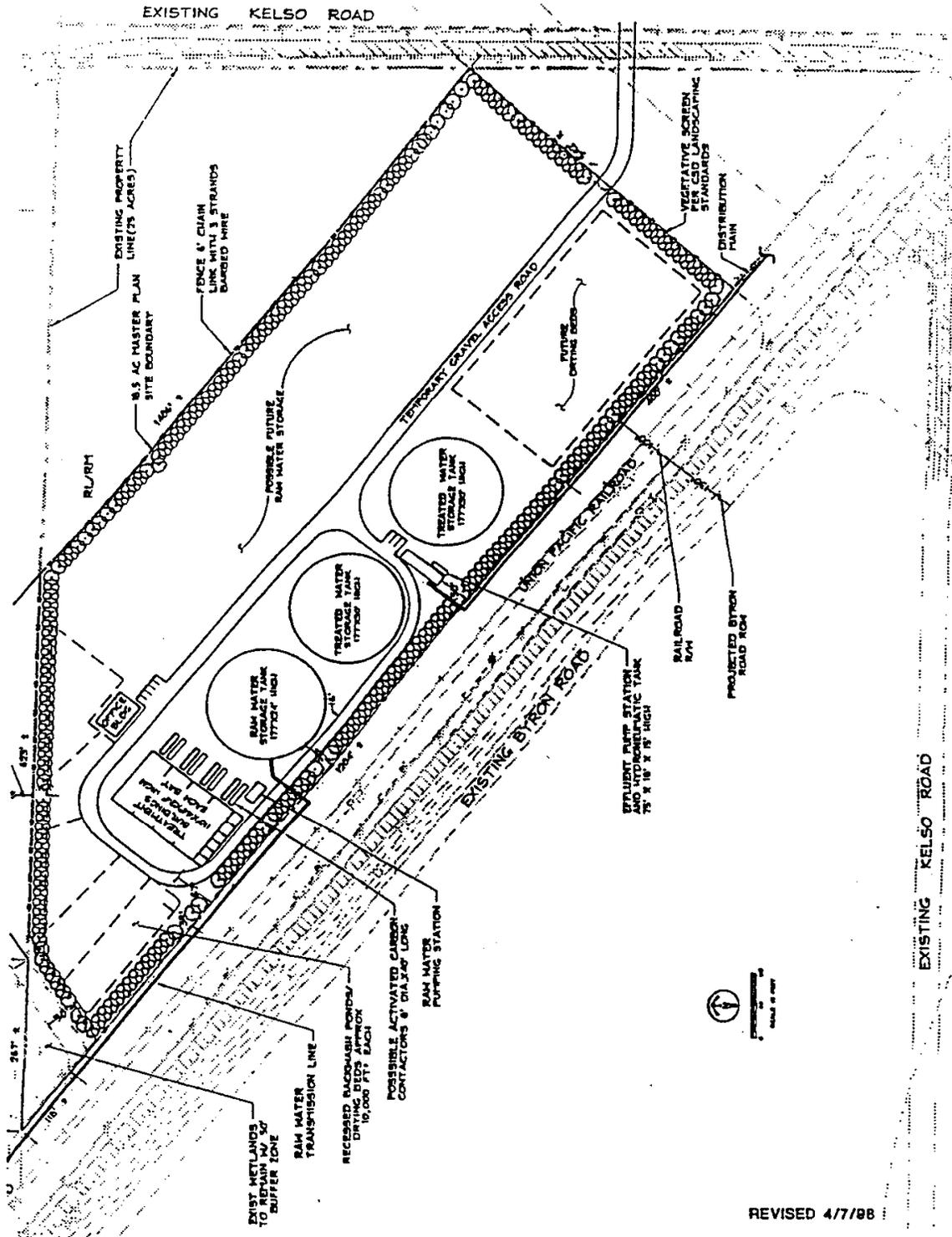
As discussed in the Master Plan, a certain amount of storage is required within the system for operational, emergency and fire purposes. At buildout of Specific Plan I, the total amount of storage required is approximately 6.4 million gallons. Of this total storage, approximately five million gallons is associated with the Central Mountain House subarea and 0.7 million gallons is associated with each of the other two subareas. The criteria for water storage is discussed in the Master Plan.

Figure 12.4: Water Distribution and Treatment Facilities Plan shows the proposed water distribution system for the Specific Plan Area. The design and layout of this system is in conformance with that shown in the Master Plan, and the design criteria specified by County standards and the Master Plan. The distribution system is intended to provide adequate water service to the Specific Plan Area.

- a) Water Storage. Required water storage shall be located at the water treatment plant.
- b) Storage Quantities. Base quantity of treated water for fire and operational storage is 2.0 mg. Additional emergency storage of 4.4 mg will be added in increments in proportion to the needs of each stage of subarea development.

12.6 WATER TREATMENT PLANT SLUDGE DISPOSAL

A complete discussion of the sludge disposal associated with the water treatment plant and the wastewater treatment plant is provided in Chapter Thirteen: Wastewater Collection and Treatment. Because the first years of the Specific Plan use little water and the sludge drying beds are sized for the full 25% of community buildout, sludge disposal will not be required through the buildout of Specific Plan I.



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FIGURE 12.4 - - WATER TREATMENT PLANT SITE LAYOUT