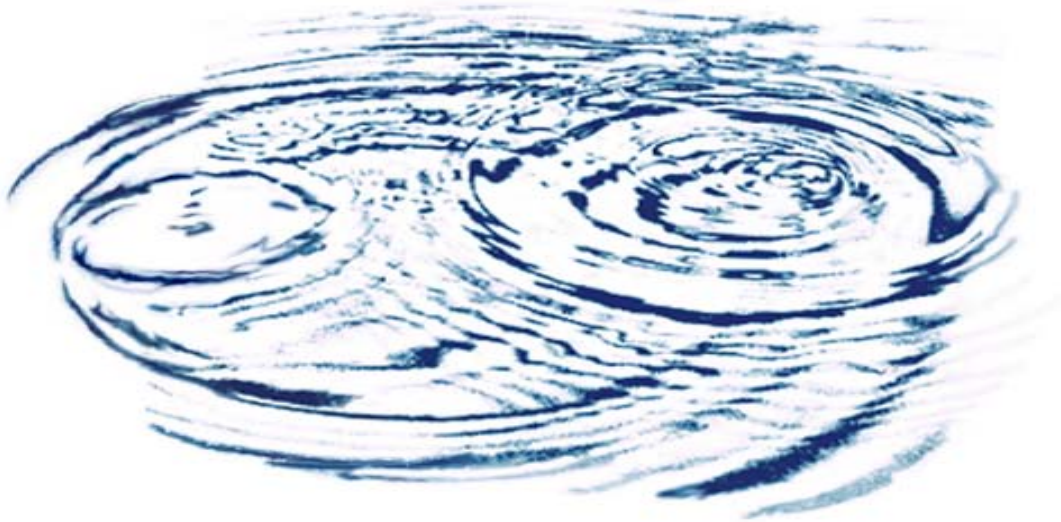
APPENDIX K
UTILITIES DOCUMENTATION

APPENDIX K1
WATER SUPPLY ASSESSMENT

City of Monrovia

Water Supply Assessment
Alexan Monrovia Project



September 2018

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Executive Summary

The proposed "Alexan Monrovia Project" (Project) is located within the City of Monrovia (City). Water service in the City is provided by the City's water system. The proposed Project will result in an additional water demand during an average/normal year of up to 69 acre-feet per year (AFY) by fiscal year 2019-20 and thereafter. The City's estimated water demands with the Project is approximately 7,106 AFY by the year 2040. The City currently meets water demands by pumping groundwater from the Main San Gabriel Basin. Management of the Main San Gabriel Basin, including delivery of untreated imported water for groundwater replenishment, allows the City (and all other producers within the Main San Gabriel Basin) to use groundwater to meet water demands without limitations on the quantity of groundwater pumping from the Main San Gabriel Basin. Reliability of the Main San Gabriel Basin groundwater supplies has been demonstrated during droughts with no resulting limitation of groundwater production. Based on the demonstrated reliability of the City's water supply sources, sufficient water supplies can be reasonably concluded to be fully reliable and available to meet the City's existing demands and future demands through 2040, with the Project, including during single and multiple dry years.

1.0 Introduction

The proposed Project will consist of 436 residential units. The proposed Project will be constructed on property which is currently improved and currently served water by the City. The water demand for the existing improvements on the property is approximately 1.2 AFY. Water demands within the City and the long-term water supply for the City are discussed below.

1.1 City of Monrovia

The City's water system is located in Los Angeles County and serves the City of Monrovia (see Figure 1). The City's water system is a "public water system" as defined by California Water Code Section 10912 (c). Currently, there are approximately 9,600 service connections serving a population of approximately 36,600 people. The City's water system will provide water service to the Project (see Figure 1).

1.2 Water Supply Planning Provisions

Population growth in the State of California has resulted in additional water demand on water systems. The State legislature has enacted laws to ensure the increased demands are adequately addressed and a firm source of water supply is available prior to approval of certain new developments. The regulations include California Water Code Division 6, Part 2.10, Sections 10910-10915 (Water Supply Planning to Support Existing and Planned Future Use) (California Water Code) which is briefly described below. The provisions of the California Water Code and the Government Code seek to promote more collaborative planning between local water suppliers, cities and counties and require detailed information regarding water availability to be provided to city and county land use planners prior to approval of certain specified large land use development projects.

This Water Supply Assessment (WSA) was prepared pursuant to the requirements of the California Water Code and the Government Code for the approach, required information, and criteria to confirm the City has sufficient water supplies to meet the

projected water demands of the Project, in addition to existing and other planned future uses. The Urban Water Management Plan (UWMP) is a foundational document for compliance with the California Water Code. The provisions of the California Water Code repeatedly identify the UWMP as a planning document that can be used by a water supplier to meet the standards set forth in both statutes. California Environmental Quality Act (CEQA) guidelines section 15083.5 contains similar provisions regarding consultation with water agencies for certain projects. The City's 2015 UWMP (June 2016), Metropolitan Water District of Southern California's (MWD) 2015 Regional UWMP (June 2016), and Upper San Gabriel Valley Municipal Water District's (USGVMWD) 2015 UWMP (June 2016), prepared pursuant to California Water Code Division 6, Part 2.55, Section 10608 (Sustainable Water Use and Demand Reduction) and California Water Code Division 6, Part 2.6, Sections 10608-10656 (Urban Water Management Planning) and the Water Conservation Act of 2009 (also known as SB X7-7), describe future water demands and future availability of the water supply sources used by the City and other retail water agencies operating within the Main San Gabriel Basin. These UWMP documents were used to prepare this WSA. The projected water demands for the Project are not included in the City's 2015 UWMP.

1.2.1 California Water Code (Sections 10910-10915)

Existing law requires every urban water supplier to identify, as part of its UWMP, the existing and planned sources of water available to the supplier. Existing law prohibits an urban water supplier that fails to prepare or submit its UWMP to the Department of Water Resources (DWR) from receiving financial or drought assistance from the State until the plan is submitted.

The California Water Code requires an urban water supplier to include in its UWMP a description of all water supply projects and programs that may be undertaken to meet total projected water use over the next 20 years. The California Water Code requires a city or county that determines a project is subject to the CEQA to identify any public water system that may supply water for proposed developments and to request those public water systems to prepare a specific WSA. If the water demands for the proposed developments have been accounted for in a recently adopted UWMP, the water supplier

may incorporate information contained in that plan to satisfy certain requirements of a WSA. The California Water Code requires the assessment to include, along with other information, an identification of existing water supply entitlements, water rights, or water service contracts relevant to the identified water supply for the proposed project and the quantities of water received in prior years pursuant to those entitlements, rights, and contracts.

The California Water Code also requires the public water system, or the city or county, as applicable, to submit its plans for acquiring additional water supplies if that entity concludes that water supplies are, or will be, insufficient.

1.2.2 Government Code 66473.7

Government Code 66473.7 prohibits approval of a tentative map, or a parcel map for which a tentative map was not required, or a development agreement for a subdivision of property of more than 500 dwelling units, except as specified, including the design of the subdivision or the type of improvement, unless the legislative body of a city or county or the designated advisory agency provides written verification from the applicable public water system that a sufficient water supply is available or, in addition, a specified finding is made by the local agency that sufficient water supplies are, or will be, available prior to completion of the project. Sufficient water supply is the total water supply available during normal, single-dry, and multiple-dry years within a 20-year projection that will meet the projected demand, in addition to existing and planned future uses.

2.0 Water Demands

2.1 Historical Water Demand

The City's primary water supply source is groundwater from the Main San Gabriel Basin (see Figure 2). In addition, the City can purchase treated imported water supplies from MWD through its USG-7 connection. Table 2 provides the City's city wide historical water use. Over the past 20 years, the City's groundwater production has ranged from approximately 5,810 acre-feet per year (AFY) to approximately 9,706 AFY, with an average production of approximately 7,690 AFY. The City historically has not utilized imported water supplies to meet demands.

Table 1. City Wide Historical Water Demands (AFY)

Calendar Year	Main Basin	MWD USG-7	Total Demand
1998	7,466	0	7,466
1999	9,073	0	9,073
2000	8,477	0	8,477
2001	8,812	0	8,812
2002	5,810	0	5,810
2003	9,706	0	9,706
2004	8,497	0	8,497
2005	7,956	0	7,956
2006	7,958	0	7,958
2007	8,250	0	8,250
2008	7,868	0	7,868
2009	7,334	0	7,334
2010	6,813	0	6,813
2011	7,084	0	7,084
2012	7,661	0	7,661
2013	7,830	0	7,830
2014	7,569	0	7,569
2015	6,229	0	6,229
2016	6,410	0	6,410
2017	7,006	0	7,006
20-Year Average	7,690	0	7,690

Sources: Main Basin production from 1998 through 2017 from 2015 UWMP and Main San Gabriel Basin Annual Reports. Treated Imported Water data from 2015 UWMP and Main San Gabriel Basin Annual Reports.

2.2 Projected Future Water Demand

The proposed Project will consist of approximately 436 residential units. The City's water system will provide potable water to the entire Project.

2.2.1 Project Water Demand

According to the California State Water Resources Control Board, the indoor water standard will be 55 gallons per capita per day (GPCD). Assuming 2.5 persons per residential units, the estimated population from the proposed Project is about 1,090 (436 units x 2.5). Based on the 55 GPCD and an estimated 1,090 people living in the proposed Project, the estimated demand from the proposed Project is approximately 67 AFY (55 GPCD x 1,090 x 365 days in a year / 325,851 gallons in an acre-feet).

According to a landscape plan prepared by EPT Design, the proposed Project will have approximately 47,894 square feet of irrigated areas. The Project landscape irrigation demand was estimated using a water budget calculator from the California Department of Water Resources. Based on an evapotranspiration rate of 52.30 inches per year (City of Pasadena), an irrigation efficiency of 0.7, a plant factor of 0.4 for low to moderate water use plants, and a unit conversion factor of 0.62, the estimated irrigation water use rate is approximately 2.5 AFY per acre (or 52.30 x 0.62 x 0.4 x (1 / 0.7) x (43,560 sq. ft / 1 acre) x (1 acre-foot / 325,851 gallons)). The estimated irrigation water demand for the Project is approximately 2.7 AFY (or 47,894 sq. ft. x (1 acre / 43,560 sq. ft.) x 2.5 AFY per acre). The total estimated demand is approximately 70 AFY (or 67 AFY + 2.7 AFY).

The proposed Project will be constructed on property which had an existing water demand of 1.2 AFY. Consequently, the additional demand from the proposed Project is approximately 69 AFY (or 70 AFY – 1.2 AFY).

2.2.2 City Wide Projected Future Demands

The City's 2015 UWMP includes current and projected future water demands for its service area over the next twenty years. However, the projected water demands for the Project are not included in the City's 2015 UWMP. The projected water demands in the City's 2015 UWMP were calculated based on: (1) urban per capita water use targets developed pursuant to Senate Bill SBX7-7 (Water Conservation Act of 2009); and (2) population projections. Urban per capita water use targets were identified in the City's 2015 UWMP. The population projections incorporated in the City's 2015 UWMP were projected using growth rate projections obtained from the Southern California Association of Governments (SCAG), an organization mandated by the federal government to research and draw up plans for transportation, growth management, hazardous waste management, and air quality.

Table 2 shows the projected water demands through 2040 for the City's service area including the Project's water demands. It is anticipated the projected water demands for the Project will begin by 2020.

Table 2. City Wide Projected Water Demands (AFY)

Fiscal Year	Water Demands (AFY)	
	2015 UWMP [1]	Including Alexan Monrovia Project [2]
2019-20	6,635	6,704
2024-25	6,734	6,803
2029-30	6,833	6,902
2034-35	6,935	7,004
2039-40	7,037	7,106

Notes:
1/ The projected water demands for the Project are not included in the City's 2015 UWMP.
2/ Includes an additional demand of approximately 69 AFY from the Alexan Monrovia Project

3.0 Water Supply Sources

3.1 Main San Gabriel Basin

The total fresh water storage capacity of the Main San Gabriel Basin is estimated to be approximately 8.7 million AF. Of that storage, about 1,000,000 AF is historically considered to have been actively managed for local public water supply. The Court adjudication of the Main San Gabriel Basin in 1973 provided groundwater management that allows operation of basin storage to meet water demands and provide a mechanism to fund the purchase and replenishment of untreated imported water to supplement recharge of local water. The management of basin storage, and the use of supplemental imported water for recharge, expand and increase the reliability of the available basin groundwater supply. A description of the elements of the adjudication that allow efficient management of the Main San Gabriel Basin is included in the Main San Gabriel Basin Judgment (see attached Appendix A). Although there is no limit on the quantity of groundwater that may be extracted by Parties to the Main San Gabriel Basin adjudication, including the City, groundwater production in addition to a pumper's proportional share (pumper's share) of the Operating Safe Yield (see Appendix B), requires the pumper to bear the cost of imported Replacement Water to recharge the Main San Gabriel Basin. The City's pumper's share is currently 3.09472 percent of the Operating Safe Yield.

3.1.1 Groundwater Wells

The City pumps groundwater from its five active wells, Wells No. 2, No. 3, No. 4, No. 5, and No. 6, which are located within the Main Basin. These wells have a combined capacity of about 10,000 gpm.

Table 3 shows the City's historical groundwater production from the Main San Gabriel Basin, which ranged from 5,810 AFY to 9,706 AFY, with an average of approximately 7,690 AFY. The reliability of the Main San Gabriel Basin to meet all demands is discussed below in Section 3.1.2.

Table 3. City's Production from the Main San Gabriel Basin (AFY)

Calendar Year	Total Demand
1998	7,466
1999	9,073
2000	8,477
2001	8,812
2002	5,810
2003	9,706
2004	8,497
2005	7,956
2006	7,958
2007	8,250
2008	7,868
2009	7,334
2010	6,813
2011	7,084
2012	7,661
2013	7,830
2014	7,569
2015	6,229
2016	6,410
2017	7,006
20-Year Average	7,690

Source: Calendar Years 1998 through 2017 from 2015 UWMP and Main San Gabriel Basin Annual Reports.

3.1.2 Main San Gabriel Basin Reliability

The City's primary water supply is from the Main San Gabriel Basin (additional water supply from MWD is discussed in Section 3.2). The 1973 Court adjudication required the efficient management of groundwater supplies. Historical water supplies used within the Main San Gabriel Basin to meet its demands are shown in Table 4 and include groundwater extractions, surface water diversions, and direct delivery of treated imported water (from USGVMWD and Three Valleys Municipal Water District (TVMWD)) within the Main San Gabriel Basin. Table 5 provides rolling ten-year averages of the total water demand. Although historical total water demands in the Main San Gabriel Basin had generally increased as population increased, the rolling ten-year averages for the past ten years show a decrease in average total water demand.

Table 4. Historical Water Demand in the Main San Gabriel Basin (AFY)

Fiscal Year	Recorded Production [1]			Direct Deliveries (Treated Imported Water) [2]			Total Water Demand [3]
	Groundwater	Surface Water	Sub-Total	USGVMWD	TVMWD	Sub-Total	
1997-98	236,325	17,714	254,039	7,404	6,804	14,208	268,247
1998-99	242,937	22,215	265,152	7,131	6,714	13,846	278,998
1999-00	261,676	17,011	278,687	11,151	9,911	21,062	299,749
2000-01	250,889	20,031	270,919	9,070	10,900	19,971	290,890
2001-02	247,125	17,203	264,328	18,346	16,806	35,153	299,481
2002-03	232,790	4,700	237,491	20,687	20,295	40,982	278,472
2003-04	245,513	7,337	252,850	27,675	23,084	50,758	303,608
2004-05	234,337	12,930	247,266	12,895	17,587	30,482	277,748
2005-06	246,473	13,466	259,940	10,981	12,144	23,125	283,065
2006-07	270,075	14,255	284,330	14,290	11,614	25,904	310,234
2007-08	250,223	7,944	258,167	16,958	13,216	30,174	288,341
2008-09	236,976	13,731	250,707	8,533	13,150	21,683	272,390
2009-10	223,322	14,524	237,846	6,557	9,773	16,329	254,176
2010-11	214,211	13,446	227,657	3,429	6,886	10,316	237,973
2011-12	219,534	17,494	237,029	3,975	6,587	10,561	247,590
2012-13	230,630	12,284	242,914	3,529	10,815	14,344	257,258
2013-14	233,893	6,659	240,552	3,490	18,725	22,216	262,768
2014-15	196,409	11,931	208,339	9,069	13,447	22,517	230,856
2015-16	173,855	8,972	182,826	2,624	10,116	12,740	195,567
2016-17	184,450	12,794	197,243	3,197	9,055	12,251	209,495
5-Year Average	203,847	10,528	**214,375**	4,382	12,432	16,814	231,189

Notes:

[1] "Recorded Production" consists of groundwater extractions and surface water diversions which is accounted for as if it were a groundwater extraction, but does not include untreated imported water purchased for replacement/ recharge purposes.

[2] "Direct Deliveries (Imported Water)" does not include untreated imported water purchased for replacement/recharge purposes and includes treated imported water from USG-5.

[3] Does not include recycled water deliveries

TVMWD = Three Valleys Municipal Water District

USGVMWD = Upper San Gabriel Valley Municipal Water District

Source: Main San Gabriel Basin Watermaster Annual Report 2016-17

Table 5. 10-Year Rolling Average of Total Main San Gabriel Basin Water Demands

Fiscal Year	10-Year Rolling Average	Annual Change of 10-Year Average
2006-07	289,049	--
2007-08	291,059	0.7%
2008-09	290,398	-0.2%
2009-10	285,840	-1.6%
2010-11	280,549	-1.9%
2011-12	275,360	-1.9%
2012-13	273,238	-0.8%
2013-14	269,154	-1.5%
2014-15	264,465	-1.7%
2015-16	255,715	-3.3%
2016-17	245,641	-3.9%

Source: Main San Gabriel Basin Watermaster Annual Reports. 10-Year Rolling Average based on Table 4.

Future total water demands in the Main San Gabriel Basin can be projected based on population growth. Population projections within the Main San Gabriel Basin were based on population data provided in USGVMWD's 2015 UWMP, San Gabriel Valley Municipal Water District's (SGVMWD's) 2015 UWMP, and TVMWD's 2015 UWMP. Based on the population data, the total population within the combined service areas for all Main San Gabriel Basin water producers was estimated (see Table 6). The total population served by Main San Gabriel Basin water producers is projected to increase from approximately 1,202,300 people, in 2015, to approximately 1,355,200 people, in 2040. This represents an increase of approximately 153,000 people over twenty five years, which is an average annual growth rate of approximately 0.6 percent.

Table 6. Projected Population Served by Main San Gabriel Basin Producers

Year	Population
2015	1,202,260
2020	1,226,492
2025	1,253,721
2030	1,296,341
2035	1,325,459
2040	1,355,200

Sources: Population projections from Upper San Gabriel Valley Municipal Water District's 2015 UWMP, San Gabriel Valley Municipal Water District's 2015 UWMP, and Three Valleys Municipal Water District's 2015 UWMP

Total water demands in the Main San Gabriel Basin (excluding major industrial uses and exports to the Central Basin) can be compared with population information to obtain a per capita water use rate. Between fiscal years 2012-13 and 2016-17 (see Table 7), the average annual demand in the Main San Gabriel Basin was approximately 231,188 AFY; the average total export to the Central Basin was approximately 37,552 AFY; and the average total major industrial demand was approximately 5,828 AFY. Based on the net average demand over the recent five years in the Main San Gabriel Basin of approximately 187,808 (231,188 – 37,552 – 5,828) AFY and a 2015 population in the Main San Gabriel Basin of approximately 1,202,260 people, the average annual per capita water use rate was approximately 0.16 AFY (187,808 AFY / 1,202,260 people) for a single family residence. For the purposes of this WSA, it is assumed the per capita water use rate of 0.16 AFY (about 140 GPCD) will continue over the next twenty years (from 2020 through 2040). Based on the estimated per capita water use and projected population growth, total water (local plus treated imported) served by producers in the Main San Gabriel Basin will increase from approximately 234,974 AFY, in 2020, to approximately 257,080 AFY, in 2040, as shown in Table 7, with an annual growth rate of approximately 0.4 percent.

Table 7. Projected Main San Gabriel Basin Water Demands (AFY)

Year	Population [1]	Main San Gabriel Basin Demands (AFY)				Less Treated Imported [5]	Net Local [5]
		Demand from Population [2]	Central Basin Exports [3]	Industrial Demands [4]	Total		
2012-13*	--	209,596	41,369	6,293	257,258	14,344	242,914
2013-14*	--	214,425	41,859	6,484	262,768	22,216	240,552
2014-15*	--	190,211	35,389	5,256	230,856	22,517	208,339
2015-16*	--	156,550	33,786	5,230	195,566	12,740	182,826
2016-17*	--	168,259	35,358	5,877	209,494	12,251	197,243
5-Year Average		**187,808**	**37,552**	**5,828**	**231,188**	**16,814**	**214,375**
2020	1,226,492	191,594	37,552	5,828	234,974	16,814	218,160
2025	1,253,721	195,847	38,052	5,828	239,727	16,814	222,914
2030	1,296,341	202,505	38,552	5,828	246,885	16,814	230,072
2035	1,325,459	207,054	39,052	5,828	251,934	16,814	235,120
2040	1,355,200	211,699	39,552	5,828	257,080	16,814	240,266

Notes:
* In fiscal year

[1] See Table 6

[2] Based on an average annual water use rate of approximately 0.16 AFY per capita which is about 140 gallons per capita per day

[3] 2020 exports are based on average exports between fiscal years 2012-13 and 2016-17; Exports are anticipated to increase and have been estimated to increase approximately 2,000 AF over a 20 year period and assumed constant thereafter

[4] Based on average industrial demands between fiscal years 2012-13 and 2016-17; assumed to remain constant

[5] See Table 4

Producers in the Main San Gabriel Basin obtain water supplies from groundwater extractions, surface water diversions, and direct deliveries of treated imported water. As discussed in Appendix B, producers within the Main San Gabriel Basin have a share of the Operating Safe Yield of the Main San Gabriel Basin and can produce that amount of water without paying a Replacement Water Assessment. A few producers also have surface water rights (approximately 10,500 AFY) in addition to their share of the Operating Safe Yield and can produce those rights free of a Replacement Water Assessment. Producers that extract a groundwater and/or surface water amount greater than their allocated share are charged a Replacement Water Assessment, which is used to purchase untreated imported water for replacement/recharge into the Main San Gabriel Basin. Untreated imported water for replacement/recharge purposes

is purchased from one of three municipal water districts overlying or partially overlying the Main San Gabriel Basin that provide imported water for groundwater replacement/recharge or for direct use (see Appendix B). The three municipal water districts are USGVMWD, SGVMWD and TVMWD. The City is located within USGVMWD's service area. The management of the Main San Gabriel Basin and the large volume of groundwater in storage allow groundwater producers, including the City, to produce groundwater even when Replacement Water is not available. Any requirement to purchase untreated imported water for replacement/recharge purposes can be met when such water is available in the future. Also discussed in Appendix B is the cyclic storage provision allowing producers, like the City, to store supplemental water within the Main San Gabriel Basin for the purpose of supplying a future Replacement Water requirement. For example, the City and other producers have added/deducted from cyclic storage accounts and as a result, have a total balance of approximately 73,923 AF in cyclic storage accounts as of June 2018 illustrating the effectiveness of this water resource program in meeting the Replacement Water requirements of water producers.

The Replacement Water requirement in the Main San Gabriel Basin is determined by the Operating Safe Yield, production rights and Main San Gabriel Basin production. The Operating Safe Yield in the Main San Gabriel Basin has averaged about 156,000 AFY over the past five (5) years (fiscal years 2013-14 through 2017-18) plus the surface water rights are fixed at about 10,500 acre-feet for a total of about 166,500 acre-feet of water rights. As shown in Table 8, over the past five (5) years (fiscal years 2012-13 through 2016-17), the average water production from the Main San Gabriel Basin has been approximately 214,375 AFY, and the average Replacement Water requirements and Cyclic Storage deductions (total Basin over production) has been approximately 34,733 AFY.

Based on the projected water demands (see Table 7) and the recent historical average water production of 214,375 AFY (during fiscal years 2012-13 through 2016-17 as shown in Table 8) in the Main San Gabriel Basin, the Replacement Water requirement can be projected for future years, assuming other sources of water supply remain at

historical levels. Other sources of water supply historically used in the San Gabriel Valley include direct delivery of approximately 16,814 AFY of treated MWD imported water (discussed below). The projected total water demands (less direct delivery) can be compared with the recent historical average water production (214,375 AFY) to determine the incremental additional Replacement Water requirement. The total projected Replacement Water requirement is estimated to be the sum of the recent historical average Replacement Water requirement (34,733 AFY) and the incremental additional Replacement Water requirement.

Table 8. Operation of Main San Gabriel Basin (AFY)

Fiscal Year	Total Production [1]	Direct Deliveries [1]	Replacement Water Requirements and Cyclic Storage Deductions [2]
2012-13	242,914	14,344	29,769
2013-14	240,552	22,216	40,113
2014-15	208,339	22,517	45,828
2015-16	182,826	12,740	26,420
2016-17	197,243	12,251	31,536
5-Year Average	**214,375**	**16,814**	**34,733**

Notes:

[1] See Table 4

[2] Includes Replacement Water Requirements and deductions from Producer Cyclic Storage. From Main San Gabriel Basin Annual Report for FY 2016-17

For the purpose of this WSA, the adopted 2018-19 Operating Safe Yield of 150,000 AFY (which was influenced by the decreasing water levels in the Main San Gabriel Basin due to the recent dry hydrologic cycle) was assumed to remain the same through 2040 and was used to determine potential future Replacement Water requirements. The estimated Replacement Water requirement in 2019-20, based on an Operating Safe Yield of approximately 150,000 AFY, 2020 demand less direct deliveries compared with the average water production (during fiscal years 2012-13 through 2016-17 as

shown in Table 8), and adding the 5-year historical average Replacement Water requirement, is calculated to be 38,518 AFY.

In addition to untreated supplemental replacement/recharge deliveries, treated imported water is available to Main San Gabriel Basin water producers as a direct delivery (see Table 4). Over the past five years, total direct deliveries of treated imported water have ranged from approximately 12,300 AFY to 22,500 AFY, with an average of approximately 16,814, as shown in Table 8. Demands for direct delivery water in the Main San Gabriel Basin previously increased (approximately 50,800 AF in 2003-04) due to groundwater contamination. However, these demands have declined with the completion of large-scale groundwater treatment facilities in 2005 and 2006.

Based on the average total direct delivery of treated imported water of approximately 16,814 AFY and the calculated 2019-20 Replacement Water requirement of 38,518 AFY, the estimated total current imported water demand is approximately 55,332 (16,814 + 38,518) AFY based on an Operating Safe Yield of 150,000 AFY. Table 9 projects the total future imported water requirement (including replacement/recharge and direct delivery) for producers in the Main San Gabriel Basin, without assuming increased use of other sources of water supply such as recycled water. Table 9 shows that total imported water requirement could increase by approximately 1,361 AF between 2020 and 2040. Because other sources of water supply, including groundwater imported from the Raymond Basin and groundwater recharge of local rainfall runoff, have been assumed to remain at historical levels, it is assumed the increasing Main San Gabriel Basin water demands listed in Table 9 will be met by increases in imported water. Increased water demands can also be met through increased use of recycled water in the Main San Gabriel Basin. Recycled water supplies are not incorporated in determining the future imported water requirements shown in Table 9. Increases in imported water demands in Table 9 will be a combination of increased Replacement Water deliveries and a constant level of direct delivery of imported water. The reliability of imported water supplies is discussed further in Section 4.2.

Table 9. Projected Total Main San Gabriel Basin Imported Water Demands (AFY)

Year	2020	2025	2030	2035	2040
OSY of 150,000 AFY					
Untreated Imported Water	38,518	39,487	41,891	39,782	39,879
Treated Imported Water	16,814	16,814	16,814	16,814	16,814
Total Imported Water	**55,332**	**56,300**	**58,705**	**56,595**	**56,693**
Net Increase	--	968	3,372	1,263	1,361

3.2 Imported Water Supplies

The City can receive direct deliveries of treated imported water from MWD through its USG-7 connection, which has a capacity of 6,300 gpm or 9.1 MGD. The City historically has not utilized imported water supplies to meet demands, as shown in Table 1.

As discussed previously, the Main San Gabriel Basin Watermaster purchases untreated imported water from SGVMWD (from the California State Water Project (SWP)) and untreated imported water supplies from MWD through USGVMWD and TVMWD. Further discussions of imported water supplies are provided in Sections 3.2.1 through 3.2.3.

3.2.1 SWP Water Reliability

MWD and SGVMWD contract with the State of California, through the SWP, for the delivery of northern California water through the California Aqueduct. The SWP is a water storage and delivery system maintained and operated by the California Department of Water Resources (DWR). The SWP is a statewide water conveyance system that diverts and stores water in Northern and Central California and conveys water (including through the Sacramento-San Joaquin Delta region) to 29 water agencies throughout the State. The SWP has delivered water since the 1960's through a network of aqueducts, pumping stations and powerplants. In order for the SWP to

increase deliveries to the maximum amount of contractual commitments to water, the SWP must expand its water conveyance facilities to divert greater flows from north of the Bay-Delta area into the California Aqueduct.

The San Francisco Bay -Sacramento River Delta area (Bay-Delta) is a part of the SWP water delivery system. The reliability of the Bay-Delta to deliver water may be impacted by potential risks associated with endangered species, earthquakes, levee failure, and climate change.

The Bay Delta Conservation Plan (BDCP) grew out of the CALFED Bay-Delta Plan's Ecosystem Restoration Program Conservation Strategy. A draft BDCP was prepared through a collaboration of state, federal, and local water agencies, state and federal fish agencies, and a broad range of stakeholders. The BDCP identifies conservation strategies, water flow, and habitat restoration actions in California's Sacramento-San Joaquin Delta. The goal of the BDCP is to provide for both species/habitat protection and improved reliability of water supplies. During the extensive environmental review period for the BDCP, State and Federal agencies proposed that the California WaterFix Project replace the proposed BDCP as the State's proposed project. The California WaterFix Project consists of new water conveyance facilities with three new diversion points in the north Delta, Delta tunnel conveyance and ancillary facilities, operational elements, and habitat restoration and other environmental commitments. The California WaterFix Project was evaluated in a partially Recirculated Draft BDCP, EIR/EIS published on July 10, 2015. In December 2016, the Final EIR/EIS was made available to the public. This Final EIR/EIS has been certified as complying with CEQA as required under Section 15090, subd. (a)(1) of the CEQA Guidelines. The Final EIR/EIS describes the alternatives, discusses potential environmental impacts, and identifies mitigation measures that would help avoid or minimize impacts. It also provides responses to all substantive comments received on the 2013 Draft EIR/EIS and 2015 partially Recirculated Draft EIR/Supplemental Draft EIS. The BDCP is intended to meet the standards of the Sacramento-San Joaquin Delta Reform Act of 2009, described in the paragraph below. On July 21, 2017, DWR certified the Final EIR, adopted the CEQA Findings and a Statement of Overriding Considerations, adopted the Mitigation Monitoring and Reporting Program, approved the California WaterFix, and filed the

Notice of Determination (NOD) with the Governor's Office of Planning and Research for the California WaterFix project, which includes the three new diversion points in the north Delta, Delta tunnel conveyance and ancillary facilities, operational elements, and habitat restoration and other environmental commitments. The Record of Decision for the California WaterFix project will be issued by the U.S. Bureau of Reclamation at a future date.

The State of California enacted comprehensive legislation, including the Sacramento-San Joaquin Delta Reform Act of 2009 (California Water Code Division 35) which provided for an independent state agency, the Delta Stewardship Council. Pursuant to that act, the Delta Stewardship Council developed a comprehensive management plan that provides more reliable water supply for California and protects and enhances the Delta ecosystem (through development and implementation of a Delta Plan). The Delta Stewardship Council adopted a final Delta Plan in May 2013 which is the comprehensive long-term management plan for the Delta to improve statewide water supply reliability and to protect the Delta. Subsequently its 14 regulatory policies were approved by the Office of Administrative Law and became effective with legally-enforceable regulations on September 1, 2013. The Delta Stewardship Council also adopted a Programmatic Environmental impact Report (PEIR) on the Delta Plan in May 2013. The PEIR evaluates the potential impact of the Delta Plan and identifies mitigation measures. The Delta Plan was amended on February 2016, September 2016, and again in April 2018 to include refined performance measures; an exemption for single-year water transfers to be considered as covered actions; recommendations for conveyance, storage and operations; and policy for setting priorities for State investments in Delta levees.

In June 2013, a lawsuit was filed by the State Water Contractors and others seeking to overturn the Delta Stewardship Council’s adoption of the Delta Plan, promulgation of related regulations, and certification of the above referenced PEIR. The litigation brought by the State Water Contractors and others claims that the Delta Stewardship Council exceeded its authority under the Sacramento-San Joaquin Delta Reform Act of 2009 and failed to analyze impacts under CEQA, particularly foreseeable impacts of the

Delta Plan on water supplies around the state. In May 2016, the Superior Court upheld the Delta Stewardship Council on the vast majority of issues, including that the Council used best available science in developing the Delta Plan. The Court also ruled that the Delta Plan's regulations promote improved water quality, its flow recommendations promote conditions for species recovery, it promotes risk reduction strategies, and its conservation measures promote reduced reliance on the Delta. The Court, however, invalidated the entire Delta Plan because of what it identified as inadequacies in the following areas:

- The lack of enforceable, quantifiable targets for achieving reduced Delta reliance, reduced harm from invasive species, restoring more natural flows and increased water supply reliability, and
- Inadequate "promotion" of conveyance options to improve the way water projects move water across the Delta.

In November and December 2016, the Delta Stewardship Council and other parties have appealed the Court's ruling, which means the invalidation of the Delta Plan has been stayed (placed on hold) pending further action by the Appellate Court until specified revisions are completed. The Delta Plan remains in force and project proponents with covered actions remain legally required to file consistency certifications with the Delta Stewardship Council.

Governor Brown announced the creation of the California EcoRestore program in April 2015, committing to restore more than 30,000 acres of Delta habitat, which will be implemented on an accelerated timeline independent of the proposed water conveyance facilities. This comprehensive suite of habitat restoration actions under the California EcoRestore program includes specific targets for floodplain, tidal and sub-tidal, managed wetlands, and fish passage improvements to benefit native fish species and a commitment to adaptive management.

DWR's "State Water Project Final Delivery Capability Report 2017" (2017 Report), dated March 2018, indicates that there is a 77 percent likelihood (74 percent in the 2015 State Water Project Final Delivery Capability Report) that more than 2,000 thousand acre-feet per year (taf/year) of Table A water will be delivered under current conditions.

The 2017 Report incorporated future impacts on water deliveries as a result of climate change and potential limited pumping of the SWP to protect salmon, smelt, and other species in the Sacramento-San Joaquin Delta and Central Valley areas, including operational restrictions of the biological opinions issued by the U.S. Fish and Wildlife Service (USFWS) in December 2008 and the National Marine Fisheries Service (NMFS) in June 2009 governing the SWP and Central Valley Project (a Federal water storage and conveyance facility) operations. Subsequently, a U.S. District Court Judge remanded the biological opinions to the USFWS and NMFS for further review and analysis. The long term impact of these issues cannot be fully quantified at this time. DWR plans to develop additional water supply facilities in order for the SWP to deliver contracted water beyond historical delivery quantities. In addition, the 2017 Report included the CA WaterFix Project. In June 2017, the Final Biological Opinions for the CA WaterFix were released. In July 2017, the incidental take permit (20181(b) document) was issued.

3.2.2 Colorado River Water Reliability

In addition to obtaining water from the SWP, MWD obtains water from the Colorado River. MWD owns and operates the Colorado River Aqueduct which conveys water from Lake Havasu on the Colorado River to water transmission pipelines and to Lake Matthews for storage. MWD's Colorado River water right includes a fourth and fifth priority under the 1931 Seven Party Agreement relating to California's share in the Colorado River water supply. In 1964 a United States Supreme Court decree (Arizona v. California) limited California to 4.4 million AF per year from the Colorado River plus any available surplus water. An amount of 550,000 AF was allotted to California under the fourth priority right and an amount of 662,000 AF was allotted to California under the fifth priority right. MWD can receive water under the fifth priority right when the United States Secretary of the Interior determines that there is a surplus of water or if Arizona or Nevada does not use all of their allocated water. Through farm and irrigation conservation programs, improved reservoir system operations, land management programs, and water transfer and exchanges, MWD has increased the reliable supply from the Colorado River Aqueduct. According to MWD's "The Regional Urban Water

Management Plan" (RUWMP), dated June 2016, the supply capability of the Colorado River Aqueduct through the year 2035 is about 1,911,500 AFY during average, single dry, and multiple dry year conditions. A further discussion of MWD's additional water supplies is provided below.

3.2.3 Metropolitan Water District of Southern California

The City can purchase treated imported water from MWD through USG-7. In addition, MWD provides approximately 95 percent of the total imported water supplies to the Main San Gabriel Basin for both replacement/recharge purposes and direct delivery. As discussed in Appendix B, imported water from MWD is provided through USGVMWD and TVMWD, which both deliver and sell water. Untreated imported water can be spread and stored in the Main San Gabriel Basin for replacement/recharge. Treated imported water can be delivered directly to retail water utilities in the Main San Gabriel Basin with available connections.

MWD's 2015 RUWMP provides information regarding MWD's water supply reliability and the ability to meet all projected water demands. MWD has indicated in its 2015 RUWMP that, with the addition of all water supplies existing and planned, MWD would have the ability to meet all of its member agencies' projected supplemental demand for the next twenty five years, even during a repeat of the worst drought scenario.

MWD's 2015 RUWMP considers DWR's 2015 Report. MWD's 2015 RUWMP concludes that MWD will have sufficient water available for anticipated water demands in its service area, including the San Gabriel Valley area, through the year 2040. In addition, because the San Gabriel Valley primarily requires Replacement Water from MWD and delivery of Replacement Water can be shifted from dry years (when water supplies may be limited) to wet years (of water surplus), the available information shows adequate Replacement Water will be available through the year 2040.

Because of critically dry conditions in 2007 affecting MWD's main water supply sources and Federal Court rulings protecting the Delta Smelt and other aquatic species in the

Sacramento-San Joaquin River Delta, SWP water deliveries were reduced. As a result, MWD adopted a Water Supply Allocation Plan (WSAP) in February 2008 to allocate available water supplies to its member agencies. The WSAP establishes ten different shortage levels and a corresponding Allocation to each member agency. Although member agency water use is not restricted to the Allocation, additional charges would be assessed on water used above the total annual Allocation. The WSAP provides a separate reduced Allocation to a member agency for its 1) Municipal and Industrial (M&I) retail demand and 2) replenishment demand. The WSAP considers historical local water production, full service treated water deliveries, agricultural deliveries and water conservation efforts when calculating each member agency's Allocation.

In general, the WSAP process calculates total historical member agency demand. That historical demand is then compared to member agency projected local supply for a specific Allocation year. The balance required from MWD, less an Allocation reduction factor, is the member agency's "Water Supply Allocation". When an MWD Member Agency (such as USGVMWD and TVMWD) reduces its local demand through conservation or other means, the portion of the Allocation which may be delivered as imported water increases. The increased Allocation can be used for Full Service replenishment deliveries when an Allocation is in place.

In addition, MWD prepared a 2015 Update of its Integrated Resources Plan to evaluate water supply availability considering the recent developments discussed elsewhere in this WSA and provide a water resource strategy to meet future demands including anticipated groundwater replenishment demands.

In April 2015, MWD approved a WSAP Allocation Level 3 for fiscal year 2015-16. The WSAP Allocation for M&I demand and Replenishment demand for USGVMWD was estimated to be 27,913 AF for fiscal year 2015-16. MWD rescinded the WSAP Allocation for fiscal year 2016-17 and currently has not approved a WSAP Allocation for fiscal year 2017-18.

Tables 10, 11, and 12 show MWD's projected total water supplies and demands through year 2040 for average, single dry, and multiple dry years, respectively. MWD

has sufficient water supplies to meet all of its member agencies projected supplemental demand for 2020 through 2040, even during multiple dry years. MWD's greatest water demands, which occur during a multiple dry year, will increase at a rate of approximately 0.6 percent per year from approximately 2,001,000 AFY, in 2020, to 2,258,000 AFY, in 2040.

Table 10. MWD's Projected "Average" Year Water Supplies and Demands (AFY)

	2020	2025	2030	2035	2040
Supplies (Current Programs)	3,448,000	3,550,000	3,658,000	3,788,000	3,824,000
Demands	1,860,000	1,918,000	1,959,000	2,008,000	2,047,000
Surplus	1,588,000	1,632,000	1,699,000	1,780,000	1,777,000
Supplies (Proposed Programs)	63,000	100,000	386,000	428,000	468,000
Potential Surplus	1,651,000	1,732,000	2,085,000	2,208,000	2,245,000

Source: MWD's Regional UWMP, June 2016, Table 2-6

Table 11. MWD's Projected "Single Dry" Year Water Supplies and Demands (AFY)

	2020	2025	2030	2035	2040
Supplies (Current Programs)	2,584,000	2,686,000	2,775,000	2,905,000	2,941,000
Demands	2,005,000	2,066,000	2,108,000	2,160,000	2,201,000
Surplus	579,000	620,000	667,000	745,000	740,000
Supplies (Proposed Programs)	63,000	100,000	316,000	358,000	398,000
Potential Surplus	642,000	720,000	983,000	1,103,000	1,138,000

Source: MWD's Regional UWMP, June 2016, Table 2-4

Table 12. MWD's Projected "Multiple Dry" Year Water Supplies and Demands (AFY)

	2020	2025	2030	2035	2040
Supplies (Current Programs)	2,103,000	2,154,000	2,190,000	2,242,000	2,260,000
Demands	2,001,000	2,118,000	2,171,000	2,216,000	2,258,000
Surplus	102,000	36,000	19,000	26,000	2,000
Supplies (Proposed Programs)	43,000	80,000	204,000	245,000	286,000
Potential Surplus	145,000	116,000	223,000	271,000	288,000

Source: MWD's Regional UWMP, June 2016, Table 2-5

4.0 Comparision of Future Water Demand and Supply

The City's primary source of water supply is groundwater from the Main San Gabriel Basin. In addition, the City can purchase treated imported water from MWD's USG-7. The existing collective capacity from the active wells is about 10,000 gpm or about 14.4 million gallons per day (MGD). The City produced over 9,700 AFY in 2003 (which is equal to only 60 percent of the City's available well capacity). Assuming the City uses 60 percent of available well capacity (which has been demonstrated in the past) during calendar years 2020 through 2040, the City would be able to produce about 8.6 MGD (about 9,700 acre-feet).

As shown on Table 2, the projected water demands including the Project ranges from 6,705 AF to 7,107 AF from fiscal year 2019-20 through fiscal year 2039-40. The estimated projected average day water demand, including the Project, is calculated to range from about 6 MGD to about 6.4 MGD from fiscal year 2019-20 through fiscal year 2039-40. Consequently, it is anticipated the City will be able to meet its Average Day Demand from fiscal year 2019-20 through fiscal year 2039-40 with its total water supply of about 8.6 MGD.

Tables 13 through 17 show the City's projected water demands, including the Project, and sources of water supply, under future average, single dry, and multiple dry year scenarios, from 2020 to 2040. The City has historically met all of its water demands with groundwater production. Even with the City's historically reliable water supply, the City included a Drought Regulations and Water Conservation Standards (Ordinance No. 2015-05 and Resolution No. 2015-41) in its 2015 UWMP identifying actions to be taken to respond to a severe or extended water shortage (see Appendix C). If water supplies are temporarily insufficient to meet customer demand, the City may implement its Drought Regulations and Water Conservation Standards (Ordinance No. 2015-05 and Resolution No. 2015-41).

The City can increase production from the Main San Gabriel Basin in accordance with the Main San Gabriel Basin Judgment (see Appendix B), even during periods of drought

to meet its demands. As described in Appendix B, groundwater pumping limitations have never been applied to groundwater producers with rights in the Main San Gabriel Basin.

Tables 13 through 17 show that the combined capacities from the City's sources of supply will provide sufficient water supply for the City's projected water demand, including the Project, under all conditions from 2020 to 2040.

Table 13. City's Projected Water Demands Including Project and Supplies in 2020 (AFY)

	Average/Normal Water Year	Single Dry Water Year	Multiple Dry Water Years		
			Year 1	Year 2	Year 3
Total Demand [1]	6,704	6,036	6,036	6,527	6,671
Supply [2]					
Main San Gabriel Basin Supply [3]	6,704	6,036	6,036	6,527	6,671
MWD USG-7 Supply	0	0	0	0	0
Total Supply	6,704	6,036	6,036	6,527	6,671
Surplus/Deficiency	0	0	0	0	0

Notes:

[1] Total Demand includes the Project water demand of approximately 69 AFY for an Average/Normal Water Year, as shown on Table 2. Single and multiple dry year demand are based on the proportions of average water demand to single dry year and multiple dry year water demands, identified in Table 7-1 of City's 2015 UWMP.

[2] Based on proportion of 2015 supplies from City's 2015 UWMP

[3] The reliable current total pumping capacities of City's groundwater wells is estimated to be about 9,700 AFY (60% well operating factor)

Table 14. City's Projected Water Demands Including Project and Supplies in 2025 (AFY)

	Average/Normal Water Year	Single Dry Water Year	Multiple Dry Water Years		
			Year 1	Year 2	Year 3
Total Demand [1]	6,803	6,125	6,125	6,624	6,770
Supply [2]					
Main San Gabriel Basin Supply [3]	6,803	6,125	6,125	6,624	6,770
MWD USG-7 Supply	0	0	0	0	0
Total Supply	6,803	6,125	6,125	6,624	6,770
Surplus/Deficiency	0	0	0	0	0

Notes:

[1] Total Demand includes the Project water demand of approximately 69 AFY for an Average/Normal Water Year, as shown on Table 2. Single and multiple dry year demand are based on the proportions of average water demand to single dry year and multiple dry year water demands, identified in Table 7-1 of City's 2015 UWMP.

[2] Based on proportion of 2015 supplies from City's 2015 UWMP

[3] The reliable current total pumping capacities of City's groundwater wells is estimated to be about 9,700 AFY (60% well operating factor)

Table 15. City's Projected Water Demands Including Project and Supplies in 2030 (AFY)

	Average/Normal Water Year	Single Dry Water Year	Multiple Dry Water Years		
			Year 1	Year 2	Year 3
Total Demand [1]	6,902	6,214	6,214	6,720	6,868
Supply [2]					
Main San Gabriel Basin Supply [3]	6,902	6,214	6,214	6,720	6,868
MWD USG-7 Supply	0	0	0	0	0
Total Supply	6,902	6,214	6,214	6,720	6,868
Surplus/Deficiency	0	0	0	0	0

Notes:

[1] Total Demand includes the Project water demand of approximately 69 AFY for an Average/Normal Water Year, as shown on Table 2. Single and multiple dry year demand are based on the proportions of average water demand to single dry year and multiple dry year water demands, identified in Table 7-1 of City's 2015 UWMP.

[2] Based on proportion of 2015 supplies from City's 2015 UWMP

[3] The reliable current total pumping capacities of City's groundwater wells is estimated to be about 9,700 AFY (60% well operating factor)

Table 16. City's Projected Water Demands Including Project and Supplies in 2035 (AFY)

	Average/Normal Water Year	Single Dry Water Year	Multiple Dry Water Years		
			Year 1	Year 2	Year 3
Total Demand [1]	7,004	6,306	6,306	6,819	6,970
Supply [2]					
Main San Gabriel Basin Supply [3]	7,004	6,306	6,306	6,819	6,970
MWD USG-7 Supply	0	0	0	0	0
Total Supply	7,004	6,306	6,306	6,819	6,970
Surplus/Deficiency	0	0	0	0	0

Notes:

[1] Total Demand includes the Project water demand of approximately 69 AFY for an Average/Normal Water Year, as shown on Table 2. Single and multiple dry year demand are based on the proportions of average water demand to single dry year and multiple dry year water demands, identified in Table 7-1 of City's 2015 UWMP.

[2] Based on proportion of 2015 supplies from City's 2015 UWMP

[3] The reliable current total pumping capacities of City's groundwater wells is estimated to be about 9,700 AFY (60% well operating factor)

Table 17. City's Projected Water Demands Including Project and Supplies in 2040 (AFY)

	Average/Normal Water Year	Single Dry Water Year	Multiple Dry Water Years		
			Year 1	Year 2	Year 3
Total Demand [1]	7,106	6,398	6,398	6,919	7,071
Supply [2]					
Main San Gabriel Basin Supply [3]	7,106	6,398	6,398	6,919	7,071
MWD USG-7 Supply	0	0	0	0	0
Total Supply	7,106	6,398	6,398	6,919	7,071
Surplus/Deficiency	0	0	0	0	0

Notes:

[1] Total Demand includes the Project water demand of approximately 69 AFY for an Average/Normal Water Year, as shown on Table 2. Single and multiple dry year demand are based on the proportions of average water demand to single dry year and multiple dry year water demands, identified in Table 7-1 of City's 2015 UWMP.

[2] Based on proportion of 2015 supplies from City's 2015 UWMP

[3] The reliable current total pumping capacities of City's groundwater wells is estimated to be about 9,700 AFY (60% well operating factor)

In addition to the City's groundwater extraction from the Main San Gabriel Basin, the City has the ability to obtain supplemental water supplies from its Main San Gabriel Basin cyclic storage account. Under the Main San Gabriel Basin, cyclic storage provisions allow producers, including the City, to store supplemental water within the Main San Gabriel Basin for the purpose of supplying Replacement Water.

As presented in Section 4 and Appendix B, active and effective groundwater management enables water producers in the Main San Gabriel Basin to historically meet water demands, including during single and multiple dry years. Based on the demonstrated reliability of water resources available to the City, including the City's access to the Main San Gabriel Basin water supplies including imported Replacement Water and the City's access to treated imported water from MWD, the City has sufficient and reliable water supplies to meet its future demands, with the Project from 2020 to 2040, including during single and multiple dry years.

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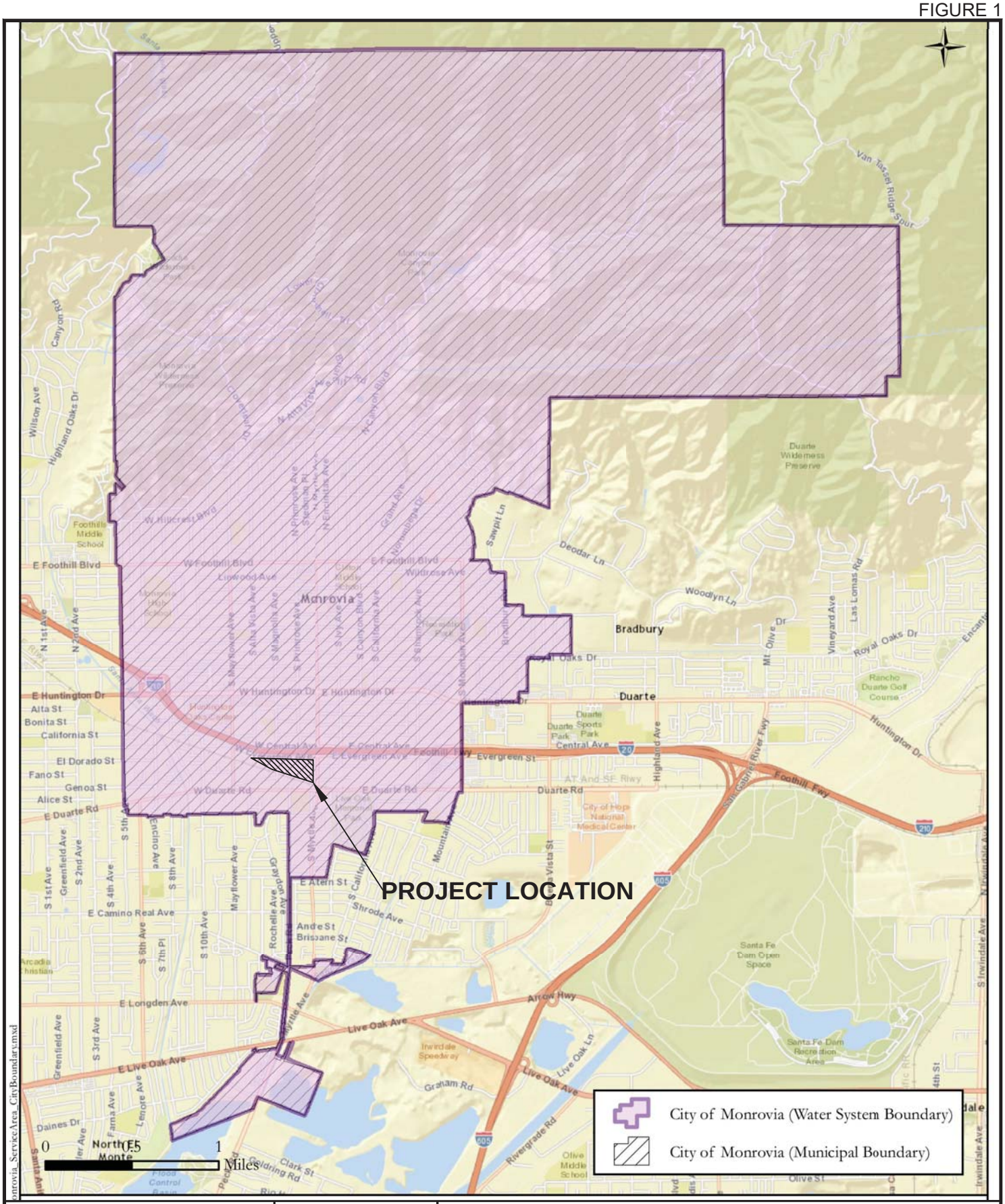
FIGURE 1



STETSON ENGINEERS INC.
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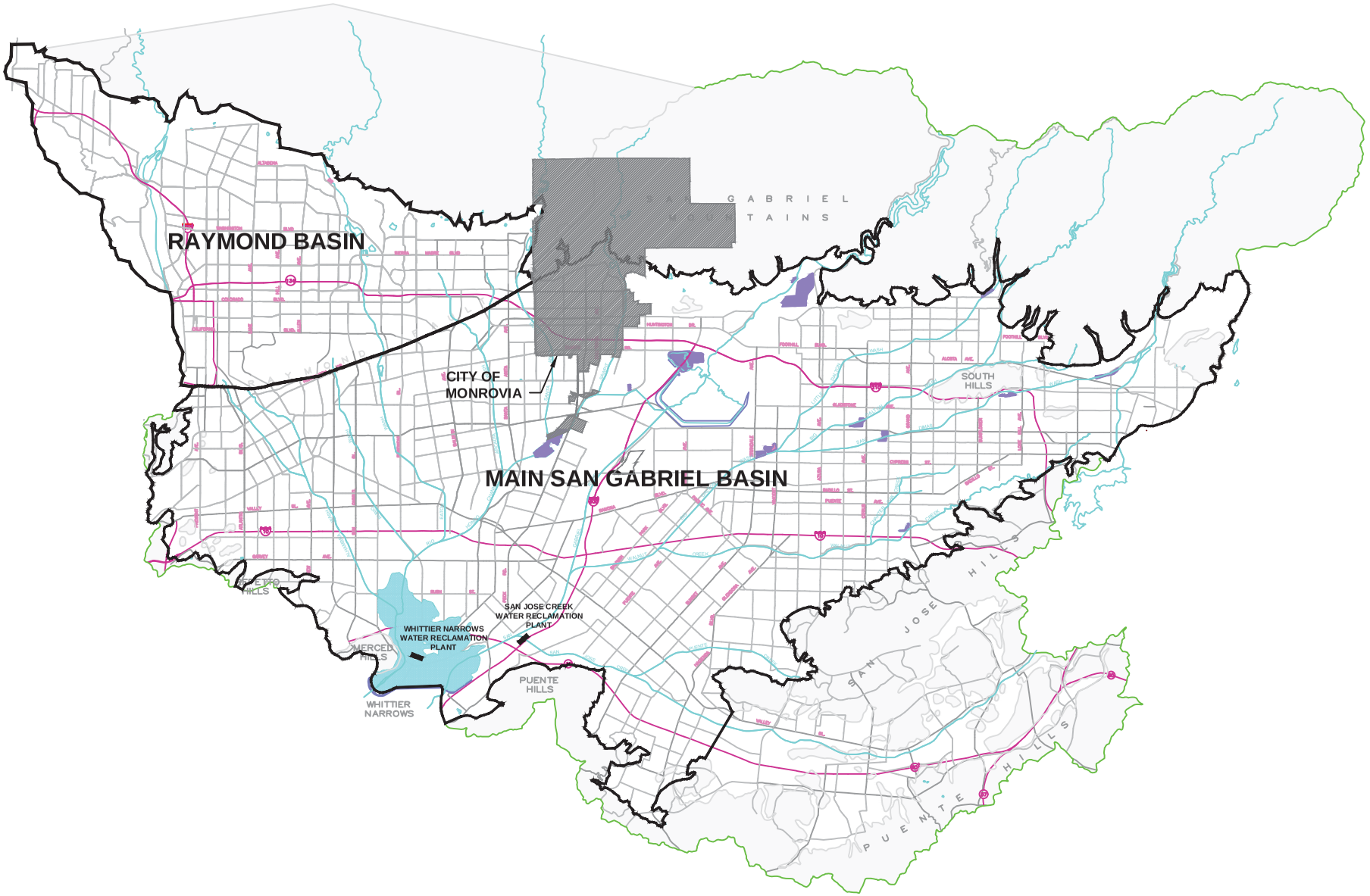
San Rafael California 94901

2651 W Guadalupe Rd., Suite A209
Mesa Arizona 85202

CITY OF MONROVIA

PROJECT LOCATION

J:\Jobs\2630\12 (WSA)\Figures\FIGURE 1.dwg
NONE



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N

N.T.S.

CITY OF MONROVIA

MAIN BASIN LOCATION MAP

FIGURE 2

J:\Jobs\2630\12 (WSA)\Figures\FIGURE 2.dwg
NONE

APPENDIX A

Main San Gabriel Basin - Judgment

SUPERIOR COURT OF THE STATE OF CALIFORNIA

FOR THE COUNTY OF LOS ANGELES

UPPER SAN GABRIEL VALLEY
MUNICIPAL WATER DISTRICT

Plaintiff,

vs.

CITY OF ALHAMBRA, et al,

Defendants.

No. 924128

AMENDED JUDGMENT
(and Exhibits Thereto).

Honorable Florence T. Pickard
Assigned Judge Presiding

Original Judgment
Signed and Filed: December 29, 1972;
Entered: January 4, 1973
Book 6741, Page 197

JUDGMENT AS AMENDED AUGUST 24, 1989

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SUPERIOR COURT OF CALIFORNIA, COUNTY OF LOS ANGELES

UPPER SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT, Plaintiff, vs. CITY OF ALHAMBRA, et al., Defendants.	No. 924128 AMENDED JUDGMENT (And Exhibits Thereto)

HONORABLE FLORENCE T. PICKARD

Assigned Judge Presiding

DEPARTMENT 38

August 24, 1989

(With Amendments Through February 1992)

AMENDED JUDGMENT
TABLE OF CONTENTS

And
Amended Judgment Sections
Identified With Prior Judgment
Section Numbers

EXHIBITS

Exhibits Continued

(d) Diverter -- Any party who Diverts.

(e) Elevation -- Feet above mean sea level.

(f) Fiscal Year -- A period July 1 through June 30, following.

(g) Ground Water -- Water beneath the surface of the ground and within the zone of saturation.

(h) Ground Water Basin -- An interconnected permeable geologic formation capable of storing a substantial Ground Water supply.

(i) Integrated Producer -- Any party that is both a Pumper and a Diverter, and has elected to have its rights adjudicated under the optional formula provided in Section 18 of this Judgment.

(j) In-Lieu Water Cost -- The differential between a particular Producer's cost of Watermaster directed produced, treated, blended, substituted, or Supplemental Water delivered or substituted to, for, or taken by, such Producer in-lieu of his cost of otherwise normally Producing a like amount of Ground Water. (Amended 1/29/91)

(k) Key Well -- Baldwin Park Key Well, being elsewhere designated as State Well No. 1S/10W-7R2, or Los Angeles County Flood Control District Well No. 3030-F. Said well has a ground surface Elevation of 386.7.

(l) Long Beach Case -- Los Angeles Superior Court Civil Action No. 722647, entitled, "Long Beach, et al., v. San Gabriel Valley Water Company, et al."

(m) Main San Gabriel Basin or Basin -- The Ground Water Basin underlying the area shown as such on Exhibit "A".

(1) Production in excess of a Pumper's Share of Operating Safe Yield; (2) The consumptive use portion resulting from the exercise of an Overlying Right; and (3) Production in excess of a Diverter's right to Divert for Direct Use.

(dd) Responsible Agency -- (Prior Judgment Section 4 (cc)) The municipal water district which is the normal and appropriate source from whom Watermaster shall purchase Supplemental Water for replacement purposes under the Physical Solution, being one of the following:

(1) Upper District -- Upper San Gabriel Valley Municipal Water District, a member public agency of The Metropolitan Water District of Southern California (MWD).

(2) San Gabriel District -- San Gabriel Valley Municipal Water District, which has a direct contract with the State of California for State Project Water.

(3) Three Valleys District -- Three Valleys Municipal Water District, formerly, "Pomona Valley Municipal Water District", a member public agency of MWD.

(ee) Stored Water -- (Prior Judgment Section 4 (dd)) Supplemental Water stored in the Basin pursuant to a contract with Watermaster as authorized by Section 34(m).

(ff) Supplemental Water -- (Prior Judgment Section 4 (ee)) Nontributary water imported through a Responsible Agency and reclaimed water. (Amended 4/2/91)

(gg) Transporting Parties -- (Prior Judgment Section 4 (ff)) Any party presently transporting water (i.e., during the 12 months immediately preceding the making of the findings

herein) from the Relevant Watershed or Basin to an area outside thereof, and any party presently or hereafter having an interest in lands or having a service area outside the Basin or Relevant Watershed contiguous to lands in which it has an interest or a service area within the Basin or Relevant Watershed. Division by a road, highway, or easement shall not interrupt contiguity. Said term shall also include the City of Sierra Madre, or any party supplying water thereto, so long as the corporate limits of said City are included within one of the Responsible Agencies and if said City, in order to supply water to its corporate area from the Basin, becomes a party to this action bound by this Judgment.

(hh) Water Level -- (Prior Judgment Section 4 (gg)) The measured Elevation of water in the Key Well, corrected for any temporary effects of mounding caused by replenishment or local depressions caused by Pumping.

(ii) Year -- (Prior Judgment Section 4 (hh)) A calendar year, unless the context clearly indicates a contrary meaning.

(jj) Reclaimed Water -- Water which, as a result of treatment of waste, is suitable for a direct beneficial use or a controlled use that would not otherwise occur. (Amended 4/2/91)

11. Exhibits. (Prior Judgment Section 5) The following exhibits are attached to this Judgment and incorporated herein by this reference:

Exhibit "A" -- Map entitled "San Gabriel River Watershed Tributary to Whittier Narrows", showing the boundaries and relevant geologic and hydrologic features in

the portion of the watershed of the San Gabriel River lying upstream from Whittier Narrows.

Exhibit "B" -- Boundaries of Relevant Watershed.

Exhibit "C" -- Table Showing Base Annual Diversion

operating condition, at the cost of each party, such necessary measuring devices or meters as may be appropriate; and to inspect and test any such measuring device as may be necessary.

(e) Assessments. To levy and collect all Assessments specified in the Physical Solution.

(f) Investment of Funds. To hold and invest any and all funds which Watermaster may possess in investments authorized from time to time for public agencies in the State of California.

(g) Borrowing. To borrow in anticipation of receipt of Assessment proceeds an amount not to exceed the annual amount of Assessments levied but uncollected.

(h) Purchase of and Recharge with Supplemental Water. To purchase Supplemental Water and to introduce the same into the Basin, including a maximum of 30,000 acre-feet per year of Reclaimed Water, for replacement, Replacement Water, and cyclic storage purposes in the Basin, subject to the affirmative vote of six (6) members of Watermaster provided, the California Department of Health Services and the Los Angeles Regional Water Quality Control Board have approved such Reclaimed Water for said uses, Watermaster has given prior notice to all parties of its intention to use said Reclaimed Water for such purposes, held noticed hearings thereon, and approves such uses. Reclaimed Water used by Watermaster as Supplemental Water for said purposes shall not be a violation of Sections 3 (b) or 3 (c) of Exhibit "H" hereto. (Amended 4/2/91)

(i) Contracts. To enter into contracts for the performance of any administrative powers herein granted, subject to approval of the Court.

(j) Cooperation With Existing Agencies. To act jointly or cooperate with agencies of the United States and the State of California or any political subdivision, municipality or district to the end that the purposes of the Physical Solution may be fully and economically carried out. Specifically, in the event Upper District has facilities available and adequate to accomplish any of the

order that Watermaster may be free to utilize both existing and new and developing technological, social and economic concepts for the fullest benefit of all those dependent upon the Basin, it is essential that the Physical Solution hereunder provide for maximum flexibility and adaptability. To that end, the Court has retained continuing jurisdiction to supplement the broad discretion herein granted to the Watermaster.

40. Watermaster Control. (Prior Judgment Section 32) In order to develop an adequate and effective program of Basin management, it is essential that Watermaster have broad discretion in the making of Basin management decisions within the ambit hereinafter set forth. Withdrawal and replenishment of supplies of the Basin and Relevant Watershed and the utilization of the water resources thereof, and of available Ground Water storage capacity, must be subject to procedures established by Watermaster in implementation of the provisions of this Judgment. Both the quantity and quality of said water resource are thereby preserved and its beneficial utilization maximized.

(a) Watermaster shall develop an adequate and effective program of Basin management. The maintenance, improvement, and control of the water quality and quantity of the Basin, withdrawal and replenishment of supplies of the Basin and Relevant Watershed, and the utilization of the water resources thereof, must be subject to procedures established by Watermaster in implementation of the Physical Solution provisions of this Judgment. All Watermaster programs and procedures shall be adopted only after a duly noticed public

hearing pursuant to Sections 37 and 40 of the Amended Judgment herein.
(Amended 1/29/91)

(b) Watermaster shall have the power to control pumping within the Basin by water Producers therein for Basin cleanup and water quality control so that specific well production can be directed as to a lesser amount, to total cessation, as to an increased amount, and even to require pumping in a new location in the Basin. Watermaster's right to regulate pumping activities of Producers shall be subordinate to any conflicting Basin cleanup plan established by the EPA or other public governmental agency with responsibility for ground water management or clean up, whether existing at the time of this Judgment or subsequent hereto. (Amended 2/24/92)

(c) Watermaster may act individually or participate with others to carry on technical and other necessary investigations of all kinds and collect data necessary to carry out the herein stated purposes. It may engage in contractual relations with the EPA or other agencies in furtherance of the clean up of the Basin and enter into contracts with agencies of the United States, the State of California, or any political subdivision, municipality, or district thereof, to the extent allowed under the applicable federal or state statutes. Any cooperative agreement between the Watermaster and EPA shall require the approval of the appropriate Agency(s) of the State of California. (Amended 1/21/91)

(d) For the regulation and control of pumping activity in the Basin, Watermaster shall adopt Rules and Regulations and

programs to promote, manage and accomplish clean up of the Basin and its waters, including, but not limited to, measures to confine, move, and remove contaminants and pollutants. Such Rules and Regulations and programs shall be adopted only after a duly Noticed Public Hearing by Watermaster and shall be subject to Court review pursuant to Section 37 of the Amended Judgment herein. (Amended 1/21/91)

e) Watermaster shall determine whether funds from local, regional, state or federal agencies are available for regulating pumping and the various costs associated with, or arising from such activities. If no public funds are available from local, regional, state, or federal agencies, the costs shall be obtained and paid by way of an In-Lieu Assessment by Watermaster pursuant to Section 10 (j) of the Amended Judgment herein. Provided such In-Lieu Assessments become necessary, the costs shall be borne by all Basin Producers. (Amended 1/21/91)

(f) Watermaster is a Court empowered entity with limited powers, created pursuant to the Court's Physical Solution Jurisdiction under Article X, Section 2 of the California Constitution. None of the powers granted herein to Watermaster shall be construed as designating Watermaster a political subdivision of the State of California or authorizing Watermaster to act as "lead agency" to administer the federal Superfund for clean up of the Basin. (Amended 1/21/91)

41. General Pattern of Contemplated Operation. (Prior Judgment Section 33) In general outline (subject to the specific provisions hereafter and to Watermaster Operating Criteria set forth in Exhibit "H"), Watermaster will determine

annually the Operating Safe Yield of the Basin and will notify each Pumper of his share thereof, stated in acre feet per Fiscal Year. Thereafter, no party may Produce in any Fiscal Year an amount in excess of the sum of his Diversion Right, if any, plus his Pumper's Share of such Operating Safe Yield, or his

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SUPERIOR COURT OF CALIFORNIA, COUNTY OF LOS ANGELES

UPPER SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT, Plaintiff, vs. CITY OF ALHAMBRA, et al., Defendants.	No. 924128 AMENDED JUDGMENT (And Exhibits Thereto)

HONORABLE FLORENCE T. PICKARD

Assigned Judge Presiding

DEPARTMENT 38

August 24, 1989

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SUPERIOR COURT OF CALIFORNIA, COUNTY OF LOS ANGELES

UPPER SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT, Plaintiff, vs. CITY OF ALHAMBRA, et al., Defendants.	No. 924128 AMENDED JUDGMENT Hearing: August 24, 1989 Department 38, 9:00 A.M.

The Petition of the MAIN SAN GABRIEL BASIN WATERMASTER for this AMENDED JUDGMENT herein, came on regularly for hearing in this Court before the HONORABLE FLORENCE T. PICKARD, ASSIGNED JUDGE PRESIDING, on August 24, 1989; Ralph B. Helm appeared as attorney for Watermaster - Petitioner; and good cause appearing, the following ORDER and AMENDED JUDGMENT are, hereby, made:

I. INTRODUCTION

1. Pleadings, Parties, and Jurisdiction. The complaint herein was filed on January 2, 1968, seeking an adjudication of water rights. By amendment of said complaint and dismissals of certain parties, said adjudication was limited to the Main San Gabriel Basin and its Relevant Watershed. Substantially all

defendants and the cross-defendant have appeared herein, certain defaults have been entered, and other defendants dismissed. By the pleadings herein and by Order of this Court, the issues have been made those of a full inter se adjudication of water rights as between each and all of the parties. This Court has jurisdiction of the subject matter of this action and of the parties herein.

2. Stipulation for Entry of Judgment. A substantial majority of the parties, by number and by quantity of rights herein Adjudicated, Stipulated for entry of a Judgment in substantially the form of the original Judgment herein.

3. Lis Pendens. (New) A Lis Pendens was recorded August 20, 1970, as Document 2650, in Official Records of Los Angeles County, California, in Book M 3554, Page 866.

4. Findings and Conclusions. (Prior Judgment Section 3) Trial was had before the Court, sitting without a jury, John Shea, Judge Presiding, commencing on October 30, 1972, and Findings of Fact and Conclusions of Law have been entered herein.

5. Judgment. (New) Judgment (and Exhibits Thereto), Findings of Fact and Conclusions of Law (and Exhibits thereto), Order Appointing Watermaster, and Initial Watermaster Order were signed and filed December 29, 1972, and Judgment was entered January 4, 1973, in Book 6791, Page 197.

6. Intervention After Judgment. (New) Certain defendants have, pursuant to the Judgment herein and the Court's continuing jurisdiction, intervened and appeared herein after entry of Judgment.

7. Amendments to Judgment. (New) The original Judgment herein was previously amended on March 29, 1979, by: (1) adding definition (r [1]) thereto, (2) amending definition (bb) therein, (3) adding Exhibit "K" thereto, (4) adding Sections 14.5 and 16.5 thereto, and (5) amending Sections 37(b), 37(c), 37(d), and Section 47 therein; it was again amended on December 21, 1979, by amending Section 38(c) thereof; again amended on February 21, 1980, by amending Section 24 thereof; again amended on September 12, 1980, by amending Sections 35(a), 37(a), and 38(a); again amended on December 22, 1987, by adding Section 37(e) thereto; and last amended on July 22, 1988 by amending Section 37(e) thereof and Ordering an Amended Judgment herein.

8. Transfers. (New) Since the entry of Judgment herein there have been numerous transfers of Adjudicated water rights. To the date hereof, said transfers are reflected in Exhibits "C", "D", and "E".

9. Producers and Their Designees. (New) The current status of Producers and their Designees is shown on Exhibit "L".

10. Definitions. (Prior Judgment Section 4) As used in this Judgment, the following terms shall have the meanings herein set forth:

(a) Base Annual Diversion Right -- The average annual quantity of water which a Diverter is herein found to have the right to Divert for Direct Use.

(b) Direct Use --Beneficial use of water other than for spreading or Ground Water recharge.

(c) Divert or Diverting -- To take waters of any surface stream within the Relevant Watershed.

(d) Diverter -- Any party who Diverts.

(e) Elevation -- Feet above mean sea level.

(f) Fiscal Year -- A period July 1 through June 30, following.

(g) Ground Water -- Water beneath the surface of the ground and within the zone of saturation.

(h) Ground Water Basin -- An interconnected permeable geologic formation capable of storing a substantial Ground Water supply.

(i) Integrated Producer -- Any party that is both a Pumper and a Diverter, and has elected to have its rights adjudicated under the optional formula provided in Section 18 of this Judgment.

(j) In-Lieu Water Cost -- The differential between a Producer's non-capital cost of direct delivery of Supplemental Water and the cost of Production of Ground Water (including depreciation on Production facilities) to a particular Producer who has been required by Watermaster to take direct delivery of Supplemental Water in lieu of Ground Water.

(k) Key Well -- Baldwin Park Key Well, being elsewhere designated as State Well No. 1S/10W-7R2, or Los Angeles County Flood Control District Well No. 3030-F. Said well has a ground surface Elevation of 386.7.

(l) Long Beach Case -- Los Angeles Superior Court Civil Action No. 722647, entitled, "Long Beach, et al., v. San Gabriel Valley Water Company, et al."

(m) Main San Gabriel Basin or Basin -- The Ground Water Basin underlying the area shown as such on Exhibit "A".

(n) Make-up Obligation -- The total cost of meeting the obligation of the Basin to the area at or below Whittier Narrows, pursuant to the Judgment in the Long Beach Case.

(o) Minimal Producer -- Any party whose Production in any Fiscal Year does not exceed five (5) acre feet.

(p) Natural Safe Yield -- The quantity of natural water supply which can be extracted annually from the Basin under conditions of long term average annual supply, net of the requirement to meet downstream rights as determined in the Long Beach Case (exclusive of Pumped export), and under cultural conditions as of a particular year.

(q) Operating Safe Yield -- The quantity of water which the Watermaster determines hereunder may be Pumped from the Basin in a particular Fiscal Year, free of the Replacement Water Assessment under the Physical Solution herein.

(r) Overdraft -- A condition wherein the total annual Production from the Basin exceeds the Natural Safe Yield thereof.

(s) Overlying Rights -- (Prior Judgment Section 4 (r) [1]) The right to Produce water from the Basin for use on Overlying Lands, which rights are exercisable only on specifically defined Overlying Lands and which cannot be separately conveyed or transferred apart therefrom.

(t) Physical Solution -- (Prior Judgment Section 4 (s)) The Court decreed method of managing the waters of the Basin so as to achieve the maximum utilization of the Basin and its water supply, consistent with the rights herein declared.

(u) Prescriptive Pumping Right -- (Prior Judgment

Section 4 (t)) The highest continuous extractions of water by a Pumper from the Basin for beneficial use in any five (5) consecutive years after commencement of Overdraft and prior to filing of this action, as to which there has been no cessation of use by that Pumper during any subsequent period of five (5) consecutive years, prior to the said filing of this action.

(v) Produce or Producing -- (Prior Judgment Section 4 (u)) To Pump or Divert water.

(w) Producer -- (Prior Judgment Section 4 (v)) A party who Produces water.

(x) Production -- (Prior Judgment Section 4 (w)) The annual quantity of water Produced, stated in acre feet.

(y) Pump or Pumping -- (Prior Judgment Section 4 (x)) To extract Ground Water from the Basin by Pumping or any other method.

(z) Pumper -- (Prior Judgment Section 4 (y)) Any party who Pumps water.

(aa) Pumper's Share -- (Prior Judgment Section 4 (z)) A Pumper's right to a percentage of the entire Natural Safe Yield, Operating Safe Yield and appurtenant Ground Water storage.

(bb) Relevant Watershed -- (Prior Judgment Section 4(aa)) That portion of the San Gabriel River watershed tributary to Whittier Narrows which is shown as such on Exhibit "A", and the exterior boundaries of which are described in Exhibit "B".

(cc) Replacement Water -- (Prior Judgment Section 4 (bb)) Water purchased by Watermaster to replace:

(1) Production in excess of a Pumper's Share of Operating Safe Yield; (2) The consumptive use portion resulting from the exercise of an Overlying Right; and (3) Production in excess of a Diverter's right to Divert for Direct Use.

(dd) Responsible Agency -- (Prior Judgment Section 4 (cc)) The municipal water district which is the normal and appropriate source from whom Watermaster shall purchase Supplemental Water for replacement purposes under the Physical Solution, being one of the following:

(1) Upper District -- Upper San Gabriel Valley Municipal Water District, a member public agency of The Metropolitan Water District of Southern California (MWD).

(2) San Gabriel District -- San Gabriel Valley Municipal Water District, which has a direct contract with the State of California for State Project Water.

(3) Three Valleys District -- Three Valleys Municipal Water District, formerly, "Pomona Valley Municipal Water District", a member public agency of MWD.

(ee) Stored Water -- (Prior Judgment Section 4 (dd)) Supplemental Water stored in the Basin pursuant to a contract with Watermaster as authorized by Section 34(m).

(ff) Supplemental Water -- (Prior Judgment Section 4 (ee)) Nontributary water imported through a Responsible Agency.

(gg) Transporting Parties -- (Prior Judgment Section 4 (ff)) Any party presently transporting water (i.e., during the 12 months immediately preceding the making of the findings herein) from the Relevant Watershed or Basin to an area outside

thereof, and any party presently or hereafter having an interest in lands or having a service area outside the Basin or Relevant Watershed contiguous to lands in which it has an interest or a service area within the Basin or Relevant Watershed. Division by a road, highway, or easement shall not interrupt contiguity. Said term shall also include the City of Sierra Madre, or any party supplying water thereto, so long as the corporate limits of said City are included within one of the Responsible Agencies and if said City, in order to supply water to its corporate area from the Basin, becomes a party to this action bound by this Judgment.

(hh) Water Level -- (Prior Judgment Section 4 (gg)) The measured Elevation of water in the Key Well, corrected for any temporary effects of mounding caused by replenishment or local depressions caused by Pumping.

(ii) Year -- (Prior Judgment Section 4 (hh)) A calendar year, unless the context clearly indicates a contrary meaning.

11. Exhibits. (Prior Judgment Section 5) The following exhibits are attached to this Judgment and incorporated herein by this reference:

Exhibit "A" -- Map entitled "San Gabriel River Watershed Tributary to Whittier Narrows", showing the boundaries and relevant geologic and hydrologic features in the portion of the watershed of the San Gabriel River lying upstream from Whittier Narrows.

Exhibit "B" -- Boundaries of Relevant Watershed.

Exhibit "C" -- Table Showing Base Annual Diversion

Rights of Certain Diverters.

Exhibit "D" -- Table Showing Prescriptive Pumping Rights and Pumper's Share of Each Pumper.

Exhibit "E" -- Table Showing Production Rights of Each Integrated Producer.

Exhibit "F" -- Table Showing Special Category Rights.

Exhibit "G" -- Table Showing Non-consumptive Users.

Exhibit "H" -- Watermaster Operating Criteria.

Exhibit "J" -- Puente Narrows Agreement.

Exhibit "K" -- Overlying Rights, Nature of Overlying Right, Description of Overlying Lands to which Overlying Rights are Appurtenant, Producers Entitled to Exercise Overlying Rights and their Respective Consumptive Use Portions, and Map of Overlying Lands.

Exhibit "L" -- (New) List of Producers And Their Designees, as of June 1988.

Exhibit "M" -- (New) Watermaster Members, Officers and Staff, Including Calendar Year 1989.

II. DECREE

NOW, THEREFORE, IT IS HEREBY DECLARED, ORDERED, ADJUDGED AND DECREED:

A. DECLARATION OF HYDROLOGIC CONDITIONS

12. Basin as Common Source of Supply. (Prior Judgment Section 6) The area shown on Exhibit "A" as Main San Gabriel Basin overlies a Ground Water basin. The Relevant Watershed is the watershed area within which rights are herein adjudicated. The waters of the Basin and Relevant Watershed constitute a common source of natural water supply to the parties herein.

13. Determination of Natural Safe Yield. (Prior Judgment Section 7) The Natural Safe Yield of the Main San Gabriel Basin is found and declared to be one hundred fifty-two thousand seven-hundred (152,700) acre feet under Calendar Year 1967 cultural conditions.

14. Existence of Overdraft. (Prior Judgment Section 8) In each and every Calendar Year commencing with 1953, the Basin has been and is in Overdraft.

B. DECLARATION OF RIGHTS

15. Prescription. (Prior Judgment Section 9) The use of water by each and all parties and their predecessors in interest has been open, notorious, hostile, adverse, under claim of right, and with notice of said overdraft continuously from January 1, 1953 to January 4, 1973. The rights of each party herein declared are prescriptive in nature. The following aggregate consequences of said prescription within the Basin and Relevant Watershed are hereby declared:

(a) Prior Prescription. Diversions within the Relevant Watershed have created rights for direct consumptive use within the Basin, as declared and determined in Sections 16 and 18 hereof, which are of equal priority inter se, but which are prior and paramount to Pumping Rights in the Basin.

(b) Mutual Prescription. The aggregate Prescriptive Pumping Rights of the parties who are Pumpers now exceed, and for many years prior to filing of this action, have exceeded, the Natural Safe Yield of the Basin. By reason of said condition, all rights of said Pumpers are declared

to be mutually prescriptive and of equal priority, inter se.

(c) Common Ownership of Safe Yield and Incidents Thereto. By reason of said Overdraft and mutual Prescription, the entire Natural Safe Yield of the Basin, the Operating Safe Yield thereof and the appurtenant rights to Ground Water storage capacity of the Basin are owned by Puppers in undivided Puppers' Shares as hereinafter individually declared, subject to the control of Watermaster, pursuant to the Physical Solution herein decreed. Nothing herein shall be deemed in derogation of the rights to spread water pursuant to rights set forth in Exhibit "G".

16. Surface Rights. (Prior Judgment Section 10) Certain of the aforesaid prior and paramount prescriptive water rights of Diverters to Divert for Direct Use stream flow within the Relevant Watershed are hereby declared and found in terms of Base Annual Diversion Right as set forth in Exhibit "C". Each Diverter shown on Exhibit "C" shall be entitled to Divert for Direct Use up to two hundred percent (200%) of said Base Annual Diversion Right in any one (1) Fiscal Year; provided that the aggregate quantities of water Diverted in any consecutive ten (10) Fiscal Year period shall not exceed ten (10) times such Diverter's Base Annual Diversion Right.

17. Ground Water Rights. (Prior Judgment Section 11) The Prescriptive Pumping Right of each Pumper, who is not an Integrated Producer, and his Pumper's Share are declared as set forth in Exhibit "D".

18. Optional Integrated Production Rights. (Prior Judgment Section 12) Those parties listed on Exhibit "E" have elected to be treated as Integrated Producers. Integrated Production Rights have two (2) historical components:

(1) a fixed component based upon historic Diversions for Direct Use; and

(2) a mutually prescriptive Pumper's Share component based upon Pumping during the period 1953 through 1967.

Assessment and other Watermaster regulation of the rights of such parties shall relate to and be based upon each such component. So far as future exercise of such rights is concerned, however, the gross quantity of the aggregate right in any Fiscal Year may be exercised, in the sole discretion of such party, by either Diversion or Pumping or any combination or apportionment thereof; provided, that for Assessment purposes the first water Produced in any Fiscal Year (other than "carry-over", under Section 49 hereof) shall be deemed an exercise of the Diversion component, and any Production over said quantity shall be deemed Pumped water, regardless of the actual method of Production.

19. Special Category Rights. (Prior Judgment Section 13) The parties listed on Exhibit "F" have water rights in the Relevant Watershed which are not ordinary Production rights. The nature of each such right is as described in Exhibit "F".

20. Non-consumptive Practices. (Prior Judgment Section 14) Certain Producers have engaged in Water Diversion and spreading practices which have caused such Diversions to have a

non-consumptive or beneficial impact upon the aggregate water supply available in the Basin. Said parties, and a statement of the nature of their rights, uses and practices, are set forth in Exhibit "G". The Physical Solution decreed herein, and particularly its provisions for Assessments, shall not apply to such non-consumptive uses. Watermaster may require reports on the operations of said parties.

21. Overlying Rights. (Prior Judgment Section 14.5) Producers listed in Exhibit "K" hereto were not parties herein at the time of the original entry of Judgment herein. They have exercised in good faith Overlying Rights to Produce water from the Basin during the periods subsequent to the entry of Judgment herein and have by self-help initiated or maintained appurtenant Overlying Rights. Such rights are exercisable without quantitative limit only on specifically described Overlying Land and cannot be separately conveyed or transferred apart therefrom. As to such rights and their exercise, the owners thereof shall become parties to this action and be subject to Watermaster Replacement Water Assessments under Section 45 (b) hereof, sufficient to purchase Replenishment Water to offset the net consumptive use of such Production and practices. In addition, the gross amount of such Production for such overlying use shall be subject to Watermaster Administrative Assessments under Section 45 (a) hereof and the consumptive use portion of such Production for overlying use shall be subject to Watermaster's In-Lieu Water Cost Assessments under Section 45 (d) hereof. The Producers presently entitled to exercise Overlying Rights, a description of the Overlying Land to which

Overlying Rights are appurtenant, the nature of use and the consumptive use portion thereof are set forth in Exhibit "K" hereto. Watermaster may require reports and make inspections of the operations of said parties for purposes of verifying the uses set forth in said Exhibit "K", and, in the event of a material change, to redetermine the net amount of consumptive use by such parties as changed in the exercise of such Overlying Rights. Annually, during the first two (2) weeks of June in each Calendar Year, such Overlying Rights Producers shall submit to Watermaster a verified statement as to the nature of the then current uses of said Overlying Rights on said Overlying Lands for the next ensuing Fiscal Year, whereupon Watermaster shall either affirm the prior determination or redetermine the net amount of the consumptive use portion of the exercise of such Overlying Right by said Overlying Rights Producer.

C. INJUNCTION

22. Injunction Against Unauthorized Production. (Prior Judgment Section 15) Effective July 1, 1973, each and every party, its officers, agents, employees, successors and assigns, to whom rights to waters of the Basin or Relevant Watershed have been declared and decreed herein is ENJOINED AND RESTRAINED from Producing water for Direct Use from the Basin or the Relevant Watershed except pursuant to rights and Pumpers' Shares herein decreed or which may hereafter be acquired by transfer pursuant to Section 55, or under the provisions of the Physical Solution in this Judgment and the Court's continuing jurisdiction, provided that no party is enjoined from Producing up to five (5) acre feet per Fiscal Year.

23. Injunction re Non-consumptive Uses. (Prior Judgment Section 16) Each party listed in Exhibit "G", its officers, agents, employees, successors and assigns, is ENJOINED AND RESTRAINED from materially changing said non-consumptive method of use.

24. Injunction Re Change in Overlying Use Without Notice Thereof To Watermaster. (Prior Judgment Section 16.5) Each party listed in Exhibit "E", its officers, agents, employees, successors and assigns, is ENJOINED AND RESTRAINED from materially changing said overlying uses at any time without first notifying Watermaster of the intended change of use, in which event Watermaster shall promptly redetermine the consumptive use portion thereof to be effective after such change.

25. Injunction Against Unauthorized Recharge. (Prior Judgment Section 17) Each party, its officers, agents, employees, successors and assigns, is ENJOINED AND RESTRAINED from spreading, injecting or otherwise recharging water in the Basin except pursuant to: (a) an adjudicated non-consumptive use, or (b) consent and approval of or Cyclic Storage Agreement with Watermaster, or (c) subsequent order of this Court.

26. Injunction Against Transportation From Basin or Relevant Watershed. (Prior Judgment Section 18) Except upon further order of Court, all parties, other than Transporting Parties and MWD in its exercise of its Special Category Rights, to the extent authorized therein, are ENJOINED AND RESTRAINED from transporting water hereafter Produced from the Relevant Watershed or Basin outside the areas thereof. For purposes of

this Section, water supplied through a city water system which lies chiefly within the Basin shall be deemed entirely used within the Basin. Transporting Parties are entitled to continue to transport water to the extent that any Production of water by any such party does not violate the injunctive provisions contained in Section 22 hereof; provided that said water shall be used within the present service areas or corporate or other boundaries and additions thereto so long as such additions are contiguous to the then existing service area or corporate or other boundaries; except that a maximum of ten percent (10%) of use in any Fiscal Year may be outside said then existing service areas or corporate or other boundaries.

D. CONTINUING JURISDICTION

27. Jurisdiction Reserved. (Prior Judgment Section 19) Full jurisdiction, power and authority are retained by and reserved to the Court for purposes of enabling the Court upon application of any party or of the Watermaster, by motion and upon at least thirty (30) days notice thereof, and after hearing thereon, to make such further or supplemental orders or directions as may be necessary or appropriate for interim operation before the Physical Solution is fully operative, or for interpretation, enforcement or carrying out of this Judgment, and to modify, amend or amplify any of the provisions of this Judgment or to add to the provisions thereof consistent with the rights herein decreed. Provided, that nothing in this paragraph shall authorize:

(1) modification or amendment of the quantities specified in the declared rights of any party;

(2) modification or amendment of the manner of exercise of the Base Annual Diversion Right or Integrated Production Right of any party; or

(3) the imposition of an injunction prohibiting transportation outside the Relevant Watershed or Basin as against any Transporting Party transporting in accordance with the provisions of this Judgment or against MWD as to its Special Category Rights.

E. WATERMASTER

28. Watermaster to Administer Judgment. (Prior Judgment Section 20) A Watermaster comprised of nine (9) persons, to be nominated as hereinafter provided and appointed by the Court, shall administer and enforce the provisions of this Judgment and any subsequent instructions or orders of the Court thereunder.

29. Qualification, Nomination and Appointment. (Prior Judgment Section 21) The nine (9) member Watermaster shall be composed of six (6) Producer representatives and three (3) public representatives qualified, nominated and appointed as follows:

(a) Qualification. Any adult citizen of the State of California shall be eligible to serve on Watermaster; provided, however, that no officer, director, employee or agent of Upper District or San Gabriel District shall be qualified as a Producer member of Watermaster.

(b) Nomination of Producer Representatives. A meeting of all parties shall be held at the regular meeting of Watermaster in November of each year, at the offices of Watermaster. Nomination of the six (6) Producer

representatives shall be by cumulative voting, in person or by proxy, with each Producer entitled to one (1) vote for each one hundred (100) acre feet, or portion thereof, of Base Annual Diversion Right or Prescriptive Pumping Right or Integrated Production Right.

(c) Nomination of Public Representatives. On or before the regular meeting of Watermaster in November of each year, the three (3) public representatives shall be nominated by the boards of directors of Upper District (which shall select two [2]) and San Gabriel District (which shall select one [1]). Said nominees shall be members of the board of directors of said public districts.

(d) Appointment. All Watermaster nominations shall be promptly certified to the Court, which will in ordinary course confirm the same by an appropriate order appointing said Watermaster; provided, however, that the Court at all times reserves the right and power to refuse to appoint, or to remove, any member of Watermaster.

30. Term and Vacancies. (Prior Judgment Section 22) Each member of Watermaster shall serve for a one (1) year term commencing on January 1, following his appointment, or until his successor is appointed. In the event of a vacancy on Watermaster, a successor shall be nominated at a special meeting to be called by Watermaster within ninety (90) days (in the case of a Producer representative) or by action of the appropriate district board of directors (in the case of a public representative).

31. Quorum. (Prior Judgment Section 23) Five (5) members

of the Watermaster shall constitute a quorum for the transaction of affairs of the Watermaster. Action by the affirmative vote of five (5) members shall constitute action by Watermaster, except that the affirmative vote of six (6) members shall be required:

(a) to approve the purchase, spreading or injection of water for Ground Water recharge, or

(b) to enter in any Agreement pursuant to Section 34 (m) hereof.

32. Compensation. (Prior Judgment Section 24) Each Watermaster member shall receive compensation of One Hundred Dollars ($100.00) per day for each day's attendance at meetings of Watermaster or for each day's service rendered as a Watermaster member at the request of Watermaster, together with any expenses incurred in the performance of his duties required or authorized by Watermaster. No member of the Watermaster shall be employed by or compensated for professional services rendered by him to Watermaster, other than the compensation herein provided, and any authorized travel or related expense.

33. Organization. (Prior Judgment Section 25) At its first meeting in each year, Watermaster shall elect a chairman and a vice chairman from its membership. It shall also select a secretary, a treasurer and such assistant secretaries and assistant treasurers as may be appropriate, any of whom may, but need not be, members of Watermaster.

(a) Minutes. Minutes of all Watermaster meetings shall be kept which shall reflect all actions taken by Watermaster. Draft copies thereof shall be furnished to

any party who files a request therefor in writing with Watermaster. Said draft copies of minutes shall constitute notice of any Watermaster action therein reported; failure to request copies thereof shall constitute waiver of notice.

(b) Regular Meetings. Watermaster shall hold regular meetings at places and times to be specified in Watermaster's rules and regulations to be adopted by Watermaster. Notice of the scheduled or regular meetings of Watermaster and of any changes in the time or place thereof shall be mailed to all parties who shall have filed a request therefor in writing with Watermaster.

(c) Special Meetings. Special meetings of Watermaster may be called at any time by the chairman or vice chairman or by any three (3) members of Watermaster by written notice delivered personally or mailed to each member of Watermaster and to each party requesting notice, at least twenty-four (24) hours before the time of each such meeting in the case of personal delivery, and forty-eight (48) hours prior to such meeting in the case of mail. The calling notice shall specify the time and place of the special meeting and the business to be transacted at such meeting. No other business shall be considered at such meeting.

(d) Adjournments. Any meeting of Watermaster may be adjourned to a time and place specified in the order of adjournment. Less than a quorum may so adjourn from time to time. A copy of the order or notice of adjournment

shall be conspicuously posted on or near the door of the place where the meeting was held within twenty-four (24) hours after adoption of the order of adjournment.

34. Powers and Duties. (Prior Judgment Section 26) Subject to the continuing supervision and control of the Court, Watermaster shall have and may exercise the following express powers, and shall perform the following duties, together with any specific powers, authority and duties granted or imposed elsewhere in this Judgment or hereafter ordered or authorized by the Court in the exercise of its continuing jurisdiction.

(a) Rules and Regulations. To make and adopt any and all appropriate rules and regulations for conduct of Watermaster affairs. A copy of said rules and regulations and any amendments thereof shall be mailed to all parties.

(b) Acquisition of Facilities. To purchase, lease, acquire and hold all necessary property and equipment; provided, however, that Watermaster shall not acquire any interest in real property in excess of year-to-year tenancy for necessary quarters and facilities.

(c) Employment of Experts and Agents. To employ such administrative personnel, engineering, geologic, accounting, legal or other specialized services and consulting assistants as may be deemed appropriate in the carrying out of its powers and to require appropriate bonds from all officers and employees handling Watermaster funds.

(d) Measuring Devices, etc. To cause parties, pursuant to uniform rules, to install and maintain in good

operating condition, at the cost of each party, such necessary measuring devices or meters as may be appropriate; and to inspect and test any such measuring device as may be necessary.

(e) Assessments. To levy and collect all Assessments specified in the Physical Solution.

(f) Investment of Funds. To hold and invest any and all funds which Watermaster may possess in investments authorized from time to time for public agencies in the State of California.

(g) Borrowing. To borrow in anticipation of receipt of Assessment proceeds an amount not to exceed the annual amount of Assessments levied but uncollected.

(h) Purchase of and Recharge with Supplemental Water. To purchase Supplemental Water and to introduce the same into the Basin for replacement or cyclic storage purposes, subject to the affirmative vote of six (6) members of Watermaster.

(i) Contracts. To enter into contracts for the performance of any administrative powers herein granted, subject to approval of the Court.

(j) Cooperation With Existing Agencies. To act jointly or cooperate with agencies of the United States and the State of California or any political subdivision, municipality or district to the end that the purposes of the Physical Solution may be fully and economically carried out. Specifically, in the event Upper District has facilities available and adequate to accomplish any of the

administrative functions of Watermaster, consideration shall be given to performing said functions under contract with Upper District in order to avoid duplication of facilities.

(k) Assumption of Make-up Obligation. Watermaster shall assume the Make-up Obligation for and on behalf of the Basin.

(m) Water Quality. Water quality in the Basin shall be a concern of Watermaster, and all reasonable steps shall be taken to assist and encourage appropriate regulatory agencies to enforce reasonable water quality regulations affecting the Basin, including regulation of solid and liquid waste disposal.

(n) Cyclic Storage Agreements. To enter into appropriate contracts, to be approved by the Court, for utilization of Ground Water storage capacity of the Basin for cyclic or regulatory storage of Supplemental Water by parties and non-parties, for subsequent recovery or Watermaster credit by the storing entity, pursuant to uniform rules and conditions, which shall include provision for:

(1) Watermaster control of all spreading or injection and extraction scheduling and procedures for such stored water;

(2) calculation by Watermaster of any special costs, damages or burdens resulting from such operations;

(3) determination by Watermaster of, and

accounting for, all losses in stored water, assuming that such stored water floats on top of the Ground Water supplies, and accounting for all losses of water which otherwise would have replenished the Basin, with priorities being established as between two or more such contractors giving preference to parties over non-parties; and

(4) payment to Watermaster for the benefit of the parties hereto of all special costs, damages or burdens incurred (without any charge, rent, assessment or expense as to parties hereto by reason of the adjudicated proprietary character of said storage rights, nor credit or offset for benefits resulting from such storage); provided, that no party shall have any direct interest in or control over such contracts or the operation thereof by reason of the adjudicated right of such party, the Watermaster having sole custody and control of all Ground Water storage rights in the Basin pursuant to the Physical Solution herein, and subject to review of the Court.

(o) Notice List. Maintain a current list of party designees to receive notice hereunder, in accordance with Section 54 hereof.

35. Policy Decisions -- Procedure. (Prior Judgment Section 27) It is contemplated that Watermaster will exercise discretion in making policy decisions relating to Basin management under the Physical Solution decreed herein. In order to assure full participation and opportunity to be heard for

those affected, no policy decision shall be made by Watermaster until thirty (30) days after the question involved has been raised for discussion at a Watermaster meeting and noted in the draft of minutes thereof.

36. Reports. (Prior Judgment Section 28) Watermaster shall annually file with the Court and mail to the parties a report of all Watermaster activities during the preceding year, including an audited statement of all accounts and financial activities of Watermaster, summary reports of Diversions and Pumping, and all other pertinent information. To the extent practical, said report shall be mailed to all parties on or before November 1.

37. Review Procedures. (Prior Judgment Section 29) Any action, decision, rule or procedure of Watermaster (other than a decision establishing Operating Safe Yield, see Section 43[c]) shall be subject to review by the Court on its own motion or on timely motion for an Order to Show Cause by any party, as follows:

(a) Effective Date of Watermaster Action. Any order, decision or action of Watermaster shall be deemed to have occurred on the date that written notice thereof is mailed. Mailing of draft copies of Watermaster minutes to the parties requesting the same shall constitute notice to all such parties.

(b) Notice of Motion. Any party may, by a regularly noticed motion, petition the Court for review of said Watermaster's action or decision. Notice of such motion shall be mailed to Watermaster and all parties. Unless so

ordered by the Court, such petition shall not operate to stay the effect of such Watermaster action.

(c) Time for Motion. Notice of motion to review any Watermaster action or decision shall be served and filed within ninety (90) days after such Watermaster action or decision.

(d) De Novo Nature of Proceeding. Upon filing of such motion for hearing, the Court shall notify the parties of a date for taking evidence and argument, and shall review de novo the question at issue on the date designated. The Watermaster decision or action shall have no evidentiary weight in such proceeding.

(e) Decision. The decision of the Court in such proceeding shall be an appealable Supplemental Order in this case. When the same is final, it shall be binding upon the Watermaster and the parties.

F. PHYSICAL SOLUTION

38. Purpose and Objective. (Prior Judgment Section 30) Consistent with the California Constitution and the decisions of the Supreme Court, the Court hereby adopts and Orders the parties to comply with this Physical Solution. The purpose and objective of these provisions is to provide a legal and practical means for accomplishing the most economic, long term, conjunctive utilization of surface, Ground Water, Supplemental Water and Ground Water storage capacity to meet the needs and requirements of the water users dependent upon the Basin and Relevant Watershed, while preserving existing equities.

39. Need for Flexibility. (Prior Judgment Section 31) In

order that Watermaster may be free to utilize both existing and new and developing technological, social and economic concepts for the fullest benefit of all those dependent upon the Basin, it is essential that the Physical Solution hereunder provide for maximum flexibility and adaptability. To that end, the Court has retained continuing jurisdiction to supplement the broad discretion herein granted to the Watermaster.

40. Watermaster Control. (Prior Judgment Section 32) In order to develop an adequate and effective program of Basin management, it is essential that Watermaster have broad discretion in the making of Basin management decisions within the ambit hereinafter set forth. Withdrawal and replenishment of supplies of the Basin and Relevant Watershed and the utilization of the water resources thereof, and of available Ground Water storage capacity, must be subject to procedures established by Watermaster in implementation of the provisions of this Judgment. Both the quantity and quality of said water resource are thereby preserved and its beneficial utilization maximized.

41. General Pattern of Contemplated Operation. (Prior Judgment Section 33) In general outline (subject to the specific provisions hereafter and to Watermaster Operating Criteria set forth in Exhibit "H"), Watermaster will determine annually the Operating Safe Yield of the Basin and will notify each Pumper of his share thereof, stated in acre feet per Fiscal Year. Thereafter, no party may Produce in any Fiscal Year an amount in excess of the sum of his Diversion Right, if any, plus his Pumper's Share of such Operating Safe Yield, or his

Integrated Production Right, or the terms of any Cyclic Storage Agreement, without being subject to Assessment for the purpose of purchasing Replacement Water. In establishing the Operating Safe Yield, Watermaster shall follow all physical, economic, and other relevant parameters provided in the Watermaster Operating Criteria. Watermaster shall have Assessment powers to raise funds essential to implement the management plan in any of the several special circumstances herein described in more detail.

42. Basin Operating Criteria. (Prior Judgment Section 34) Until further order of the Court and in accordance with the Watermaster Operating Criteria, Watermaster shall not spread Replacement Water when the water level at the Key Well exceeds Elevation two hundred fifty (250), and Watermaster shall spread Replacement Water, insofar as practicable, to maintain the water level at the Key Well above Elevation two hundred (200).

43. Determination of Operating Safe Yield. (Prior Judgment Section 35) Watermaster shall annually determine the Operating Safe Yield applicable to the succeeding Fiscal Year and estimate the same for the next succeeding four (4) Fiscal Years. In making such determination, Watermaster shall be governed in the exercise of its discretion by the Watermaster Operating Criteria. The procedures with reference to said determination shall be as follows:

(a) Preliminary Determination. On or before Watermaster's first meeting in April of each year, Watermaster shall make a Preliminary Determination of the Operating Safe Yield of the Basin for each of the succeeding five Fiscal Years. Said determination shall be

made in the form of a report containing a summary statement of the considerations, calculations and factors used by Watermaster in arriving at said Operating Safe Yield.

(b) Notice and Hearing. A copy of said Preliminary Determination and report shall be mailed to each Pumper and Integrated Producer at least ten (10) days prior to a hearing to be held at Watermaster's regular meeting in May, of each year, at which time objections or suggested corrections or modifications of said determinations shall be considered. Said hearing shall be held pursuant to procedures adopted by Watermaster.

(c) Watermaster Determination and Review Thereof. Within thirty (30) days after completion of said hearing, Watermaster shall mail to each Pumper and Integrated Producer a final report and determination of said Operating Safe Yield for each such Fiscal Year, together with a statement of the Producer's entitlement in each such Fiscal Year stated in acre feet. Any affected party, within thirty (30) days of mailing of notice of said Watermaster determination, may, by a regularly noticed motion, petition the Court for an Order to Show Cause for review of said Watermaster finding, and thereupon the Court shall hear such objections and settle such dispute. Unless so ordered by the Court, such petition shall not operate to stay the effect of said report and determination. In the absence of such review proceedings, the Watermaster determination shall be final.

44. Reports of Pumping and Diversion. (Prior Judgment

Section 36) Each party (other than Minimal Producers) shall file with the Watermaster quarterly, on or before the last day of January, April, July and October, a report on a form to be prescribed by Watermaster showing the total Pumping and Diversion (separately for Direct Use and for non-consumptive use, if any,) of such party during the preceding calendar quarter.

45. Assessments -- Purpose. (Prior Judgment Section 37) Watermaster shall have the power to levy and collect Assessments from the parties (other than Minimal Producers, non-consumptive users, or Production under Special Category Rights or Cyclic Storage Agreements) based upon Production during the preceding Fiscal Year. Said Assessments may be for one or more of the following purposes:

(a) Watermaster Administration Costs. Within thirty (30) days after completion of the hearing on the Preliminary Determination of the Operating Safe Yield of the Basin and Watermaster's determination thereof, pursuant to Section 43 hereof, Watermaster shall adopt a proposed budget for the succeeding Fiscal Year and shall mail a copy thereof to each party, together with a statement of the level of Administration Assessment levied by Watermaster which will be collected for purposes of raising funds for said budget. Said Assessment shall be uniformly applicable to each acre foot of Production.

(b) Replacement Water Costs. Replacement Water Assessments shall be collected from each party on account of such party's Production in excess of its Diversion

Rights, Pumper's Share or Integrated Production Right, and on account of the consumptive use portion of Overlying Rights, computed at the applicable rate established by Watermaster consistent with the Watermaster Operating Criteria.

(c) Make-Up Obligation. An Assessment shall be collected equally on account of each acre foot of Production, which does not bear a Replacement Assessment hereunder, to pay all necessary costs of Administration and satisfaction of the Make-Up Obligation. Such Assessment shall not be applicable to water Production for an Overlying Right.

(d) In-Lieu Water Cost. Watermaster may levy an Assessment against all Pumping to pay reimbursement for In-Lieu Water Costs except that such Assessment shall not be applicable to the non-consumptive use portion of an Overlying Right.

(e) Basin Water Quality Improvement. For purposes of testing, protecting or improving the water quality in the Basin, Watermaster may, after a noticed hearing thereon, fix terms and conditions under which it may waive all or any part of its Assessments on such ground water Production and if such Production, in addition to his other Production, does not exceed such Producer's Share or entitlement for that Fiscal Year, such stated Production shall be allowed to be carried over for a part of such Producer's next Fiscal Year's Producer's Share or entitlement. In connection therewith, Watermaster may also

waive the provisions of Sections 25, 26 and 57 hereof, relating to Injunction Against Unauthorized Recharge, Injunction Against Transportation From Basin or Relevant Watershed, and Intervention After Judgment, respectively. Nothing in this Judgment is intended to allow an increase in any Producer's annual entitlement nor to prevent Watermaster, after hearing thereon, from entering into contracts to encourage, assist and accomplish the clean up and improvement of degraded water quality in the Basin by non-parties herein. Such contracts may include the exemption of the Production of such Basin water therefor from Watermaster Assessments and, in connection therewith, the waiver of the provisions of Judgment Sections 25, 26, and 57 hereof.

46. Assessments -- Procedure. (Prior Judgment Section 38) Assessments herein provided for shall be levied and collected as follows:

(a) Levy and Notice of Assessment. Within thirty (30) days of Watermaster's annual determination of Operating Safe Yield of the Basin for each Fiscal Year and succeeding four (4) Fiscal Years, Watermaster shall levy applicable Administration Assessments, Replacement Water Assessments, Make-up Water Assessments and In-Lieu Water Assessments, if any. Watermaster shall give written notice of all applicable Assessments to each party on or before August 15, of each year.

(b) Payment. Each Assessment shall be payable, and each party is Ordered to pay the same, on or before

September 20, following such Assessment, subject to the rights reserved in Section 37 hereof.

(c) Delinquency. Any Assessment which becomes delinquent after January 1, 1980, shall bear interest at the annual prime rate plus one percent (1%) in effect on the first business day of August of each year. Said prime interest rate shall be that fixed by the Bank of America NT&SA for its preferred borrowing customers on said date. Said prime interest rate plus one percent (1%) shall be applicable to any said delinquent Assessment from the due date thereof until paid. Provided, however, in no event shall any said delinquent Assessment bear interest at a rate of less than ten percent (10%) per annum. Such delinquent Assessment and interest may be collected in a Show Cause proceeding herein or any other legal proceeding instituted by Watermaster, and in such proceeding the Court may allow Watermaster its reasonable costs of collection, including attorney's fees.

47. Availability of Supplemental Water From Responsible Agencies. (Prior Judgment Section 39) If any Responsible Agency shall, for any reason, be unable to deliver Supplemental Water to Watermaster when needed, Watermaster shall collect funds at an appropriate level and hold them in trust, together with interest accrued thereon, for purchase of such water when available.

48. Accumulation of Replacement Water Assessment Proceeds. (Prior Judgment Section 40) In order to minimize fluctuation in Assessments and to give Watermaster flexibility in Basin

management, Watermaster may make reasonable accumulations of Replacement Water Assessments. Such moneys and any interest accrued thereon shall only be used for the purchase of Replacement Water.

49. Carry-over of Unused Rights. (Prior Judgment Section 41) Any Pumper's Share of Operating Safe Yield, and the Production right of any Integrated Producer, which is not Produced in a given Fiscal Year may be carried over and accumulated for one Fiscal Year, pursuant to reasonable rules and procedures for notice and accounting which shall be adopted by Watermaster. The first water Produced in the succeeding Fiscal Year shall be deemed Produced pursuant to such Carry-over Rights.

50. Minimal Producers. (Prior Judgment Section 42) In the interest of Justice, Minimal Producers are exempted from the operation of this Physical Solution, so long as such party's annual Production does not exceed five (5) acre feet. Quarterly Production reports by such parties shall not be required, but Watermaster may require, and Minimal Producers shall furnish, specific periodic reports. In addition, Watermaster may conduct such investigation of future operations of any Minimal Producer as may be appropriate.

51. Effective Date. (Prior Judgment Section 43) The effective date for commencing accounting and operation under this Physical Solution, other than for Replacement Water Assessments, shall be July 1, 1972. The first Assessment for Replacement Water shall be payable on September 20, 1974, on account of Fiscal Year 1973-74 Production.

G. MISCELLANEOUS PROVISIONS

52. Puente Narrows Flow. (Prior Judgment Section 44) The Puente Basin is tributary to the Main San Gabriel Basin. All Producers within said Puente Basin have been dismissed herein, based upon the Puente Narrows Agreement (Exhibit "J"), whereby Puente Basin Water Agency agreed not to interfere with surface inflow and to assure continuance of historic subsurface contribution of water to Main San Gabriel Basin. The Court declares said Agreement to be reasonable and fair and in full satisfaction of claims by Main San Gabriel Basin for natural water from Puente Basin.

53. San Gabriel District - Interim Order. (Prior Judgment Section 45) San Gabriel District has a contract with the State of California for State Project Water, delivered at Devil Canyon in San Bernardino County. San Gabriel District is HEREBY ORDERED to proceed with and complete necessary pipeline facilities as soon as practical.

Until said pipeline is built and capable of delivering a minimum of twenty-eight thousand eight-hundred (28,800) acre feet of State Project water per year, defendant cities of Alhambra, Azusa, and Monterey Park shall pay to Watermaster each Fiscal Year a Replacement Assessment at a uniform rate sufficient to purchase Replenishment Water when available, which rate shall be declared by San Gabriel District. When water is available through said pipeline, San Gabriel District shall make the same available to Watermaster, on his reasonable demand, at said specified rate per acre foot. Interest accrued on such funds shall be paid to San Gabriel

District.

54. Service Upon and Delivery to Parties of Various Papers. (Prior Judgment Section 46) Service of the Judgment on those parties who have executed the Stipulation for Judgment shall be made by first class mail, postage prepaid, addressed to the Designee and at the address designated for that purpose in the executed and filed counterpart of the Stipulation for Judgment, or in any substitute designation filed with the Court.

Each party who has not heretofore made such a designation shall, within thirty (30) days after the Judgment shall have been served upon that party, file with the Court, with proof of service of a copy thereof upon Watermaster, a written designation of the person to whom and the address at which all future notices, determinations, requests, demands, objections, reports and other papers and processes to be served upon that party or delivered to that party are to be so served or delivered.

A later substitute designation filed and served in the same manner by any party shall be effective from the date of filing as to the then future notices, determinations, requests, demands, objections, reports and other papers and processes to be served upon or delivered to that party.

Delivery to or service upon any party by Watermaster, by any other party, or by the Court, of any item required to be served upon or delivered to a party under or pursuant to the Judgment may be made by deposit thereof (or by copy thereof) in the mail, first class, postage prepaid, addressed to the Designee of the party and at the address shown in the latest

designation filed by that party.

55. Assignment, Transfer, etc., of Rights. (Prior Judgment Section 47) Any rights Adjudicated herein except Overlying Rights, may be assigned, transferred, licensed or leased by the owners thereof; provided however, that no such assignment shall be complete until the appropriate notice procedures established by Watermaster have been complied with. No water Produced pursuant to rights assigned, transferred, licensed, or leased may be transported outside the Relevant Watershed except by:

(1) a Transporting Party, or

(2) a successor in interest immediate or mediate to a water system on lands or portion thereof, theretofore served by such a Transporting Party, for use by such successor in accordance with limitations applicable to Transporting Parties, or

(3) a successor in interest to the Special Category rights of MWD.

The transfer and use of Overlying Rights shall be limited, as provided in Section 21 hereof, as exercisable only on the specifically defined Overlying Lands and they cannot be separately conveyed or transferred apart therefrom.

56. Abandonment of Rights. (Prior Judgment Section 48) It is in the interest of reasonable beneficial use of the Basin and its water supply that no party be encouraged to take and use more water in any Fiscal Year than is actually required. Failure to Produce all of the water to which a party is entitled hereunder shall not, in and of itself, be deemed or constitute

an abandonment of such party's right, in whole or in part. Abandonment and extinction of any right herein Adjudicated shall be accomplished only by:

(1) a written election by the party, filed in this case, or

(2) upon noticed motion of Watermaster, and after hearing.

In either case, such abandonment shall be confirmed by express subsequent order of this Court.

57. Intervention After Judgment. (Prior Judgment Section 49) Any person who is not a party or successor to a party and who proposes to Produce water from the Basin or Relevant Watershed, may seek to become a party to this Judgment through a Stipulation For Intervention entered into with Watermaster. Watermaster may execute said Stipulation on behalf of the other parties herein but such Stipulation shall not preclude a party from opposing such Intervention at the time of the Court hearing thereon. Said Stipulation For Intervention must thereupon be filed with the Court, which will consider an order confirming said Intervention following thirty (30) days' notice to the parties. Thereafter, if approved by the Court, such Intervenor shall be a party bound by this Judgment and entitled to the rights and privileges accorded under the Physical Solution herein.

58. Judgment Binding on Successors, etc. (Prior Judgment Section 50) Subject to specific provisions hereinbefore contained, this Judgment and all provisions thereof are applicable to and binding upon and inure to the benefit of not

only the parties to this action, but as well to their respective heirs, executors, administrators, successors, assigns, lessees, licensees and to the agents, employees and attorneys in fact of any such persons.

59. Water Rights Permits. (Prior Judgment Section 51) Nothing herein shall be construed as affecting the relative rights and priorities between MWD and San Gabriel Valley Protective Association under State Water Rights Permits Nos. 7174 and 7175, respectively.

60. Costs. (Prior Judgment Section 52) No party shall recover any costs in this proceeding from any other party.

61. Entry of Judgment. (New) The Clerk shall enter this Judgment.

DATED: August 24, 1989.

s/ Florence T. Pickard
Florence T. Pickard, Judge
Specially Assigned

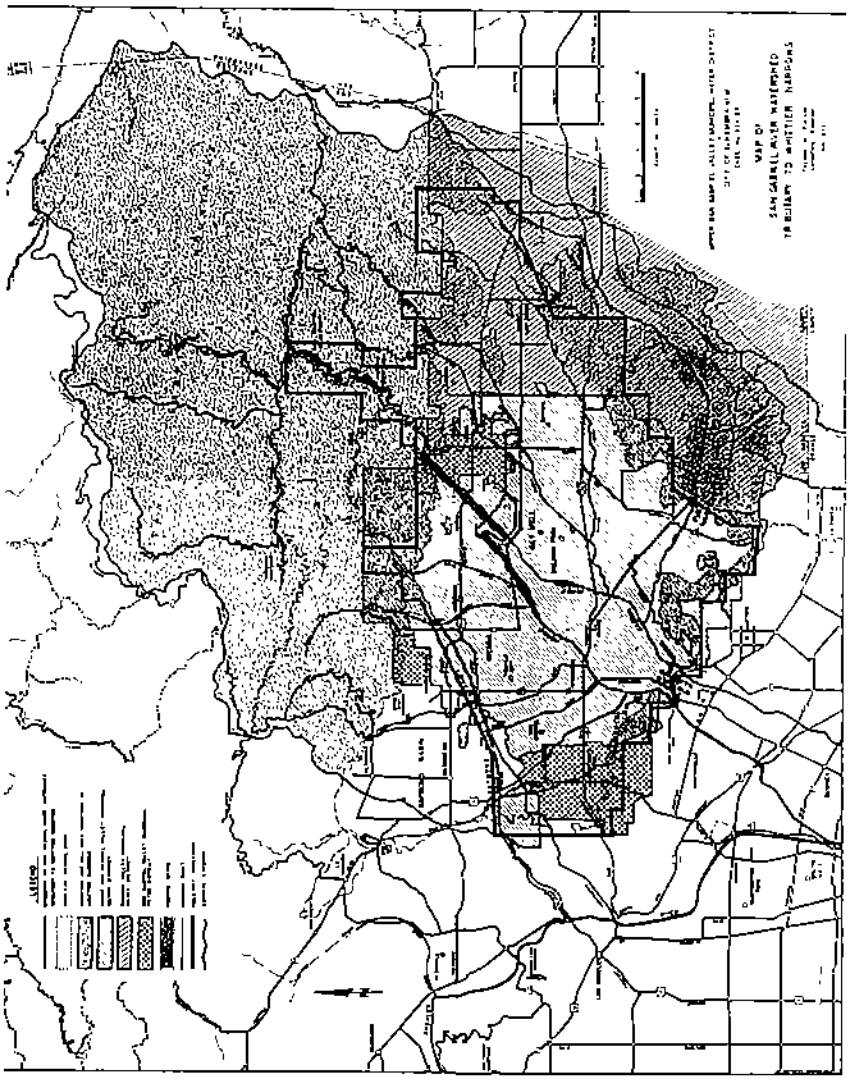


Exhibit "B"

BOUNDARIES OF RELEVANT WATERSHED

The following described property is located in Los Angeles County, State of California:

Beginning at the Southwest corner of Section 14, Township 1 North, Range 11 West, San Bernardino Base and Meridian;

Thence Northerly along the West line of said Section 14 to the Northwest corner of the South half of said Section 14;

Thence Easterly along the North line of the South half of Section 14 to the East line of said Section 14;

Thence Northerly along the East line of said Section 14, Township 1 North, Range 11 West and continuing Northerly along the East line of Section 11 to the Northeast corner of said Section 11;

Thence Easterly along the North line of Section 12 to the Northeast corner of said Section 12;

Thence Southerly along the East line of said Section 12 and continuing Southerly along the East line of Section 13 to the Southeast corner of said Section 13, said corner being also the Southwest corner of Section 18, Township 1 North, Range 10 West;

Thence Easterly along the South line of Sections 18, 17, 16 and 15 of said Township 1 North, Range 10 West to the Southwest corner of Section 14;

Thence Northerly along the West line of Section 14 to the Northwest corner of the South half of Section 14;

Thence Easterly along the North line of the South half of Section 14 to the East line of said section;

Thence Northerly along the East line of said Section 14, and continuing Northerly along the West line of Section 12 of said Township 1 North, Range 10 West to the North line of said Section 12;

Thence Easterly along the North line of said Section 12, to the Northeast corner of said Section 12, said corner being also the Southwest corner of Section 6, Township 1 North, Range 9 West;

Thence Northerly along the West line of said Section 6 and continuing Northerly along West line of Sections 31 and 30, Township 2 North, Range 9 West to the Westerly prolongation of the North line of said Section 30;

Thence Easterly along said Westerly prolongation of the North line of said Section 30 and continuing Easterly along the North line of Section 29 to the Northeast corner of said Section 29;

Thence Southerly along the East line of said Section 29 and continuing Southerly along the East line of Section 32, Township 2 North, Range 9 West, and thence continuing Southerly along the East line of Section 5, Township 1 North, Range 9 West to the Southeast corner of said Section 5;

Thence Westerly along the South line of said Section 5 to the Southwest corner of said Section 5, said point being also the Northwest corner of Section 8;

Thence Southerly along the West line of said Section 8 and continuing Southerly along the West line of Section 17, to the Southwest corner of said Section 17, said corner being also the Northwest corner of Section 20;

Thence Easterly along the North line of Sections 20 and 21 to the Northwest corner of Section 22, said corner being also the Southwest corner of Section 15;

Thence Northerly along the West line of said Section 15 to the Northwest corner of the South half of said Section 15;

Thence Easterly along the North line of said South half of Section 15 to the Northeast corner of said South half of Section 15;

Thence Southerly along the East line of Section 15 and continuing Southerly along the East line of Section 22 to the Southeast corner of said Section 22, said point being also the Southwest corner of Section 23;

Thence Easterly along the South line of Sections 23 and 24 to the East line of the West half of said Section 24;

Thence Northerly along said East line of the West half of Section 24 to the North line thereof;

Thence Easterly along said North line of Section 24 to the Northeast corner thereof, said point also being the Northwest corner of Section 19, Township 1 North, Range 8 West;

Thence continuing Easterly along the North line of Section 19 and Section 20 of said Township 1 North, Range 8 West to the Northeast corner of said Section 20;

Thence Southerly along the East line of Sections 20, 29 and 32 of said Township 1 North, Range 8 West to the Southeast corner of said Section 32;

Thence Westerly along the South line of Section 32 to the Northwest corner of the East half of Section 5, Township 1 South, Range 8 West;

Thence Southerly along the West line of the East half of said Section 5 to the South line of said Section 5;

Thence West to the East line of the Northerly prolongation of Range 9 West;

Thence South 87° 30' West to an intersection with the Northerly prolongation of the West line of Section 27, Township 1 South, Range 9 West;

Thence Southerly along the Northerly prolongation of said West line of Section 27 and continuing Southerly along the West line of Section 27 to the Southwest corner of said Section 27, said point being also the Southeast corner of Section 28;

Thence Westerly along the South line and Westerly projection of the South line of said Section 28 to the Northerly prolongation of the West line of Range 9 West;

Thence Southerly along said prolongation of the West line of Range 9 West to the Westerly prolongation of the North line of Township 2 South;

Thence Westerly along said Westerly prolongation of the North line of Township 2 South, a distance of 8,500 feet;

Thence South a distance of 1,500 feet;

Thence West a distance of 10,700 feet;

Thence South 29° West to an intersection with the Northerly prolongation of the West line of Section 20, Township 2 South, Range 10 West;

Thence Southerly along said Northerly prolongation of the West line of said Section 20 and continuing Southerly along the West line of Section 20 to the Southwest corner of said Section 20;

Thence South a distance of 2,000 feet;

Thence West a distance of two miles, more or less, to an intersection with the East line of Section 26, Township 2 South, Range 11 West;

Thence Northerly along said East line of Section 26 and continuing Northerly along the East line of Section 23, Township 2 South, Range 11 West to the Northeast corner of said Section 23;

Thence Westerly along the North line of said Section 23 to the Northwest corner thereof, said point being also the Southeast corner of Section 15, Township 2 South, Range 11 West;

Thence Northerly and Westerly along the East and North lines, respectively, of said Section 15, Township 2 South, Range 11 West, to the Northwest corner thereof;

Thence continuing Westerly along the Westerly prolongation of said North line of Section 15, Township 2 South, Range 11 West to an intersection with a line parallel to and one mile East of the West line of Range 11 West;

Thence Northerly along said parallel line to an intersection with the Northerly boundary of the City of Pico Rivera as said City of Pico Rivera existed on July 17, 1970;

Thence Westerly along said City boundary to an intersection with the East line of Range 12 West;

Thence Northerly along said East line of Range 12 West to the North line of Township 2 South;

Thence Westerly along the North line of Township 2 South to an intersection with the Southerly prolongation of the East line of the West half of Section 26, Township 1 South, Range 12 West;

Thence Northerly along said Southerly prolongation of said East line of the West half of said Section 26 to the Southeast corner of said West half;

Thence Westerly along the South line of Sections 26, 27 and 28, Township 1 South, Range 12 West, to the Southeast corner of Section 29, Township 1 South, Range 12 West;

Thence Northerly along the East line of said Section 29 to the Northeast corner of the South half of said Section 29;

Thence Westerly along the North line of the South half of said Section 29 to the Northwest corner thereof;

Thence Northerly along the West line of Sections 29, 20, 17 and 8, Township 1 South, Range 12 West;

Thence continuing Northerly along the Northerly prolongation of the West line of Section 8, Township 1 South, Range 12 West to an intersection with the North line of Township 1 South;

Thence Easterly along said North line of Township 1 South to the Northeast corner of Section 3, Township 1 South, Range 12 West;

Thence North 64° 30′ East to an intersection with the West line of Section 23, Township 1 North, Range 11 West;

Thence Northerly along the West line of said Section 23 to the Northwest corner thereof, said point being the Southwest corner of Section 14, Township 1 North, Range 11 West and said point being also the point of beginning.

Exhibit "C"

TABLE
SHOWING BASE
ANNUAL DIVERSION
RIGHTS OF CERTAIN
DIVERTERS

	Base Annual Diversion Right Acre-Feet
Covell, Ralph (Successor to Rittenhouse, Catherine and Rittenhouse, James)	2.12
Maddock, A. G.	3.40
Rittenhouse, Catherine (Transferred to Covell, Ralph)	0
Rittenhouse, James (Transferred to Covell, Ralph)	0
Ruebhausen, Arline (Held in common with Ruebhausen, Victor) (Transferred to City of Glendale)	0
Ruebhausen, Victor (See Ruebhausen, Arline, above)	0
TOTAL	5.52

Exhibit "D"

TABLE
SHOWING PRESCRIPTIVE PUMPING RIGHTS
AND PUMPER'S SHARE OF EACH PUMPER
AS OF JUNE, 1988

Pumper	Prescriptive Pumping Right Acre-feet	Pumper's Share Percent (%)
Adams Ranch Mutual Water Company	100.00	0.05060
A & E Plastik Pak Co., Inc. (Transferred to Industry Properties, Ltd.)	0	0
Alhambra, City of	8,812.05	4.45876
Amarillo Mutual Water Company	709.00	0.35874
Anchor Plating Co., Inc. (Successor to Bodger & Sons) (Transferred to Crown City Plating Co.)	0	0
Anderson, Ray L. and Helen T., Trustees (Successor to Covina-Valley Unified School District)	50.16	0.02538
Andrade, Marcario and Consuelo; and Andrade, Robert and Jayne (Successor to J. F. Isbell Estate, Inc.)	8.36	0.00423
Arcadia, City of	9,252.00	4.68137
(Successor to First National Finance Corporation)	60.90	0.03081
(Transferred to City of Monrovia)	951.00	0.48119
	8,361.90	4.23099
Associated Southern Investment Company (Transferred to Southern California Edison Company)	0	0
AZ-Two, Inc. (Lessee of Southwestern Portland Cement Co.)	0	0
Azusa, City	3,655.99	1.84988
Azusa-Western Inc. (Transferred to Southwestern Portland Cement Co.)	0	0
Bahnsen & Beckman Ind., Inc. (Transferred to Woodland, Richard)	0	0

Pumper	Prescriptive Pumping Right Acre-feet	Pumper's Share %
Bahnsen, Betty M. (Transferred to Dawes, Mary Kay)	0	0
Baldwin Park County Water District (See Valley County Water District)	-	-
Banks, Gale C. (Successor to Doyle, Mr. and Mrs.; and Madruga, Mr. and Mrs.)	50.00	0.02530
Base Line Water Company	430.20	0.21767
Beverly Acres Mutual Water Company	93.00	0.04706
Birenbaum, Max (Held in common with Birenbaum, Sylvia; Schneiderman, Alan; Schneiderman, Lydia; Wigodsky, Bernard; Wigodsky, Estera) (Transferred to City of Whittier)	0	0
Birenbaum, Sylvia (See Birenbaum, Max)	-	-
Blue Diamond Concrete Materials Div., The Flintkote Company (Transferred to Sully-Miller Contracting Co.)	0	0
Bodger & Sons DBA Bodger Seeds Ltd. (Transferred to Anchor Plating Co., Inc.)	0	0
Botello Water Company	0	0
Burbank Development Company	50.65	0.02563
Cadway, Inc. (Successor to: Corcoran, Jack S. and R. L.)	100.00	0.05060
Corcoran, Jack S. and R. L.)	100.00	0.05060
	200.00	0.10120
Cal Fin (Transferred to Suburban Water Systems)	0	0
California-American Water Company (San Marino System)	7,868.70	3.98144
California Country Club	0	0

Pumper	Prescriptive Pumping Right Acre-feet	Pumper's Share %
California Domestic Water Company (Successor to:	11,024.82	5.57839
Cantrill Mutual Water Company	42.50	0.02150
Industry Properties, Ltd.	73.50	0.03719
Modern Accent Corporation	256.86	0.12997
Fisher, Russell)	19.00	0.00961
	11,416.68	5.77666
California Materials Company	0	0
Cantrill Mutual Water Company (Transferred to California Domestic Water Co.)	0	0
Cedar Avenue Mutual Water Company	121.10	0.06127
Champion Mutual Water Company	147.68	0.07472
Chronis, Christine (See Polopolus, et al)	-	-
Clayton Manufacturing Company	511.80	0.25896
Collison, E. O.	0	0
Comby, Erma M. (See Wilmott, Erma M.)	-	-
Conrock Company (Formerly Consolidated Rock Products Co.)	1,465.35	0.74144
(Successor to Manning Bros. Rock & Sand Co.)	328.00	0.16596
	1,793.35	0.90740
Consolidated Rock Products Co. (See Conrock Company)	-	-
Corcoran, Jack S. (Held in common with Corcoran, R. L.) (Transferred to:	747.00	0.37797
Cadway, Inc.	100.00	0.05060
Cadway, Inc.)	100.00	0.05060
	947.00	0.47917
Corcoran, R. L. (See Corcoran, Jack S.)	-	-
County Sanitation District No. 18 of Los Angeles County	4.50	0.00228

Pumper	Prescriptive Pumping Right Acre-feet	Pumper's Share %
Covell, et al. (Successor to Rittenhouse, Catherine and Rittenhouse, James) (Held in common with Jobe, Darr; Goedert, Lillian E.; Goedert, Marion W.; Lakin, Kendall R.; Lakin, Kelly R.; Snyder, Harry)	111.05	0.05619
Covina, City of	2,507.89	1.26895
(Transferred to Covina Irrigating Company)	1,734.00	0.87737
(Transferred to Covina Irrigating Company)	300.00	0.15179
	473.89	0.23979
Covina-Valley Unified School District (Transferred to Anderson, Ray)	0	0
Crevolin, A. J.	2.25	0.00114
Crocker National Bank, Executor of the Estate of A. V. Handorf (Transferred to Modern Accent Corp.)	0	0
Cross Water Company (Transferred to City of Industry)	0	0
Crown City Plating Company	190.00	0.09614
(Successor to Anchor Plating Co., Inc.)	10.00	0.00506
	200.00	0.10120
Davidson Optronics, Inc.	22.00	0.01113
Dawes, Mary Kay (Successor to Bahnsen, Betty M.)	441.90	0.22359
Del Rio Mutual Water Company	199.00	0.10069
Denton, Kathryn W., Trustee for San Jose Ranch Company (Transferred to White, June G., Trustee of the June G. White Share of the Garnier Trust)	0	0
Doyle, Mr. and Mrs.; and Madruga, Mr. and Mrs. (Successor to Sawpit Farms, Ltd.) (Transferred to Banks, Gale C.)	0	0
Driftwood Dairy	163.80	0.08288
Duhalde, L. (Transferred to El Monte Union High School District)	0	0

Pumper	Prescriptive Pumping Right Acre-feet	Pumper's Share %
Dunning, George (Held in common with Dunning, Vera H.) (Successor to Vera H. Dunning)	324.00	0.16394
Dunning, Vera H. (Transferred to George Dunning)	-	-
East Pasadena Water Company, Ltd.	1,407.69	0.71227
Eckis, Rollin (Successor to Sawpit Farms, Ltd.) (Transferred to City of Monrovia)	0	0
El Encanto Properties (Transferred to La Puente Valley County Water District)	0	0
El Monte, City of	2,784.23	1.40878
El Monte Cemetary Association	18.50	0.00936
El Monte Union High School District (Successor to Duhalde, L.) (Transferred to City of Whittier)	0	0
Everett, Mrs. Alda B. (Held in common with Everett, W. B., Executor of the Estate of I. Worth Everett)	0	0
Everett, W. B., Executor of the Estate of I. Worth Everett (See Everett, Mrs. Alda B.)	-	-
Faix, Inc. (Successor to Frank F. Pellissier & Sons, Inc.) (Transferred to Faix, Ltd.)	0	0
Faix, Ltd. (Successor to Faix, Inc.)	6,490.00	3.28384
First National Finance Corporation (Transferred to City of Arcadia)	0	0
Fisher, Russell (Held in common with Hauch, Edward and Warren, Clyde) (Transferred to California Domestic Water Company)	0	0

Pumper	Prescriptive Pumping Right Acre-feet	Pumper's Share %
Frank F. Pellissier & Sons, Inc. (Transferred to Faix, Inc.)	0	0
Fruit Street Water Company (Transferred to: Gifford, Brooks, Jr. City of La Verne)	0	0
Gifford, Brooks, Jr. (Successor to: Fruit Street Water Co., Mission Gardens Mutual Water Company) (Transferred to City of Whittier)	0	0
Gilkerson, Frank B. (Transferred to Jobe, Darr)	-	-
Glendora Unified High School District (Transferred to City of Glendora)	0	0
Goedert, Lillian E. (See Covell, et al)	-	-
Goedert, Marion W. (See Covell, et al)	-	-
Graham, William (Transferred to Darr Jobe)	-	-
Green, Walter	71.70	0.03628
Grizzle, Lissa D. (Held in common with Grizzle, Mervin A.; Wilson, Harold R.; Wilson, Sarah C.) (Transferred to City of Whittier)	0	0
Grizzle, Mervin A. (See Grizzle, Lissa B.)	0	0
Hansen, Alice	0.75	0.00038
Hartley, David	0	0
Hauch, Edward (See Fisher, Russell)	0	0
Hemlock Mutual Water Company	166.00	0.08399

Pumper	Prescriptive Pumping Right Acre-feet	Pumper's Share %
Hollenbeck Street Water Company (Transferred to Suburban Water Systems)	0	0
Hunter, Lloyd F. (Successor to R. Wade)	4.40	0.00223
Hydro-Conduit Corporation	0	0
Industry Waterworks System, City of (Successor to Cross Water Company)	1,103.00	0.55810
Industry Properties, Ltd. (Successor to A & E Plastik Pak Co., Inc.) (Transferred to California Domestic Water Co.)	0	0
J. F. Isbell Estate, Inc. (Transferred to Andrade, Macario and Consuelo; and Andrade, Robert and Jayne)	0	0
Jerris, Helen (See Polopolus, et al)	-	-
Jobe, Darr (See Covell, et al)	-	-
Kirklen Family Trust (Formerly Kirklen, Dawn L.) (Held in common with Kirklen, William R.)	375.00	0.18974
(Successor to San Dimas-La Verne Recreational Facilities Authority)	62.50	0.03162
	437.50	0.22136
Kirklen, Dawn L. (See Kirklen Family Trust)	-	-
Kirklen, William R. (See Kirklen, Dawn L.)	-	-
Kiyan, Hideo (Held in common with Kiyan, Hiro)	30.00	0.01518
Kiyan, Hiro (See Kiyan, Hideo)	-	-
Knight, Kathryn M. (Successor to William Knight)	227.88	0.11530
Knight, William (Transferred to Kathryn M. Knight)	0	0

Pumper	Prescriptive Pumping Right Acre-feet	Pumper's Share %
Lakin, Kelly R. (See Covell, et al)	-	-
Lakin, Kendall R. (See Covell, et al)	-	-
Landeros, John	0.75	0.00038
La Grande Source Water Company (Transferred to Suburban Water Systems)	0	0
Lang, Frank (Transferred to San Dimas-La Verne Recreational Facilities Authority)	0	0
La Puente Cooperative Water Company (Transferred to Suburban Water Systems)	0	0
La Puente Valley County Water District	1,097.00	0.55507
(Successor to El Encanto Properties)	33.10	0.01690
	1,130.10	0.57197
La Verne, City of	250.00	0.12650
(Successor to Fruit Street Water Co.)	105.71	0.05349
	355.71	0.17999
Lee, Paul M. and Ruth A.; Nasmyth, Virrginia; Nasmyth, John	0	0
Little John Dairy	0	0
Livingston-Graham, Inc.	1,824.40	0.92312
Los Flores Mutual Water Company (Transferred to City of Monterey Park)	0	0
Loucks, David	3.00	0.00152
Manning Bros. Rock & Sand Co. (Transferred to Conrock Company)	0	0
Maple Water Company	118.50	0.05996
Martinez, Frances Mercy (Held in common with Martinez, Jaime)	0.75	0.00038
Martinez, Jaime (See Martinez, Frances Mercy)	-	-
Massey-Ferguson Company	0	0

Pumper	Prescriptive Pumping Right Acre-feet	Pumper's Share %
Miller Brewing Company	111.01	0.05617
(Successor to:		
Haechtlen, Estate of J. J.	151.50	0.07666
Phillips, Alice B., et al)	50.00	0.02530
	312.51	0.15813
Mission Gardens Mutual Water Company		
(Transferred to Gifford, Brooks, Jr.)	0	0
Modern Accent Corporation		
(Successor to Crocker National Bank,		
Executor of the Estate of A. V. Handorf)		
(Transferred to California Domestic Water Co.)	0	0
Monterey Park, City of	6,677.48	3.37870
(Successor to Los Flores Mutual Water Co.)	26.60	0.01346
	6,704.08	3.39216
Murphy Ranch Mutual Water Company		
(Transferred to Southwest Suburban Water)	0	0
Namimatsu Farms		
(Transferred to California Cities Water Company)	0	0
Nick Tomovich & Sons	0.02	0.00001
No. 17 Walnut Place Mutual Water Co.		
(Transferred to San Gabriel Valley		
Water Company)	0	0
Orange Production Credit Association	0	0
Owl Rock Products Co.	715.60	0.36208
Pacific Rock & Gravel Co.		
(Transferred to:		
City of Whittier		
Rose Hills Memorial Park Association)	0	0
Park Water Company		
(Transferred to Valley County Water District)	0	0
Penn, Margaret		
(See Polopolus, et al)	-	-
Pico County Water District	0.75	0.00038
Polopolus, John		
(See Polopolus, et al)	-	-

Pumper	Prescriptive Pumping Right Acre-feet	Pumper's Share %
Polopolus, et al		
(Successor to Polopolus, Steve)		
(Held in common with Chronis, Christine;		
Jerris, Helen; Penn, Margaret; Polopolus, John)	22.50	0.01138
Polopolus, Steve		
(Transferred to Polopolus, et al)	-	-
Rados, Alexander		
(Held in common with Rados, Stephen		
and Rados, Walter)	43.00	0.02176
Rados, Stephen		
(See Rados, Alexander)	-	-
Rados, Walter		
(See Rados, Alexander)	-	-
Richwood Mutual Water Company	192.60	0.09745
Rincon Ditch Company	628.00	0.31776
Rincon Irrigation Company	314.00	0.15888
Rittenhouse, Catherine		
(Transferred to Covell, Ralph)	0	0
Rittenhouse, James		
(Transferred to Covell, Ralph)	0	0
Rose Hills Memorial Park Association	594.00	0.30055
(Successor to Pacific Rock & Gravel Co.)	200.00	0.10120
	794.00	0.40175
Rosemead Development, Ltd.		
(Successor to Thompson, Earl W.)	1.00	0.00051
Rurban Homes Mutual Water Company	217.76	0.11018
Ruth, Roy	0.75	0.00038
San Dimas-La Verne Recreational		
Facilities Authority		
(Successor to Lang, Frank)		
(Transferred to Kirklen, Dawn L. and		
William R.)	0	0
San Gabriel Country Club	286.10	0.14476
San Gabriel County Water District	4,250.00	2.15044

Pumper	Prescriptive Pumping Right Acre-feet	Pumper's Share %
San Gabriel Valley Municipal Water District	0	0
San Gabriel Valley Water Company (Successor to:	16,659.00	8.42920
Vallecito Water Co.	2,867.00	1.45066
No. 17 Walnut Place Mutual Water Co.)	21.50	0.01088
	19,547.50	9.89074
Sawpit Farms, Limited (Transferred to: Eckis, Rollin Doyle and Mudruga)	0	0
Schneiderman, Alan (See Birenbaum, Max)	-	-
Schneiderman, Lydia (See Birenbaum, Max)	-	-
Security Pacific National Bank, Co-Trustee for the Estate of Winston F. Stoody (See Stoody, Virginia A.) (Transferred to City of Whittier)	0	0
Sierra Madre, City of	0	0
Sloan Ranches	129.60	0.06558
Smith, Charles	0	0
Snyder, Harry (See Covell, et al)	-	-
Sonoco Products Company	311.60	0.15766
South Covina Water Service	992.30	0.50209
Southern California Edison Company (Successor to: Associated	155.25	0.07855
Southern Investment Company)	16.50	0.00835
	171.75	0.08690
Southern California Water Company, San Gabriel Valley District	5,773.00	2.92105
South Pasadena, City of	3,567.70	1.80520
Southwest Suburban Water (See Suburban Water Systems)	-	-

Pumper	Prescriptive Pumping Right Acre-feet	Pumper's Share %
Southwestern Portland Cement Company (Successor to Azusa Western, Inc.)	742.00	0.37514
Speedway 605, Inc.	0	0
Standard Oil Company of California	2.00	0.00101
Sterling Mutual Water Company	120.00	0.06072
Stoody, Virginia A., Co-Trustee for the Estate of Winston F. Stoody (See Security Pacific National Bank, Co-Trustee)	-	-
Suburban Water Systems (Formerly Southwest Suburban Water) (Successor to:	20,462.47	10.35370
Hollenbeck Street Water Company	646.39	0.32706
La Grande Source Water Company	1,078.00	0.54545
La Puente Cooperative Water Co.	1,210.90	0.61270
Valencia Valley Water Company	651.50	0.32965
Victoria Mutual Water Company	469.60	0.23761
Cal Fin	118.10	0.05976
Murphy Ranch Mutual Water Co.	223.23	0.11295
	24,860.19	12.57888
Sully-Miller Contracting Company (Successor to Blue Diamond Concrete Materials Division, The Flintkote Co.)	1,399.33	0.70804
Sunny Slope Water Company	2,228.72	1.12770
Taylor Herb Garden (Transferred to Covina Irrigating Company)	0	0
Texaco, Inc.	50.00	0.02530
Thompson, Earl W. (Held in common with Thompson, Mary) (Transferred to Rosemead Development, Ltd.)	0	0
Thompson, Mary (See Thompson, Earl W.)	-	-
Tyler Nursery	3.21	0.00162
United Concrete Pipe Corporation (See U. S. Pipe & Foundry Company)	-	-

Pumper	Prescriptive Pumping Right Acre-feet	Pumper's Share %
U. S. Pipe & Foundry Company (Formerly United Concrete Pipe Corporation)	376.00	0.19025
Valencia Heights Water Company	861.00	0.43565
Valencia Valley Water Company (Transferred to Suburban Water Systems)	0	0
Vallecito Water Company (Transferred to San Gabriel Valley Water Company)	0	0
Valley County Water District (Formerly Baldwin Park County Water District)	5,775.00	2.92206
(Successor to Park Water Company)	184.01	0.09311
	5,959.01	3.01517
Valley Crating Company	0	0
Valley View Mutual Water Company	616.00	0.31169
Via, H. (See Via, H., Trust of)	-	-
Via, H., Trust of (Formerly Via, H.)	46.20	0.02338
Victoria Mutual Water Company (Transferred to Suburban Water Systems)	0	0
Wade, R. (Transferred to Lloyd F. Hunter)	0	0
Ward Duck Company	1,217.40	0.61599
Warren, Clyde (See Fisher, Russell)	-	-
W. E. Hall Company	0.20	0.00010
White, June G., Trustee of the June G. White Share of the Garnier Trust (Successor to Denton, Kathryn W., Trustee for the San Jose Ranch Company)	185.50	0.09386

Pumper	Prescriptive Pumping Right Acre-feet	Pumper's Share %
Whittier, City of	7,620.23	3.85572
(Successor to:		
Grizzle, Lissa B.	184.00	0.09310
Pacific Rock and Gravel Co.)	208.00	0.10524
Security Pacific National Bank, Co-Trustee for the Estate of Winston F. Stoody	38.70	0.01958
El Monte Union High School District	16.20	0.00820
Gifford, Brooks, Jr.	198.25	0.10031
Birenbaum, Max)	6.00	0.00304
	8,271.38	4.18519
Wigodsky, Bernard (See Birenbaum, Max)	-	-
Wigodsky, Estera (See Birenbaum, Max)	-	-
Wilmott, Erma M. (Formerly Comby, Erma M.)	0.75	0.00038
Wilson, Harold R. (See Grizzle, Lissa B.)	-	-
Wilson, Sarah C. (See Grizzle, Lissa B.)	-	-
Woodland, Frederick G.	-	-
Woodland, Richard (Successor to: Bahnsen and Beckman Ind., Inc.)	840.50	0.42528
Totals for Exhibit "D"	**155,800.68**	**78.83276**
Totals from Exhibit "E"	**38,626.25**	**19.54431**
GRAND TOTALS	**197,634.43**	**100.00000**

TABLE
SHOWING PRODUCTION RIGHTS
OF EACH
INTEGRATED PRODUCER
AS OF JUNE 1988

Party	Diversion Component Acre-feet	Prescriptive Pumping Component Acre-feet	Pumping Component Share Percent (%)
Azusa Agricultural Water Company	1,000.00	1,732.20	0.87647
Azusa Foot-Hill Citrus Water Company (Transfered to Monrovia Nursery Company)	0	0	0
Azusa Valley Water Company	2,422.00	8,274.00	4.18652
California-American Water Company (Duarte System)	1,672.00	3,649.00	1.84631
California Cities Water Company (See Southern California Water Company, San Dimas District)	-	-	-
Covina Irrigating Company (Successor to:	2,514.00	4,110.00	2.09478
City of Covina,		1,734.00	0.87737
City of Covina, and		300.00	0.15179
Taylor Herb Garden)		6.00	0.00304
	2,514.00	6,180.00	3.12698
Glendora, City of (Successor to:	17.00	8,258.00	4.17842
Maechtlen, Estate of J. J.,		150.00	0.07590
Maechtlen, Trust of P. A.,		50.00	0.02530
Ruebhausen, Arline, and	18.34		
Glendora Unified High School District)		9.00	0.05009
	35.34	8,557.00	1.32971
Los Angeles, County of	310.00	3,721.30	1.88292
Maechtlen, Estate of J. J. (Transferred to:	0	301.50	0.15256
City of Glendora		-150.00	-0.07590
Miller Brewing Company)		-151.50	-0.07666
	0	0	0

Party	Diversion Componet Acre-feet	Prescriptive Pumping Component Acre-feet	Pumping Component Share %
Maechtlen, Estate of J. J.	1.49	0	0
Maechtlen, Trust of P. A. (Transferred to:	0.50	100.50	0.05085
City of Glendora		-50.00	-0.02530
Alice B. Phillips, et al)	-0.50	-50.50	-0.02555
	0	0	0
The Metropolitan Water District of Southern California	9.59	165.00	0.08349
Monrovia, City of (Sucessor to:	1,098.00	5,042.22	2.55129
Eckis, Rollin		123.00	0.06221
City of Arcadia)		951.00	0.48119
	1,098.00	6,116.22	3.09472
Monrovia, Nursery Company (Successor to:	239.50	0	0
Azusa Foot-Hill Citrus Co.)	718.50	0	
Phillips, Alice B., et al (Successor to:			
Maechtlen, Trust of P. A.)	0.50	50.50	0.02530
(Transferred to:			
Miller Brewing Company)		-50.00	-0.02530
	0.50	0.50	0.00025
Southern California Water Company (San Dimas Dist.) (Formerly California Cities Water Company) (Successor to:	500.00	3,242.53	1.64076
Namimatsu Farms)		196.00	0.09917
	500.00	3,438.53	1.73984
TOTAL for Exhibit "E"	10,520.92	41,833.75	21.16724

Exhibit "F"

TABLE SHOWING
SPECIAL CATAGORY RIGHTS

PARTY	Nature of Right
The Metropolitan Water District of Southern California	Morris Reservoir Storage and Withdrawal (a) A right to divert, store and use San Gabriel River Water, pursuant to Permit No. 7174. (b) Prior and paramount right to divert 72 acre-feet annually to offset Morris Reservoir evaporation and seepage losses and to provide the water supply necessary for presently existing incidential Morris Dam facilities.
Los Angeles County Flood Control District (Now Los Angeles County Department of Public Works)	Puddingstone Reservoir Prior Prescriptive right to divert water from San Dimas Wash for storage in Puddingstone Reservoir in quantities sufficient to offset annual evaporation and seepage losses of the reservoir at approximate elevation 942.

TABLE SHOWING
NON-CONSUMPTIVE USERS

Party	Nature of Right
Covina Irrigating Company Azusa Valley Water Company Azusa Agricultural Water Co. Azusa Foot-Hill Citrus Co. Monrovia Nursery Company	"Committee-of-Nine" Spreading Right To continue to divert water from the San Gabriel River pursuant to the 1888 Settlement, and to spread in spreading grounds within the Basin all water thus diverted without the right to recapture water in excess of said parties' rights as adjudicated in Exhibit "E".
California-American Water Company (Duarte System)	Spreading Right To continue to divert water from the San Gabriel River pursuant to the 1888 Settlement, and to continue to divert water from Fish Canyon and to spread said waters in its spreading grounds in the Basin without the right to recapture water in excess of said party's rights as adjudicated in Exhibit "E".
City of Glendora	Spreading Right To continue to spread the water of Big and Little Dalton Washes, pursuant to License No. 2592 without the right to recapture water in excess of said party's rights as adjudicated in Exhibit "E".
San Gabriel Valley Protective Association	Spreading Right To continue to spread San Gabriel River water pursuant to License Nos. 9991 and 12,209, without the right to recapture said water.
California Cities Water Company	Spreading Right To continue to spread waters from San Dimas Wash without the right to recapture water in excess of said party's rights as adjudicated in Exhibit "E".
Los Angeles County Flood Control District	Temporary storage of storm flow for regulatory purposes; Spreading and conservation for general benefit in streambeds, reservoirs and spreading grounds without the right to recapture said water. Maintenance and operation of dams and other flood control works.

EXHIBIT "H"

WATERMASTER OPERATING CRITERIA

1. Basin Storage Capacity. The highest water level at the end of a water year during the past 40 years was reached at the Key Well on September 30, 1944 (elevation 316). The State of California, Department of Water Resources, estimates that as of that date, the quantity of fresh water in storage in the Basin was approximately 8,600,000 acre-feet. It is also estimated by said Department that by September 30, 1960, the quantity of fresh water in storage had decreased to approximately 7,900,000 acre-feet (elevation 237) at the Key Well).

The lowest water level at the end of a water year during the past 40 years was reached at the Key Well on September 30, 1965 (elevation 209). It is estimated that the quantity of fresh water in storage in the Basin on that date was approximately 7,700,000 acre-feet.

Thus, the maximum utilization of Basin storage was approximately 900,000 acre-feet, occurring between September 30, 1944, and September 30, 1965 (between elevations 316 and 209 at the Key Well). This is not to say that more than 900,000 acre-feet of storage space below the September 30, 1944 water levels cannot be utilized. However, it demonstrates that pumpers have deepened their wells and lowered their pumps so that such 900,000 acre-feet of storage can be safely and economically utilized.

The storage capacity of the Basin between elevations of 200 and 250 at the Key Well represents a usable volume of approximately 400,000 acre-feet of water.

2. Operating Safe Yield and Spreading. Watermaster in determining Operating Safe Yield and the importation of Replacement Water shall be guided by water level elevations in the Basin. He shall give recognition to, and base his operations on, the following general objectives insofar as practicable:

(a) The replenishment of ground water from sources of supplemental water should not cause excessively high levels of ground water and such replenishment should not cause undue waste of local water supplies.

(b) Certain areas within the Basin are not at the present time capable of being recharged with supplemental water. Efforts should be made to provide protection to such areas from excessive ground water lowering either through the "in lieu" provisions of the Judgment or by other means.

(c) Watermaster shall consider and evaluate the long-term consequences on ground water quality, as well as quantity, in determining and establishing Operating Safe Yield. Recognition shall be given to the enhancement of ground water quality insofar as practicable, especially in the area immediately upstream of Whittier Narrows where degradation of water quality may occur when water levels at the Key Well are maintained at or below elevation 200.

(d) Watermaster shall take into consideration the comparative costs of supplemental and Make-up Water in determining the savings on a present value basis of temporary or permanent lowering or raising of water levels and other economic data and analyses indicating both the short-term and long-term

propriety of adjusting Operating Safe Yield in order to derive optimum water levels during any period. Watermaster shall utilize the provisions in the Long Beach Judgment which will result in the least cost of delivering Make-up Water.

3. Replacement Water -- Sources and Recharge Criteria. The following criteria shall control purchase of Replacement Water and Recharge of the Basin by Watermaster.

(a) Responsible Agency From Which to Purchase. Watermaster, in determining the Responsible Agency from which to purchase supplemental water for replacement purposes, shall be governed by the following:

(1) Place of Use of Water which is used primarily within the Basin or by cities within San Gabriel District in areas within or outside the Basin shall control in determining the Responsible Agency. For purposes of this subparagraph, water supplied through a municipal water system which lies chiefly within the Basin shall be deemed entirely used within the Basin; and

(2) Place of production of water shall control in determining the Responsible Agency as to water exported from the Basin, except as to use within San Gabriel District.

Any Responsible Agency may, at the request of Watermaster, waive its right to act as the source for such supplemental water, in which case Watermaster shall be free to purchase such water from the remaining Responsible Agencies which are the most beneficial and appropriate sources; provided, however, that a Responsible Agency shall not

authorize any sale of water in violation of the California Constitution.

(b) Water Quality. Watermaster shall purchase the best quality of supplemental water available for replenishment of the Basin, pursuant to subsection (a) hereof.

(c) Reclaimed Water. It is recognized that the technology and economic and physical necessity for utilization of reclaimed water is increasing. The purchase of reclaimed water in accordance with the Long Beach Judgment to satisfy the Make-up Obligation is expressly authorized. At the same time, water quality problems involved in the reuse of water within the Basin pose serious questions of increased costs and other problems to the pumpers, their customers and all water users. Accordingly, Watermaster is authorized to gather information, make and review studies, and make recommendations on the feasibility of the use of reclaimed water for replacement purposes; provided that no reclaimed water shall be recharged in the Basin by Watermaster without the prior approval of the court, after notice to all parties and hearing thereon.

4. Replacement Assessment Rates. The Replacement Assessment rates shall be in an amount calculated to allow Watermaster to purchase one acre-foot of supplemental water for each acre-foot of excess Production to which such Assessment applies.

EXHIBIT "J"

PUENTE NARROWS AGREEMENT

THIS AGREEMENT is made and entered into as of the 8th day of May, 1972, by and between PUENTE BASIN WATER AGENCY, herein called "Puente Agency", and UPPER SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT, herein called "Upper District".

A. RECITALS

1. Puente Agency. Puente Agency is a joint powers agency composed of Walnut Valley Water District, herein called "Walnut District", and Rowland Area County Water District, herein called "Rowland District". Puente Agency is formed for the purpose of developing and implementing a ground water basin management program for Puente Basin. Pursuant to said purpose, said Agency is acting as a representative of its member districts and of the water users and water right claimants therein in the defense and maintenance of their water rights within Puente Basin.

2. Upper District. Upper District is a municipal water district overlying a major portion of the Main San Gabriel Basin. Upper District is plaintiff in the San Gabriel Basin Case, wherein it seeks to adjudicate rights and implement a basin management plan for the Main San Gabriel Basin.

3. Puente Basin is a ground water basin tributary to the Main San Gabriel Basin. Said area was included within the scope of the San Gabriel Basin Case and substantially

all water rights claimants within Puente Basin were joined as defendants therein. The surface contribution to the Main San Gabriel Basin from Puente Basin is by way of the paved flood control channel of San Jose Creek, which passes through Puente Basin from the Pomona Valley area. Subsurface outflow is relatively limited and moves from the Puente Basin to the Main San Gabriel Basin through Puente Narrows.

4. Intent of Agreement. Puente Agency is prepared to assure Upper District that no activity within Puente Basin will hereafter be undertaken which will (1) interfere with surface flows in San Jose Creek, or (2) impair the subsurface flow from Puente Basin to the Main San Gabriel Basin. Walnut District and Rowland District, by operation of law and by express assumption endorsed hereon, assume the covenants of this agreement as a joint and several obligation. Based upon such assurances and the covenants hereinafter contained in support thereof, Upper District consents to the dismissal of all Puente Basin parties from the San Gabriel Basin Case. By reason of said dismissals, Puente Agency will be free to formulate a separate water management program for Puente Basin.

B. DEFINITIONS AND EXHIBITS

5. Definitions. As used in this Agreement, the following terms shall have the meanings herein set forth:

(a) Annual or Year refers to the fiscal year July 1 through June 30.

(b) Base Underflow. The underflow through

Puente Narrows which Puente Agency agrees to maintain, and on which accrued debits and credits shall be calculated.

(c) Make-up Payment. Make-up payments shall be an amount of money payable to the Watermaster appointed in the San Gabriel Basin Case, sufficient to allow said Watermaster to purchase replacement water on account of any accumulated deficit as provided in Paragraph 9 hereof.

(d) Puente Narrows. The subsurface geologic constriction at the downstream boundary of Puente Basin, located as shown on Appendix "B".

(e) Main San Gabriel Basin, the ground water basin shown and defined as such in Exhibit "A" to the Judgment in the San Gabriel Basin Case.

(f) San Gabriel Basin Case. Upper San Gabriel Valley Municipal Water District v. City of Alhambra, et al., L. A. Sup. Ct. No. 924128, filed January 2, 1968.

6. Appendices. Attached hereto and by this reference made a part hereof are the following appendices:

"A" -- Location Map of Puente Basin, showing major geographic, geologic, and hydrologic features.

"B" -- Map of Cross-Section Through Puente Narrows, showing major physical features and location of key wells.

"C" -- Engineering Criteria, being a description of a method of measurement of subsurface outflow to be utilized for Watermaster purposes.

C. COVENANTS

7. Watermaster. There is hereby created a two member Watermaster service to which each of the parties to this agreement shall select one consulting engineer. The respective representatives on said Watermaster shall serve at the pleasure of the governing body of each appointing party and each party shall bear its own Watermaster expense.

a. Organization. Watermaster shall perform the duties specified herein on an informal basis, by unanimous agreement. In the event the two representatives are unable to agree upon any finding or decision, they shall select a third member to act, pursuant to the applicable laws of the State of California. Thereafter, until said issue is resolved, said three shall sit formally as a board of arbitration. Upon resolution of the issue in dispute, the third member shall cease to function further.

b. Availability of Information. Each party hereto shall, for itself and its residents and water users, use its best efforts to furnish all appropriate information to the Watermaster in order that the required determination can be made.

c. Cooperation With Other Watermasters. Watermaster hereunder shall cooperate and coordinate activities with the Watermasters appointed in the San Gabriel Basin Case and in Long Beach v. San Gabriel Valley Water Company, et al.

d. Determination of Underflow. Watermaster shall annually determine the amount of underflow from Puente Basin to the San Gabriel Basin, pursuant to Engineering Criteria.

e. Perpetual Accounting. Watermaster shall maintain a perpetual account of accumulated base underflow, accumulated subsurface flow, any deficiencies by reason of interference with surface flows, and the offsetting credit for any make-up payments. Said account shall annually show the accumulated credit or debit in the obligation of Puente Agency to Upper District.

f. Report. Watermaster findings shall be incorporated in a brief written report to be filed with the parties and with the Watermaster in the San Gabriel Basin Case. Said report shall contain a statement of the perpetual account heretofore specified.

8. Base Underflow. On the basis of a study and review of historic underflow from Puente Basin to the Main San Gabriel Basin, adjusted for the effect of the paved flood control channel and other relevent considerations, it is

mutually agreed by the parties that the base underflow is and shall be 580 acre feet per year, calculated pursuant to Engineering Criteria.

9. Puente Agency's Obligation. Puente Agency covenants, agrees and assumes the following obligation hereunder:

a. Noninterference with Surface Flow. Neither Puente Agency nor any persons or entities within the corporate boundaries of Walnut District or Rowland District will divert or otherwise interfere with or utilize natural surface runoff now or hereafter flowing in the storm channel of San Jose Creek; provided, however, that this covenant shall not prevent the use, under Watermaster supervision, of said storm channel by the Puente Agency or Walnut District or Rowland District for transmission within Puente Agency of supplemental or reclaimed water owned by said entities and introduced into said channel solely for transmission purposes. In the event any unauthorized use of surface flow in said channel is made contrary to the covenant herein provided, Puente Agency shall compensate Upper District by utilizing any accumulated credit or by make-up payment in the same manner as is provided for deficiencies in subsurface outflow from Puente Basin.

b. Subsurface Outflow. To the extent that

the accumulated subsurface outflow falls below the accumulated base underflow and the result thereof is an accumulated deficit in the Watermaster's annual accounting, Puente Agency agrees to provide make-up payments during the next year in an amount not less than one-third of the accumulated deficit.

c. Purchase of Reclaimed Water. To the extent that Puente Agency or Walnut District or Rowland District may hereafter purchase reclaimed water from the facilities of Sanitation District 21 of Los Angeles County, such purchaser shall use its best efforts to obtain waters originating within San Gabriel River Watershed.

10. Puente Basin Parties Dismissal. In consideration of the assumption of the obligation hereinabove provided by Puente Agency, Upper District consents to entry of dismissals as to all Puente Basin parties in San Gabriel Basin Case. This agreement shall be submitted for specific approval by the Court and a finding that it shall operate as full satisfaction of any and all claims by the parties within Main San Gabriel Basin against Puente Basin parties by reason of historic surface and subsurface flow.

IN WITNESS WHEREOF the parties hereto have caused this Agreement to be executed as of the day and date first above written.

Approved as to form:
CLAYSON, STARK, ROTHROCK & MANN

By _____
Attorneys for Puente Agency

PUENTE BASIN AGENCY

By _____
EDWARD M. BIEDERMAN
President

Approved as to form:

By _____
Attorney for Upper District

UPPER SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT

By _____
President

The foregoing agreement is approved and accepted, and the same is acknowledged as the joint and several obligation of the undersigned.

Approved as to form:

_____
Attorney for Walnut District

WALNUT VALLEY WATER DISTRICT

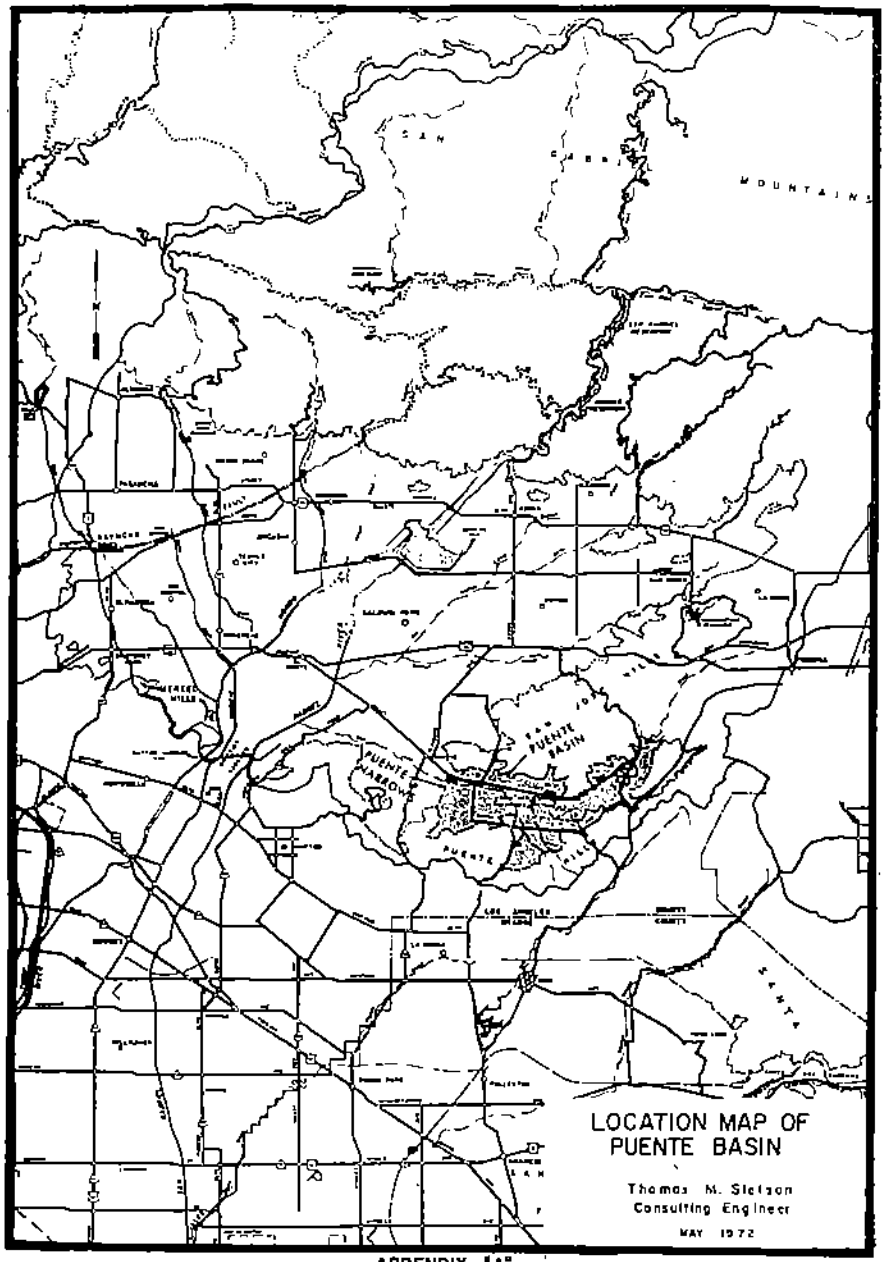
By _____
P. BOURDET
Vice President

Approved as to form:

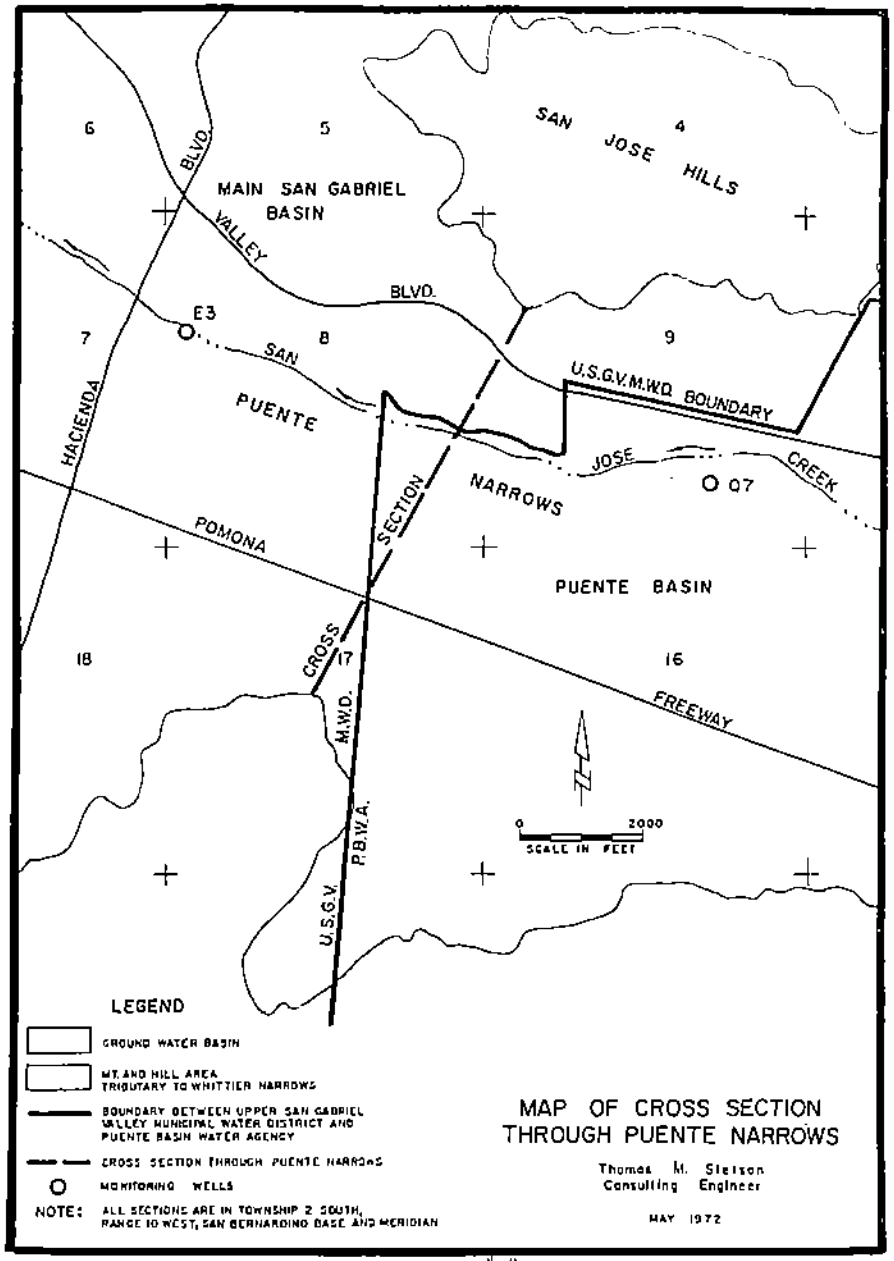
_____
Attorneys for Rowland District

ROWLAND AREA COUNTY WATER DISTRICT

By _____
President
Wm. A. Simmons



APPENDIX "A"
EXHIBIT "J"



APPENDIX "B"
EXHIBIT "J"

ENGINEERING CRITERIA

APPENDIX "C"

1. Monitoring Wells. The wells designated as State Wells No. 2S/10W-9Q7 and 2S/10W-8E3 and Los Angeles County Flood Control District Nos. 3079M and 3048B, respectively, shall be used to measure applicable ground water elevations. In the event either monitoring well should fail or become unrepresentative, a substitute well shall be selected or drilled by Watermaster. The cost of drilling a replacement well shall be the obligation of the Puente Agency.

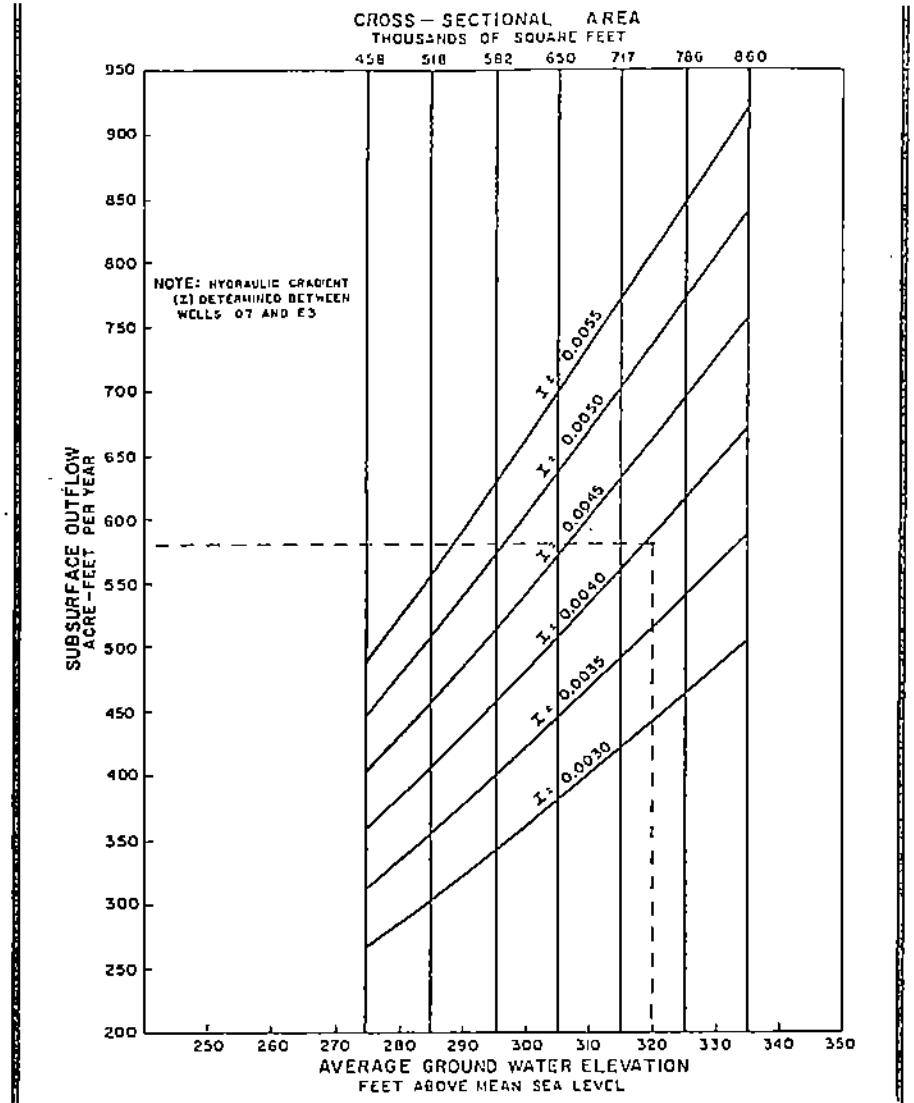
2. Measurement. Each monitoring well shall be measured and the ground water elevation determined semi-annually on or about April 1 and October 1 of each year. Prior to each measurement, the pump shall be turned off for a sufficient period to insure that the water table has recovered to a static or near equilibrium condition.

3. Hydraulic Gradient. The hydraulic gradient, or slope of the water surface through Puente Narrows, shall be calculated between the monitoring wells as the difference in water surface elevation divided by the distance, approximately 9,000 feet, between the wells. The hydraulic gradient shall be determined for the spring and fall and the average hydraulic gradient calculated for the year.

4. Ground Water Elevation at Puente Narrows Cross Section. The ground water elevation at the Puente Narrows

cross section midway between the monitoring wells shall be the average of the ground water elevation at the two wells. This shall be determined for the spring and fall and the average annual ground water elevation calculated for the year.

5. Determination of Underflow. The chart attached is a photo-reduction of a full scale chart on file with the Watermaster. By applying the appropriate average annual hydraulic gradient (I) to the average annual ground water elevation at the Puente Narrows cross section (involving the appropriate cross-sectional area [A]), it is possible to read on the vertical scale the annual acre feet of underflow.



RELATIONSHIP OF AVERAGE GROUND WATER ELEVATION AT PUENTE NARROWS AND APPLICABLE CROSS-SECTIONAL AREA WITH SUBSURFACE OUTFLOW THROUGH PUENTE NARROWS FOR VARIOUS HYDRAULIC GRADIENTS

Thomas M. Stetson
Consulting Engineer
MAY 1972

EXHIBIT "K"

OVERLYING RIGHTS

I. NATURE OF OVERLYING RIGHT

An "Overlying Right" is the right to Produce water from the Main San Gabriel Basin for use on the overlying lands hereinafter described. Such rights are exercisable without quantitative limit only on said overlying land and cannot be separately conveyed or transferred apart therefrom. The exerciser of such right is assessable by Watermaster as provided in Paragraph 21 of the Amended Judgment herein (prior Paragraph 14.5 of the Judgment herein) and is subject to the other provisions of said Paragraph.

II. OVERLYING LANDS (Description)

The overlying lands to which Overlying Rights are appurtenant are described as follows:

"Those portions of Lots 1 and 2 of the lands formerly owned by W.A. Church, in the Rancho San Francisquito, in the City of Irwindale, County of Los Angeles, State of California, as shown on recorder's filed map No. 509, in the office of the County Recorder of said County, lying northeasterly of the northeasterly line and its southeasterly prolongation of Tract 1888, as shown on map recorded in Book 21 page 183 of Maps, in the office of the County Recorder of said County.

"EXCEPT the portions thereof lying northerly and northwesterly of the center line of Arrow Highway described 'Sixth' and the center line of Live Oak Avenue described 'Third' in a final decree of condemnation, a certified copy of which was recorded August 18, 1933 as Instrument No. 354, in Book 12289, Page 277, Official Records.

"ALSO EXCEPT that portion of said land described in the final decree of condemnation entered in Los Angeles County Superior Court Case No. 805008, a certified copy of which was recorded September 21, 1964, as Instrument No. 3730, in Book D-2634, Page 648, Official Records."

III. PRODUCERS ENTITLED TO EXERCISE OVERLYING RIGHTS AND THEIR RESPECTIVE CONSUMPTIVE USE PORTIONS

The persons entitled to exercise Overlying Rights are both the owners of Overlying Rights and persons and entities licensed by such owners to exercise such Overlying Rights. The persons entitled to exercise Overlying Rights and their respective Consumptive Use portions are as follows:

OWNER PRODUCERS	CONSUMPTIVE USE PORTION
BROOKS GIFFORD, SR. BROOKS GIFFORD, JR. PAUL MNOIAN JOHN MGRDICHIAN J. EARL GARRETT	3.5 acre-feet per year
Present User: Nu-Way Industries	
PRODUCERS UNDER LICENSE	
A. WILLIAM C. THOMAS and EVELYN F. THOMAS, husband and wife, and MALCOLM K. GATHERER and JACQUELINE GATHERER, husband and wife, doing business by and through B & B REDI-I-MIX CONCRETE, INC., a corporation	45.6 acre-feet per year
B. PRE-STRESS CRANE RIGGING & TRUCK CO., INC., a corporation	1.0 acre-foot per year
Present Users: Pre-Stress Crane Rigging & Truck Co., Inc., a corporation	
Total	50.1 acre-feet per year

IV. ANNUAL GROSS AMOUNT OF PRODUCTION FROM WHICH CONSUMPTIVE USE PORTIONS WERE DERIVED: 183.65 acre-feet

LIST OF PRODUCERS AND THEIR DESIGNEES
June, 1989

Producer Name	Designee
A	
Adams Ranch Mutual Water Company	Goji Iwakiri
Alhambra, City of	T. E. Shollenberger
Amarillo Mutual Water Company	Ester Guadagnolo
Anderson, Ray	Ray Anderson
Andrade, Macario, et al.	Macario R. Andrade
Arcadia, City of	Eldon Davidson
AZ-Two, Inc.	R. S. Chamberlain
Azusa, City of	William H. Redcay
Azusa Ag. Water Company	Robert E. Talley
Azusa Valley Water Company	Edward Heck
B	
Baldwin Park County Water District (See Valley County Water District)	-
Banks, Gale C.	Gale C. Banks
Base Line Water Company	Everett W. Hughes, Jr.
Beverly Acres Mutual Water User's Assn. (Formerly Beverly Acres Mutual Water Co.)	Eloise A. Moore
Burbank Development Company	Darrell A. Wright
C	
Cadway, Inc.	P. Geoffrey Nunn
California-American Water Company (San Marino System)	Andrew A. Krueger
California-American Water Company (Duarte System)	Andrew A. Krueger
California Country Club	Henri F. Pellissier
California Domestic Water Company	P. Geoffrey Nunn
Cedar Avenue Mutual Water Company	Austin L. Knapp

Producer Name	Designee
Champion Mutual Water Company	Margaret Bauwens
Chevron, USA, Inc.	Ms. Margo Bart
Clayton Manufacturing Company	Don Jones
Conrock Company	Gene R.Block
Corcoran Brothers	Ray Corcoran
County Sanitation District No. 18	Charles W. Curry
Covell, et al.	Darr Jobe
Covell, Ralph	Ralph Covell
Covina, City of	Wayne B. Dowdey
Covina Irrigating Company	William R. Temple
Crevolin, A. J.	A. J. Crevolin
Crown City Plating Company	N. G. Gardner
D	
Davidson Optronics, Inc.	James McBride
Dawes, Mary Kay	Mary Kay Dawes
Del Rio Mutual Water Company	Gonzalo Galindo
Driftwood Dairy	James E. Dolan
Dunning, George	George Dunning
E	
East Pasadena Water Company	Robert D. Mraz
El Monte, City of	Robert J. Pinniger
El Monte Cemetery Association	Linn E. Magoffin
F	
Faix, Ltd.	Henri F. Pellissier
G	
Glendora, City of	Arthur E. Cook
Green, Walter	Dr. Walter Green
H	
Hansen, Alice	Alice Hansen

Producer Name	Designee
Hartley, David	David Hartley
Hemlock Mutual Water Company	Bud Selander
Hunter, Lloyd F.	Lloyd F. Hunter
I	
Industry Waterworks System, City of	Mary L. Jaureguy
K	
Kiyan Farm Kiyan, Hideo	Mrs. Hideo Kiyan
Kirklen Family Trust	Dawn Kirklen
Knight, Kathryn H.	William J. Knight
L	
Landeros, John	John Landeros
La Puente Valley County Water District	Mary L. Jaureguy
La Verne, City of	N. Kathleen Hamm
Livingston-Graham	Gary O. Tompkins
Los Angeles, County of	Robert L. Larson
Loucks, David	David Loucks
M	
Maddock, A. G.	Ranney Draper, Esq.
Maechtlen, Trust of J. J.	Jack F. Maechtlen
Maple Water Company, Inc.	Charles King
Martinez, Francis Mercy	Francis Mercy Martinez
Metropolitan Water District of Southern California	Fred Vendig, Esq.
Miller Brewing Company	Dennis O. Puffer
Mnoian, Paul, et al.	Mal Gatherer
Monrovia, City of	Robert K. Sandwick
Monrovia Nursery	Miles R. Rosedale
Monterey Park, City of	Nels Palm

Producer Name	Designee
N	
Nick Tomovich & Sons	Nick Tomovich
O	
Owl Rock Products Company	Peter L. Chiu
P	
Phillips, Alice B., et al.	Jack F. Maechtlen
Pico County Water District	Robert P. Fuller
Polopolus, et al.	Christine Chronis
R	
Rados Brothers	Alexander S. Rados
Richwood Mutual Water Company	Bonnie Pool
Rincon Ditch Company	K. E. Nungesser
Rincon Irrigation Company	K. E. Nungesser
Rose Hills Memorial Park Association	Allan D. Smith
Rosemead Development, Ltd.	John W. Lloyd
Rurban Homes Mutual Water Company	George W. Bucey
Ruth, Roy	Roy Ruth
S	
San Dimas - La Verne Recreational Facilities Authority	R. F. Griszka
San Gabriel Country Club	Fran Wolfe
San Gabriel County Water District	Philip G. Crocker
San Gabriel Valley Municipal Water District	Bob Stallings
San Gabriel Valley Water Company	Robert H. Nicholson, Jr.
Sloan Ranches	Larry R. Sloan
Sonoco Products Company	Elaine Corboy
South Covina Water Service	Anton C. Garnier
Southern California Edison Company	S. R. Shermoen

Producer Name	Designee
Southern California Water Company -San Dimas District	J. F. Young
Southern California Water Company -San Gabriel Valley District	J. F. Young
South Pasadena, City of	John Bernardi
Southwestern Portland Cement Company	Dale W. Heineck
Standard Oil Company of California	John A. Wild
Sterling Mutual Water Company	Bennie L. Prowett
Suburban Water Systems	Anton C. Garnier
Sully-Miller Contracting Company	R. R. Munro
Sunny Slope Water Company	Michael J. Hart
T	
Taylor Herb Garden	Paul S. Taylor
Texaco, Inc.	E. O. Wakefield
Tyler Nursery	James K. Mitsumori, Esq.
U	
United Concrete Pipe Corporation	Doyle H. Wadley
United Rock Products Corporation	William S. Capps, Esq.
V	
Valencia Heights Water Company	Herman Weskamp
Valley County Water District (Formerly Baldwin Park County Water District)	Stanley D. Yarbrough
Valley View Mutual Water Company	Robert T. Navarre
Via, H., Trust of	Marverna Parton
W	
Ward Duck Company	Richard J. Woodland
W. E. Hall Company	Thomas S. Bunn, Jr., Esq.
White, June G., Trustee	June G. Lovelady
Whittier, City of	Neil Hudson
Wilmott, Erma M.	Erma M. Wilmott

Exhibit "M"

WATERMASTER MEMBERS

FOR CALENDAR YEAR 1973

ROBERT T. BALCH (Producer Member), Chairman

LINN E. MAGOFFIN (Producer Member), Vice Chairman

RICHARD L. ROWLAND (Producer Member), Secretary

BOYD KERN (Public Member), Treasurer

WALKER HANNON (Producer Member)

HOWARD H. HAWKINS (Public Member)

M. E. MOSLEY (Producer Member)

CONRAD T. REIBOLD (Public Member)

HARRY C. WILLS (Producer Member)

STAFF

Carl Fossette, Assistant Secretary-Assistant Treasurer
Ralph B. Helm, Attorney
Thomas M. Stetson, Engineer

FOR CALENDAR YEAR 1974

ROBERT T. BALCH (Producer Member), Chairman

LINN E. MAGOFFIN (Producer Member), Vice Chairman

RICHARD L. ROWLAND (Producer Member), Secretary

BOYD KERN (Public Member), Treasurer

WALKER HANNON (Producer Member)

BURTON E. JONES (Public Member)

M. E. MOSLEY (Producer Member)

CONRAD T. REIBOLD (Public Member)

HARRY C. WILLS (Producer Member)

STAFF

Carl Fossette, Assistant Secretary-Assistant Treasurer
Ralph B. Helm, Attorney
Thomas M. Stetson, Engineer

FOR CALENDAR YEAR 1975

ROBERT T. BALCH (Producer Member), Chairman

LINN E. MAGOFFIN (Producer Member), Vice Chairman

HARRY C. WILLS (Producer Member), Secretary

BOYD KERN (Public Member), Treasurer

WALKER HANNON (Producer Member)

BURTON E. JONES (Public Member)

D. J. LAUGHLIN (Producer Member)

M. E. MOSLEY (Producer Member)

CONRAD T. REIBOLD (Public Member)

STAFF

Carl Fossette, Assistant Secretary-Assistant Treasurer
Ralph B. Helm, Attorney
Thomas M. Stetson, Engineer

FOR CALENDAR YEAR 1976

ROBERT T. BALCH (Producer Member), Chairman

LINN E. MAGOFFIN (Producer Member), Vice Chairman

HARRY C. WILLS (Producer Member), Secretary

BOYD KERN (Public Member), Treasurer

WALKER HANNON (Producer Member)

BURTON E. JONES (Public Member)

D. J. LAUGHLIN (Producer Member)

M. E. MOSLEY (Producer Member)

CONRAD T. REIBOLD (Public Member)

STAFF

Jane M. Bray, Assistant Secretary-Assistant Treasurer
Ralph B. Helm, Attorney
Thomas M. Stetson, Engineer

FOR CALENDAR YEAR 1977

ROBERT T. BALCH (Producer Member), Chairman

LINN E. MAGOFFIN (Producer Member), Vice Chairman

HARRY C. WILLS (Producer Member), Secretary

CONRAD T. REIBOLD (Public Member), Treasurer

WALKER HANNON (Producer Member)

BURTON E. JONES (Public Member)

BOYD KERN (Public Member)

D. J. LAUGHLIN (Producer Member)

R. H. NICHOLSON, JR. (Producer Member)

STAFF

Jane M. Bray, Assistant Secretary-Assistant Treasurer)
Ralph B. Helm, Attorney
Thomas M. Stetson, Engineer

FOR CALENDAR YEAR 1978

ROBERT T. BALCH (Producer Member), Chairman

LINN E. MAGOFFIN (Producer Member), Vice Chairman

D. J. LAUGHLIN (Producer Member), Secretary

CONRAD T. REIBOLD (Public Member), Treasurer

WALKER HANNON (Producer Member)

BURTON E. JONES (Public Member)

L. E. MOELLER (Producer Member)

R. H. NICHOLSON, JR. (Producer Member)

WILLIAM M. WHITESIDE (Public Member)

STAFF

Jane M. Bray, Assistant Secretary-Assistant Treasurer
Ralph B. Helm, Attorney
Thomas M. Stetson, Engineer

FOR CALENDAR YEAR 1979

LINN E. MAGOFFIN (Producer Member), Chairman

D. J. LAUGHLIN (Producer Member), Vice Chairman

R. H. NICHOLSON, JR. (Producer Member), Secretary

CONRAD T. REIBOLD (Public Member), Treasurer

WALKER HANNON (Producer Member)

BURTON E. JONES (Public Member)

L. E. MOELLER (Producer Member)

WILLIAM M. WHITESIDE (Public Member)

STAFF

Jane M. Bray, Assistant Secretary-Assistant Treasurer
Ralph B. Helm, Attorney
Thomas M. Stetson, Engineer

FOR CALENDAR YEAR 1980

LINN E. MAGOFFIN (Producer Member), Chairman

R. H. NICHOLSON, JR. (Producer Member), Vice Chairman

WILLIAM M. WHITESIDE (Pulic Member), Secretary

CONRAD T. REIBOLD (Public Member), Treasurer

ROBERT T. BALCH (Producer Member)

ROBERT G. BERLIEN (Producer Member)

ANTON C. GARNIER (Producer Member)

TRAVIS L. MANNING (Public Member)

L. E. MOELLER (Producer Member)

STAFF

Jane M. Bray, Assistant Secretary-Assistant Treasurer
Ralph B. Helm, Attorney
Thomas M. Stetson, Engineer

FOR CALENDAR YEAR 1981

LINN E. MAGOFFIN (Producer Member), Chairman

R. H. NICHOLSON, JR. (Producer Member), Vice Chairman

WILLIAM M. WHITESIDE (Public Member), Secretary

CONRAD T. REIBOLD (Public Member), Treasurer

ROBERT T. BALCH (Producer Member)

ROBERT G. BERLIEN (Producer Member)

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FOR CALENDAR YEAR 1982

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ALFRED F. WITTIG (Public Member)

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Thomas M. Stetson, Engineer

FOR CALENDAR YEAR 1983

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FOR CALENDAR YEAR 1984

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Thomas M. Stetson, Engineer

FOR CALENDAR YEAR 1985

LINN E. MAGOFFIN (Producer Member), Chairman

R. H. NICHOLSON, JR. (Producer Member), Vice Chairman

ROBERT G. BERLIEN (Producer Member), Secretary

CONRAD T. REIBOLD (Public Member), Treasurer

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Ralph B. Helm, Attorney
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FOR CALENDAR YEAR 1986

LINN E. MAGOFFIN (Producer Member), Chairman

R. H. NICHOLSON, JR. (Producer Member), Vice Chairman

ROBERT G. BERLIEN (Producer Member), Secretary

CONRAD T. REIBOLD (Public Member), Treasurer

ROBERT T. BALCH (Producer Member)

DONALD F. CLARK (Public Member)

L. E. MOELLER (Producer Member)

REGINOLD A. STONE (Producer Member)

ALFRED R. WITTIG (Public Member)

STAFF

Jane M. Bray, Assistant Secretary-Assistant Treasurer
Ralph B. Helm, Attorney
Thomas M. Stetson, Engineer

FOR CALENDAR YEAR 1987

LINN E. MAGOFFIN (Producer Member), Chairman

REGINALD A. STONE (Producer Member), Vice Chairman

L. E. MOELLER (Producer Member), Secretary

ALFRED R. WITTIG (Public Member), Treasurer

ROBERT T. BALCH (Producer Member)

GERALD J. BLACK (Producer Member)

DONALD F. CLARK (Public Member)

EDWARD R. HECK (Producer Member)

JOHN E. MAULDING (Public Member)

STAFF

Robert G. Berlien, Assistant Secretary-Assistant Treasurer
Ralph B. Helm, Attorney
Thomas M. Stetson, Engineer

FOR CALENDAR YEAR 1988

LINN E. MAGOFFIN (Producer Member), Chairman

REGINALD A. STONE (Producer Member), Vice Chairman

L. E. MOELLER (Producer Member), Secretary

ALFRED R. WITTIG (Public Member), Treasurer

ROBERT T. BALCH (Producer Member)

GERALD J. BLACK (Producer Member)

DONALD F. CLARK (Public Member)

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FOR CALENDAR YEAR 1989

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GERALD G. BLACK (Producer Member), Secretary

ALFRED R. WITTIG (Public Member), Treasurer

ROBERT T. BALCH (Producer Member) *

DONALD F. CLARK (Public Member)

EDWARD R. HECK (Producer Member)

BURTON E. JONES (Public Member)

NELS PALM (Producer Member) **

THOMAS E. SCHOLLENBERGER (Producer Member)

STAFF

Robert G. Berlien, Assistant Secretary-Assistant Treasurer
Ralph B. Helm, Attorney
Thomas M. Stetson, Engineer

* DECEASED APRIL 25, 1989

** Appointed August 24, 1989, for the balance of the calendar year term, to replace deceased member, Robert T. Balch.

APPENDIX B

Main San Gabriel Basin - Groundwater Basin Description

Location of the Main San Gabriel Basin

The San Gabriel Valley is located in southeastern Los Angeles County and is bounded on the north by the San Gabriel Mountains, on the west by the San Rafael and Merced Hills, on the south by the Puente Hills and the San Jose Hills, and on the east by a low divide between the San Gabriel River system and Upper Santa Ana River system. The San Gabriel River, and its distributary, the Rio Hondo, drain an area of about 490 square miles upstream of Whittier Narrows. Whittier Narrows is a low gap between the Merced and Puente Hills, just northwest of the City of Whittier, through which the San Gabriel River and the Rio Hondo flow to the coastal plain of Los Angeles County. Whittier Narrows is a natural topographic divide and a subsurface restriction to the movement of ground water between the Main San Gabriel Basin and the Coastal Plain. Of the approximate 490 square miles of drainage area upstream of Whittier Narrows, about 167 square miles are valley lands and about 323 square miles are mountains and foothills.

The Main San Gabriel Basin (Basin) includes essentially the entire valley floor of San Gabriel Valley with the exception of the Raymond Basin and Puente Basin. The boundaries of the Basin are the Raymond Basin on the northwest, the base of the San Gabriel Mountains on the north, the groundwater divide between San Dimas and La Verne and the lower boundary of the Puente Basin on the east, and Whittier Narrows on the southwest.

The Basin is a large groundwater basin replenished by stream runoff from the adjacent mountains and hills, by rainfall directly on the surface of the valley floor, subsurface inflow from Raymond Basin and Puente Basin, and by return flow from water applied for overlying uses. Additionally, the Basin is replenished with imported water. The Basin serves as a natural storage reservoir, transmission system and filtering medium for wells constructed therein.

There are three municipal water districts overlying and partially overlying the Basin. The three districts are Upper San Gabriel Valley Municipal Water District (USGVMWD),

San Gabriel Valley Municipal Water District (SGVMWD) and Three Valleys Municipal Water District (TVMWD).

Sources of Water Supply to Producers

Water producers within the Basin obtain their water supplies from a combination of groundwater production, diversion of surface runoff from the San Gabriel River system and/or purchase of imported water. The following sections identify and describe the various water resources available to producers.

The Main San Gabriel Basin Judgment[1] (Judgment) was entered on January 4, 1973 (See Appendix D). The Judgment is administered by a nine-member Court-appointed board -- six members are nominated by water producers in the Basin and three are public members with two nominated by water producers in the Basin and three are public members with two nominated by USGVMWD and one by SGVMWD. The board is called the Main San Gabriel Basin Watermaster (Watermaster). The Watermaster files a report on Basin operations with the Court. The Fiscal Year 2016-17 Annual Report of the Main San Gabriel Basin Watermaster was filed on November 1, 2017. The Watermaster operates on a fiscal year basis, July 1 to June 30. Selected provisions of the Basin Judgment are summarized below.

The adjudication included the relevant watershed of the Basin because surface water diversions from tributary streams affect the safe yield of the Basin. The rights adjudicated include: (1) Prescriptive Pumping Rights (groundwater only); (2) Base Annual Diversion Rights for surface diversions by those parties who do not also own prescriptive pumping rights; (3) Integrated Production Rights for those producers who hold both Diversion Rights and Prescriptive Pumping Rights enabling the designation of any portion of the annual combined production as surface diversion or groundwater production; (4) Special Category Rights, for storage of water in Morris and

[1]Upper San Gabriel Valley Municipal Water District v. City of Alhambra, et al., Case No. 924128, Los Angeles County.

Puddingstone Reservoirs; (5) Non-Consumptive Use Rights mainly for temporary storage of storm flows and for water spreading operations; and (6) Overlying Consumptive Use Rights.

Each producer must report water production to Watermaster at the end of each calendar quarter. All production is metered. Watermaster tests meters at least once every two years.

Groundwater

The prescriptive pumping rights in the Basin were adjudicated on the basis of mutual prescription resulting in a specific quantity, in acre-feet, for each producer. Such rights were then converted to a pumper's share, expressed in percent of the aggregate of all prescriptive rights. Each year the producer is allowed to extract, free of Replacement Water assessment, the proportional share (pumper's share) of the Operating Safe Yield. Any producer can extract all the water required for beneficial use. If the extraction is less than the producer's pumper's share, the unused portion of the right in a given fiscal year may be carried over for one fiscal year. The first water produced in the succeeding fiscal year is deemed to be such carried over right. The portion of such extraction, which exceeds the sum of the producer's share of Operating Safe Yield, or any carry over rights or leased water rights, is assessed at a rate (Replacement Water assessment), which will purchase one acre-foot of Supplemental Water for each acre-foot of excess production.

Operating Safe Yield is the annual quantity of groundwater, which can be produced from the Basin without obligation for replacement with supplemental water (imported water). The quantity of adjudicated water rights of each producer is used to determine each producer's share of the Operating Safe Yield each year.

In May of each year Watermaster establishes the Operating Safe Yield for the ensuing fiscal year. This is done on the basis of, among other things, groundwater storage

conditions, seasonal rainfall and local water recharge, and water stored in local surface reservoirs. In order to provide sufficient storage capacity in the Basin to capture as much of the local water as practicable, the Amended Judgment provides that supplemental water will be spread, insofar as practicable, to maintain that elevation above 200 feet.

If Basin storage is low, as indicated by the Key Well elevation, Operating Safe Yield is usually lowered so that more Replacement Water can be purchased to increase Basin storage. If Basin storage is relatively high, Operating Safe Yield is usually increased so that Replacement Water is reduced and Basin storage will be beneficially used.

The total fresh water storage capacity of the Basin is estimated to be about 8.7 million acre-feet. Of that, only the top 125 feet of storage, or about 1,000,000 acre-feet is considered to have been used in historic Basin operations. The change in groundwater elevation at the Baldwin Park Key Well (Key Well) is representative of changes in groundwater storage in the Basin. One foot of elevation change at the Key Well is roughly the equivalent of about 8,000 acre-feet of storage. The historic high groundwater elevation was recorded at approximately 329 feet in April 1916, while the historic low was recorded in September 2016 at approximately 172 feet. The Key Well hydrograph shown on Figure 1 (Annual Report) illustrates the cyclic nature of basin recharge and depletion. The hydrograph also illustrates the dramatic recharge capability of the Basin during wet periods.

Figure 1 graphically shows that since the adjudication, water was withdrawn from storage in the Main Basin between 1969 and 1977, and again between 1983 and 1991. Each time the Basin was rapidly recharged by above-average rainfall and recharge of storm water runoff.

The historic production from the Basin, including surface diversions, which are described below, along with water levels at the Key Well and Operating Safe Yield are shown on Table A. The historic low water level, prior to June 2016, was recorded

TABLE A

MAIN SAN GABRIEL BASIN ANNUAL OPERATING SAFE YIELD, PRODUCTION RIGHTS, WATER PRODUCTION AND REPLACEMENT WATER REQUIREMENTS (ACRE-FEET)

FISCAL YEAR	KEY WELL ELEVATION IN FEET 1/	OPERATING SAFE YIELD	CARRY OVER RIGHTS FROM PREVIOUS YEAR	LOST CARRY OVER RIGHTS	PRODUCTION RIGHTS	WATER PRODUCTION	REPLACEMENT WATER REQUIREMENT
1973-74	247.4	226,800	--	0.00	238,132.94	235,460.40	14,518.98
1974-75	238.4	210,000	17,191.52	203.36	237,913.46	225,221.86	8,421.93
1975-76	234.8	200,000	20,908.91	131.06	231,391.95	242,246.36	24,744.88
1976-77	221.1	150,000	13,759.41	861.12	174,193.45	212,995.30	48,650.71
1977-78	211.4	150,000	9,980.67	1,198.54	170,473.30	198,257.23	36,818.25
1978-79	270.4	170,000	8,950.43	78.11	189,439.67	218,405.64	34,404.83
1979-80	266.6	220,000	6,745.88	81.54	237,226.13	226,279.89	9,896.39
1980-81	282.4	230,000	21,960.87	202.89	262,445.19	233,963.01	5,477.08
1981-82	252.4	210,000	35,642.01	380.30	255,281.37	223,245.24	10,582.35
1982-83	245.5	200,000	43,261.87	304.02	253,049.93	212,205.73	3,293.23
1983-84	292.7	230,000	45,378.26	80.10	287,394.98	238,586.29	2,151.85
1984-85	267.1	210,000	51,594.26	344.48	272,050.11	244,835.13	12,475.69
1985-86	245.8	190,000	40,395.40	198.50	240,319.81	248,824.38	33,774.82
1986-87	250.8	200,000	25,403.49	106.93	235,923.93	256,117.22	41,828.86
1987-88	236.5	190,000	22,457.73	143.63	222,985.31	251,852.84	51,989.89
1988-89	224.0	180,000	21,710.19	61.61	214,810.57	257,421.07	59,384.99
1989-90	219.8	180,000	19,741.33	282.28	210,268.35	253,851.86	62,582.49
1990-91	206.5	170,000	17,837.99	387.33	199,467.55	234,825.54	41,232.39
1991-92	200.3	140,000	18,796.02	345.83	169,575.74	223,690.83	31,214.19
1992-93	236.9	180,000	13,478.79	189.05	204,009.40	239,155.14	15,858.66
1993-94	267.8	220,000	31,718.29	462.81	262,029.85	246,830.55	8,915.59
1994-95	248.8	200,000	50,290.41	1,065.79	260,802.71	246,657.49	30,194.77
1995-96	269.0	220,000	44,262.41	737.28	274,608.47	272,100.40	32,526.05
1996-97	248.9	210,000	35,484.68	863.84	256,011.19	282,785.85	55,236.24
1997-98	241.3	220,000	28,965.55	704.70	263,725.27	257,431.98	26,362.42
1998-99	267.8	230,000	34,016.10	124.28	277,282.73	268,505.37	30,499.32
1999-00	244.8	220,000	40,633.83	592.51	274,824.14	282,195.44	39,749.83
2000-01	228.5	220,000	33,774.80	570.83	267,126.29	274,204.43	38,317.35
2001-02	220.1	210,000	32,015.15	532.59	258,992.70	267,767.07	40,773.50
2002-03	211.6	190,000	32,833.12	159.50	240,450.90	240,509.16	38,423.61
2003-04	204.1	170,000	38,274.70	79.24	224,691.75	255,869.80	51,416.73
2004-05	248.4	170,000	24,549.23	53.76	219,049.64	250,185.00	41,043.83
2005-06	249.7	240,000	17,402.45	156.28	268,418.02	262,623.02	12,065.12
2006-07	220.5	240,000	27,862.73	90.80	278,386.20	287,293.69	20,048.99
2007-08	202.7	210,000	29,374.42	182.17	249,433.95	261,194.03	28,777.98
2008-09	195.6	180,000	33,902.42	778.21	224,028.56	253,167.52	26,473.24
2009-10	204.2	170,000	28,729.17	236.31	210,117.25	240,270.06	35,129.38
2010-11	233.5	170,000	20,695.69	167.70	201,220.31	228,779.73	33,084.38
2011-12	226.4	210,000	21,657.47	166.96	242,181.86	239,388.04	19,685.04
2012-13	202.8	200,000	44,143.15	268.13	254,314.47	245,582.04	5,972.15
2013-14	187.8	180,000	42,864.86	377.39	233,389.45	243,536.31	3,779.32
2014-15	177.5	150,000	36,753.33	419.84	197,280.18	208,339.16	12,319.13
2015-16	174.0	150,000	35,226.32	284.47	195,752.95	182,826.49	6,909.20
2016-17	179.4	150,000	39,299.44	285.56	199,994.06	197,243.28	7,526.21
44-YEAR AVERAGE:		194,700	29,302.80	347.48	235,010.59	240,084.45	27,150.63

1/ As of July 1

in September 2016 at 172.2 feet. Although Watermaster reduced the Operating Safe Yield for fiscal year 2016-17 to 150,000 acre-feet, it was estimated that approximately 7.3 million AF of groundwater remained in storage. In addition there was no limit on the quantity of water that could be pumped from the Basin.

Under the Judgment there are three basic annual assessments levied on water production. These assessments are: (1) an Administration Assessment, levied on all water production to pay for the administration of the Judgment; (2) a Make-up Water Assessment, levied on all water production which does not bare a Replacement Water Assessment, to pay the cost of the Make-up Obligation under the Long Beach Judgment; and (3) a Replacement Water Assessment, levied on all water produced in excess of each producer's share of the operating safe yield and other rights he may have. Replacement water assessments are used to purchase supplemental water to replace the excess water produced. In addition, since fiscal year 1989-90, a special administration assessment has been levied to assist the City of Alhambra with provisions of the Cooperative Water Exchange Agreement.

The ownership or use of any adjudicated water right may be transferred, assigned, licensed or leased by the owner to other parties to the Judgment after appropriate notice to and approval by Watermaster. There are occasional sales of water rights. Leasing of water rights occurs frequently.

Another unique feature of the Judgment is a provision allowing cyclic storage of imported water in the Basin. The Watermaster may enter into cyclic storage agreements whereby supplemental water may be stored in the Basin for subsequent recovery by the storing entity as supplemental water. Any party may submit an application to Watermaster for a cyclic storage agreement as noted in Section 26 of the Watermaster's Rules and Regulations. When reviewing such applications, the Watermaster will consider the operation of the Basin under the physical solution provisions of the Main Basin Judgment. In general, Watermaster should consider available storage capacity in the Basin to mitigate the potential loss of local water due to

cyclic storage of supplemental water. Also, Watermaster should consider the cumulative impact of all cyclic storage accounts in the Basin.

Water stored under cyclic storage agreements can be utilized only for the purpose of supplying replacement water when requested by Watermaster. Such stored water is assumed to float on top of the native water in the Basin. Any loss of stored water either directly or indirectly is deemed first to be water from the cyclic storage accounts. To date, there has been no such loss of cyclic stored water.

San Gabriel River

Some parties to the Judgment elected to be treated as integrated producers. Integrated production rights are comprised of (1) a fixed diversion component based upon historic diversions for direct use; and (2) a prescriptive pumping right component based upon pumping during the period 1953 through 1967 that may vary annually with the Operating Safe Yield. The gross quantity of the total integrated production right in any fiscal year may be exercised at the sole discretion of each integrated producer by either diversion of surface water or pumping groundwater or any combination thereof. As is the case with prescriptive pumping rights, the prescriptive pumping component and the corresponding pumper's share is affected by the annual determination of Operating Safe Yield.

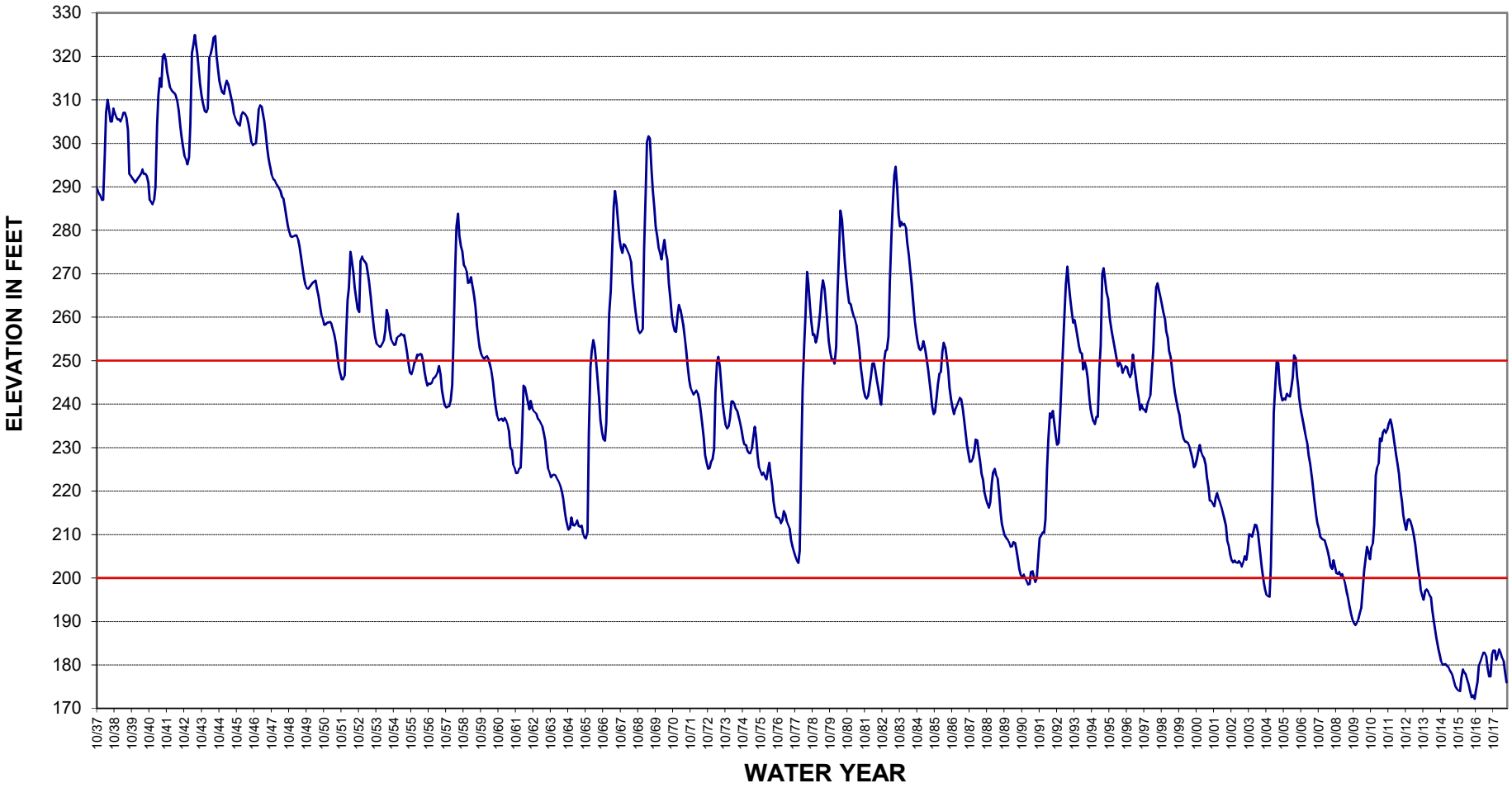
Just as with groundwater, there is no institutional limit on the quantity of San Gabriel River water that can be diverted for use. Whenever an integrated producer exceeds its total water rights it will be levied a Replacement Water assessment, along with other applicable assessments, similar to groundwater pumpers.

Groundwater Recharge

The Main San Gabriel Basin has a fresh water storage capacity of about 8.7 million acre-feet, of which the top 125 feet of storage, or about 1,000,000 acre-feet has been used for historic Basin operations. Local runoff is stored in a series of reservoirs operated by the Los Angeles County Department of Public Works and diverted into spreading grounds to replenish the groundwater supply. Figure 1 indicates that groundwater recharge occurs almost every year and is exhibited as increasing water levels. High rainfall years can be identified on Figure 1 as increases in the groundwater level of 30 feet or more in one year.

In addition to groundwater replenishment with local storm runoff, the Watermaster maintains records of each producer's water rights and annual production. Although there is no limit on the quantity of water that may be produced, production in excess of a water right is subject to a Replacement Water assessment. Watermaster uses funds collected from producers' overproduction to purchase imported water from municipal water districts. USGVMWD and TVMWD obtain their water from MWD. SGVMWD has its own contract for SWP water. Watermaster coordinates purchase and delivery of imported water to replenish the ground water basin, thus offsetting the producers' overproduction and making the Basin whole.

BALDWIN PARK KEY WELL MEASURED WATER SURFACE ELEVATION



*Estimated as of July 31, 2018

STETSON ENGINEERS INC.
Covina San Rafael Mesa, Arizona
WATER RESOURCE ENGINEERS

CITY OF MONROVIA

BALDWIN PARK KEY WELL ELEVATION

FIGURE 1

Z:\Jobs\2630\12 (WSA)\Appendices\Key Well - App B

APPENDIX C

Drought Regulations and Water Conservation Standards (Ordinance No. 2015-05 and Resolution No. 2015-41)

ORDINANCE NO. 2015-05

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF MONROVIA, CALIFORNIA, AMENDING CHAPTER 13.20 OF THE MONROVIA MUNICIPAL CODE, TO ESTABLISH ADDITIONAL RESTRICTIONS ON THE USE OF POTABLE WATER

WHEREAS, on April 1, 2015, Governor Brown issued Executive Order B-29-15 that, among other things, directs the State Water Resources Control to impose restrictions to achieve a statewide 25 percent reduction in potable urban usage through February 2016.

WHEREAS, on May 5, 2015, the State Water Resources Control Board approved revised emergency water conservation regulations in order to implement Executive Order B-29-15.

WHEREAS, the City of Monrovia ("City") is an urban water supplier, as defined in Water Code Section 10617, and is required to comply with the State Water Board's emergency water conservation regulations.

WHEREAS, the City has codified the water conservation measures in its water shortage contingency plan at Chapter 13.20 of the Monrovia Municipal Code.

WHEREAS, the City Council wishes to continue to implement and fairly enforce the water conservation measures identified in Chapter 13.20 of the Monrovia Municipal Code, and enhance the City's water conservation efforts to ensure a stable and reliable water supply for residents and businesses and to help the State address the ongoing drought.

THE CITY COUNCIL OF THE CITY OF MONROVIA, CALIFORNIA, DOES ORDAIN AS FOLLOWS:

SECTION 1. Section 13.20.030 of the Monrovia Municipal Code is hereby amended to read as follows (text to be added is underlined, text to be deleted is shown in ~~strikethrough~~):

"13.20.030 DEFINITIONS.

The following definitions apply to this chapter:

BASE PERIOD ALLOCATION. The Base Period Allocation shall be the amount of water used by a water customer during each billing period in calendar year 2013. Any existing customer who has experienced a change in situation which could warrant a review of their water usage during the Base Period Allocation, and / or any new customer who was not a customer on the premises to which water service is provided during the corresponding billing period in the Base Period Allocation, may be assigned a revised Base Period Allocation amount that shall generally be determined by the amount of water used at the same or similar premises in the base years, as determined by City Manager or his / her designee. ~~The amount of water used by a water customer~~

~~during the corresponding billing period in the base five years, except that a customer's base period allocation shall be augmented by 10% for the May billing period, and by 10.9% for the June billing period. Any customer who was not a customer on the premises to which water service is provided during the corresponding billing period in the base years shall be assigned a base period allocation determined by the amount of water used at the same or similar premises in the base years, as determined by the manager of the Infrastructure Maintenance Division or his designee.~~

BASE YEAR. The five fiscal years prior to a declaration of implementing a phase of this Ordinance.

BILLING UNIT. The unit amount of water employed for purposes of customer billing. One unit equals 748 gallons of water.

CITY. The city of Monrovia.

CUSTOMER or WATER CUSTOMER. Any person, association, corporation or governmental entity supplied or entitled to be supplied with water service by the city.

DEPARTMENT. The city's Department of ~~Public Works~~ Public Services.

DIVISION or UTILITIES DIVISION. The city Utilities Division within the Department of ~~Public Works~~ Public Services.

SECTION 2. Section 13.20.070 of the Monrovia Municipal Code is hereby amended to read as follows (text to be added is underlined, text to be deleted is shown in ~~strikethrough~~):

"13.20.070 WATER CONSERVATION PHASES.

The water conservation plan consists of six phases, each separately implemented by resolution of the City Council. The six phases are as follows:

(A) Phase I consists of mandatory water use restrictions and voluntary water conservation of 10%. This phase becomes effective upon determination by the City Council that water usage should be reduced by 10%. There will be no surcharge for excess water usage in this phase.

(B) Phase II consists of mandatory water use restrictions and mandatory water conservation of at least 10%. This phase becomes effective upon determination by the City Council that water usage should be reduced by at least 10% and that mandatory conservation measures are required. During Phase II, a customer whose water usage exceeds 90% of the base period allocation ~~shall be billed at 2.5 times the then-current rate for water service~~ may be charged a penalty to be established by resolution of the City Council for each billing unit in excess of the base period allocation.

(C) Phase III consists of mandatory water use restrictions and mandatory water conservation of at least 15%. This phase becomes effective upon determination of the City Council that water usage should be reduced by at least 15%. During Phase III, a customer whose water usage exceeds 85% of the base period allocation may be charged a penalty to be established by resolution of the City Council ~~shall be billed at three times the then-current rate for water service~~ for each billing unit in excess of the base period allocation.

(D) Phase IV consists of mandatory water use restrictions and mandatory water conservation of at least 28% ~~20%~~. This phase becomes effective upon determination by the City Council that water usage should be reduced by at least 28% ~~20%~~. During Phase IV, a customer whose water usage exceeds 72%~~80%~~ of the base

period allocation may be charged a penalty to be established by resolution of the City Council ~~shall be billed at 3.5 times the then-current rate for water service~~ for each billing unit in excess of the base period allocation.

(E) Phase V consists of mandatory water use restrictions and mandatory water rationing of at least 40%~~28%~~. This phase becomes effective upon determination by the City Council that water usage should be reduced by at least 40%~~25%~~. During Phase V, a customer whose water usage exceeds 60 ~~75%~~ of the base period allocation may be charged a penalty to be established by resolution of the City Council ~~shall be billed at four times the then-current rate for water service~~ for each billing unit in excess of the base period allocation.

(F) Phase VI consists of mandatory water use restrictions and mandatory water rationing of at least 50%. This phase becomes effective upon determination by the City Council that water usage should be reduced by at least 50%. During Phase VI, a customer whose water usage exceeds 50% of the base period allocation may be charged a penalty to be established by resolution of the City Council ~~shall be billed at 4.5 times the then-current rate for water service~~ for each billing unit in excess of the base period allocation.

SECTION 3. Section 13.20.080 of the Monrovia Municipal Code is hereby amended to read as follows (text to be added is underlined, text to be deleted is shown in ~~strikethrough~~):

"13.20.080. PROHIBITION OF NONESSENTIAL WATER USE.

(A) No person shall cause, use, or permit the use of water from the City water system in a manner contrary to any provision of this Chapter.

(B) No person shall cause, use, or permit the use of water from the City water system in excess of any limit established by the City Council by resolution.

(C) Phase I - The following water use restrictions shall be in effect and will be enforced on all customers and any other person who uses water from the City's potable water system for any purpose. For the purpose of this Chapter, the term person shall include individuals and corporations, partnerships, and associations of any kind:

(1) No person shall use a hose to wash any sidewalk, walkway, driveway, parking area, tennis or sport court, or other paved surfaces, except as is required for sanitary purposes, and only with a water broom or similar device or hose equipped with a nozzle or quick relief shutoff valve.

(2) Washing of motor vehicles, trailers, boats and other types of mobile equipment shall be ~~done~~ permitted only with a hand-held bucket or a hose equipped with a positive shut-off nozzle for quick rinses and the water flow shall be shut off when not rinsing the vehicle, except that washing may be done at the immediate premises of a commercial car wash.

(3) No water shall be used to clean, fill or maintain levels in decorative fountains, ponds, lakes or other similar aesthetic structures unless such water is part of recirculating system.

(4) No restaurant, hotel, cafe, cafeteria or other public place where food is sold, served or offered for sale shall serve drinking water to any customer unless expressly requested by that customer.

(5) All customers shall promptly repair all leaks from indoor and outdoor plumbing fixtures within 48 hours of discovery.

(6) The following restrictions shall apply to all residential, commercial, industrial, institutional and public landscaped areas, with the exception of commercial nurseries, golf courses and other water dependent uses:

a. No person shall spray irrigate any lawn or landscape area between more than every third day between the hours of 6:00 p.m. and 8:00 a.m of the following day. This subsection shall not apply to any drip irrigation system, irrigation system maintenance, leak repair or new planting of low water usage plants or if reclaimed water is utilized as permitted by law.

b. No person shall irrigate any landscaped area for more than fifteen (15) minutes per watering day.

c. No person shall permit or cause irrigation water to spray or flow to any impermeable private or public surface, including but not limited to, walkways, driveways, sidewalks, alleys, streets, or storm drains.

d. No person shall operate sprinklers, fountains or other water features when winds are so high as to create water drift causing runoff or flow to any impermeable private or public surface, including, but not limited to, walkways, driveways, sidewalks, alleys, streets, or storm drains.

e. No person shall water or irrigate any landscaping within 48 hours of a one-tenth of an inch (0.10") or greater rainfall event.

f. ~~(7)~~No person shall cause or allow water to run off landscaped areas onto adjoining streets, sidewalks or other paved areas due to incorrectly directed or maintained sprinklers or as the result of excessive watering.

~~(5) All lawns, landscape or other turf area shall be watered down not more than every third day, with the watering only during the hours between 5:00 p.m. and 10:00 a.m. This provision shall apply to residential, commercial, industrial and public~~

~~authorities, but shall not apply to commercial nurseries, golf courses and other water-dependent industries.~~

(D) ~~(B)~~Phase II - The following water use restrictions shall be in effect and will be enforced on all customers:

(1) All of the restrictions listed under Phase I shall be in effect, except that the restrictions on watering lawn, landscape or other turf areas shall be modified to prohibit watering more often than every fourth day~~, with even-numbered addresses watering on even-numbered days and odd-numbered addresses watering on odd-numbered days~~, with watering only allowed between the hours of 6:00 p.m. and 8:00 a.m. ~~the following day~~.

(2) No customer shall cause, use or permit the use of water for any purpose in an amount in excess of 90% of said customer's base period allocation.

(3) Commercial nurseries, golf courses and other water-dependent industries shall be prohibited from watering lawn, landscaping or other turf areas more often than every other day, with watering only during the hours between 6:00 p.m. and 8:00 a.m.

(4) Water used on a one-time basis for the purposes such as construction and dust control, shall be limited to that quantity identified in a plan submitted to the user which describes water use requirements. An approved plan from the Department shall be the basis for such usage. Water sources other than potable water shall be utilized where available.

(5) All hotels, motels and bed and breakfast establishments shall provide customers the option of choosing not to have towels laundered daily. Each establishment shall prominently display notice of this option in each bathroom and sleeping room using clear easily understood language. All guest room toilets installed after the effective date of this ordinance shall be low flow toilets utilizing the best technology feasible at the time of installation.

(6) All non-residential buildings in the City shall maintain public toilets and urinals with best available technology low flow or waterless toilets or urinals as required by applicable codes, and shall acquire water efficient dishwashers and washing machines upon replacement of existing machines or installation of new machines.

(E) Phase III - The following water use restrictions shall be in effect and will be enforced on all customers:

~~(1)~~ All of the restrictions listed under Phases I and II shall be in effect. ~~, except that the restrictions on watering lawn, landscape or other turf areas shall be modified to prohibit watering more often than every fourth day, with even-numbered addresses watering on even-numbered days and odd-numbered addresses watering on~~

~~odd-numbered days, with watering only allowed between the hours of 6:00 p.m. and 6:00 a.m.~~

(2) No customer shall cause, use or permit the use of water for any purpose in an amount in excess of 80% of said customer's base period allocation.

(3) Commercial nurseries, golf courses and other water-dependent industries shall be prohibited from watering lawn, landscape or other turf areas more often than every third day, with watering only during the hours between 6:00 p.m. and 6:00 a.m the following day.

(4) Water used on a one-time basis for the purposes such as construction and dust control shall be limited to that quantity identified in a plan submitted by the user which describes water use requirements. An approved plan from the Department shall be the basis for such usage. Water sources other than potable water shall be utilized where available.

(5) The use of water from fire hydrants shall be limited to fire fighting and related activities and other uses of water for municipal purposes shall be limited to activities necessary to maintain the public health, safety and welfare.

(F) Phase IV - The following water use restrictions shall be in effect and will be enforced on all customers: The restrictions in Phase IV shall be the same as Phase III, with the exception that no customer shall cause, use or permit the use of water for any purpose in the amount in excess of ~~75%~~ 72% of said customer's base period allocation.

(G) Phase V - The following water use restrictions shall be in effect and will be enforced on all customers: The restrictions in Phase V shall be that same as Phase IV, with the exception that no customer shall cause, use or permit the use of water for any purpose in an amount in excess of 60%~~50%~~ of said customer's base period allocation.

(H) Phase VI - The following water use restrictions shall be in effect and will be enforced on all customers: The restrictions in Phase VI shall be that of Phase V, with the exception that no customer shall cause, use or permit the use of water for any purpose in an amount in excess of 50% of said customer's base period allocation."

SECTION 4. Section 13.20.090 of the Monrovia Municipal Code is hereby amended to read as follows (text to be added is underlined, text to be deleted is shown in ~~strikethrough~~):

"13.20.090. EXCEPTIONS TO RESTRICTIONS.

(A) Commercial car washes with water recycling systems and commercial laundries shall be exempt from allotment restrictions.

(B) The restricted uses of water provided for in this chapter are not applicable to that use of water necessary for public health and safety, for the essential health care services or governmental services such as police, fire and other similar public emergency services, as determined by the Manager of the Infrastructure Maintenance Division.

(C) Any use of groundwater from outside the City's system or reclaimed water as permitted by law shall be exempt from restrictions."

SECTION 5. The City Council ratifies and re-adopts the provisions of Ordinance No. 2014-10 unchanged by this Ordinance as if set forth in full herein.

SECTION 6. The City Clerk shall certify to the adoption of this ordinance and cause the same to be published in the manner required by law and, pursuant to Water Code Section 375, said ordinance shall become effective immediately upon its final passage following a noticed public hearing.

INTRODUCED this 16th day of June, 2015.

PASSED, APPROVED, AND ADOPTED this 7th day of July, 2015.

BY:

Tom Adams, Mayor
City of Monrovia

ATTEST:

Alice D. Atkins, CMC, City Clerk
City of Monrovia

APPROVED AS TO FORM:

Craig A. Steele, City Attorney
City of Monrovia

RESOLUTION NO. 2015-41

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF MONROVIA, CALIFORNIA, IMPLEMENTING PHASE IV OF THE WATER CONSERVATION PLAN AND APPROVING AN ENFORCEMENT PLAN AND FEE PENALTY STRUCTURE PURSUANT TO MONROVIA MUNICIPAL CODE TITLE 13, CHAPTER 13.20 (WATER CONSERVATION).

WHEREAS, the Governor of the State of California on January 17, 2014, issued Proclamation No. 1-17-2014 declaring a State of Emergency to exist in California due to severe drought conditions; and

WHEREAS, the Governor of the State of California on April 25, 2014, issued an executive order proclaiming a Continued State of Emergency to strengthen the State's ability to manage water and called on all Californians to redouble their efforts to conserve water; and

WHEREAS, the Governor of the State of California on April 1, 2015, issued Executive Order B-29-15 that replaced earlier calls for voluntary conservation with directives for the State Water Board to impose restrictions to achieve a statewide 25% reduction in potable urban water usage following the State's water supplies being severely depleted and with no end to the drought in sight; and

WHEREAS, the State Water Board on May 5, 2015, adopted an emergency regulation amending and readopting an existing drought emergency regulation, which includes end-user conservation restrictions and mandatory conservation requirements for urban water suppliers, and

WHEREAS, the regulations adopted by the State Water Board mandate that the City of Monrovia to achieve a 28% reduction in potable water usage; and

WHEREAS, the City Council of the City of Monrovia has adopted amendments to Monrovia Municipal Code Title 13, Chapter 13.20 (Water Conservation) wherein Phase IV water conservation standards meet or exceed all State water conservation requirements for Monrovia; and

WHEREAS, a public hearing has been duly noticed and held as part of a regularly scheduled meeting, pursuant to the requirements of Government Code 66018, at which hearing every interested person has had an opportunity to present oral and written statements; and

WHEREAS, pursuant to Phase IV water conservation standards, the City has the authority to adopt a Water Conservation Plan, Enforcement Plan, and Penalty Fee Structure Plan by Resolution.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF MONROVIA DOES RESOLVE AS FOLLOWS:

1. To achieve the State mandated 28% reduction in potable water usage, the City chooses to manage water conservation efforts primarily through the use of education and outreach.

2. To further support water conservation efforts, the City also hereby implements a Water Conservation Plan that includes an Enforcement Plan and Penalty Structure pursuant to the amended Monrovia Municipal Code Title 13, Chapter 13.20 (Water Conservation) at the Phase IV level.

3. Implementation details related to the Water Conservation Plan shall include the following components:

    1. The following Enforcement Plan shall go into effect 45-days from the adoption of this Resolution (September 5, 2015), to allow Monrovian's time to be informed on the elevated Phase and new restrictions.

    2. Beginning on September 5, 2015, those customers who violate the City's Phase IV water use restriction regulations shall be subject to the following progressive Enforcement Plan and Penalty Structure:

        a) Any first offense will result in notification to the customer of the violation via a door hanger. This notification will include information on what the customer can do to correct the violation.

        b) Any second offense will result in staff contacting the customer directly. Staff will discuss with the customer ways to correct the violation. Should the resident have any extenuating circumstances that caused the violation, a variance may be issued pursuant to Chapter 13.20 of the Monrovia Municipal Code.

        c) Any third offense will include a formal notification to the property owner regarding their violation, along with information regarding a potential future fine. This contact will also include information on what the customer can do to correct the violation.

        d) Any fourth offense may result in a fine of $100.

        e) Any fifth offense may result in a fine of $200.

        f) Any sixth offense may result in a fine of $300.

3. The City reserves the right to elevate any violation of the City's Phase IV water conservation standards (pursuant to Title 13, Chapter 13.20 of the Monrovia Municipal Code) to any level of the Enforcement Plan and Penalty Structure at the City's discretion, based on the severity of the violation and customer compliance levels with the City's Phase IV water conservation measures.

PASSED, APPROVED AND ADOPTED this 21st day of July, 2015.

BY:

Tom Adams, Mayor
City of Monrovia

ATTEST:

Alice D. Atkins, CMC, City Clerk
City of Monrovia

APPROVED AS TO FORM:

Craig A. Steele, City Attorney
City of Monrovia

APPENDIX K2
UTILITY COMMENT LETTERS

July 18, 2019

Ashley Swarts
Development Coordinator
Maple Multi-Family Land CA, L.P.
5790 Fleet Street, Suite 140
Carlsbad, CA 92008

Re: Conditional Water and Sewer Will Serve Letter for Proposed Development in Monrovia, California for Parcel Map No. 82326

Dear Ashley Swarts,

The City of Monrovia is willing to serve the proposed development based on the recommendations of a feasibility study by Stetson Engineers Inc., for any added impacts or project driven deficiencies to the city's water system. This feasibility study is the responsibility of the applicant/developer and is needed to determine if the City has an adequate water system and infrastructure to serve your proposed project. The City has received several applications for the development of various multi-family projects immediately adjacent to the proposed project area and based on the feasibility study by Stetson Engineers Inc., the recommended improvements are:

- One booster pump No. 6 installed at the City well field facility
- Upgrade 980 feet (On Magnolia From Duarte to Evergreen) of water pipeline from existing 8 inch to 12 inch.

The City has determined that a fee-in-lieu of water improvements in the Transit Village Area shall be assessed to each project, per unit, to support the additional water demands on the City water system due to the construction of these projects.

The City of Monrovia is willing to serve the proposed development based on the recommendations of a feasibility study by a firm selected by the City, for any added impacts or project driven deficiencies to the city's sanitary wastewater collection system. The City has selected David

Evans and Associates to perform the feasibility study. The City has received several applications for the development of various multi-family projects immediately adjacent to the proposed project area and based on the feasibility study by David Evans and Associates, the City's wastewater collection system and infrastructure is adequate for your proposed project. The City of Monrovia only has collection of wastewater and conveys these effluents to Los Angeles County Wastewater Collection System. Connection permits and fees are not the responsibility of the City of Monrovia and proof of connection permit and fees will be needed for City permits.

This letter does not constitute either water supply verification or a water supply assessment required by California Government Code Section 66473.7 or California Water Code Section 10910. If you have any questions or require any additional information, please feel free to contact Sean Sullivan, Public Works Division Manager at ssullivan@ci.monrovia.ca.us or (626) 932-5522.

Sincerely,

Alex Tachiki
Senior Management Analyst – Public Works Department
City of Monrovia

July 22, 2019

Michael Heinrich
Principal, Architects Orange
321 West Chapman Street
Orange, CA 92866

Re: Alexan Monrovia
Monrovia, CA

Thank you for contacting Athens Services regarding the proposed services for the above location.

Athens Services has reviewed the project for Alexan Monrovia and based on the waste management plan submitted, we will be able to provide services to this location.

The above location is located in a Franchise City for waste collection. Athens Services is contracted by the City of Monrovia to provide disposal service to all commercial and residential locations.

Please do not hesitate to contact me directly at (626) 594-4415 if I can be of further assistance.

Sincerely,

Elizabeth Ramirez
Director of Government Affairs
elizabethramirez@athensservices.com

APPENDIX K3
WATER CAPACITY STUDY

DRAFT TECHNICAL MEMORANDUM

2171 E. Francisco Blvd., Suite K • San Rafael, California • 94901
TEL: (415) 457-0701 FAX: (415) 457-1638 e-mail: jeffh@stetsonengineers.com

TO:	City of Monrovia	DATE:	1/15/2019
FROM:	Stetson Engineers Inc.	JOB NO:	2630-14
RE:	Water Capacity Study for Proposed Station Square Transit Village Projects		

INTRODUCTION

The City of Monrovia (City) is reviewing the available capacity of the City's water system to provide adequate water service to the proposed new developments in the Station Square Transit Village. The currently proposed new developments (proposed Projects) include the following:

- 296 units in the Station Square South project;
- 436 units in the Alexan project;
- 284 units in the Arroyo project;
- 310 units in the Fifield project; and
- 109 units in the City Lot project

The proposed Projects are located in the "Mountain Pressure Zone" (Mountain Zone) of the City's water system near the intersection of Magnolia Avenue and Pomona Avenue, south of the 210 Freeway. The locations of the proposed Projects are provided in Figure 1. As part of the City's review process, the City has requested that Stetson Engineers Inc. (Stetson) prepare a water capacity study to evaluate the potential impacts of the proposed Projects on the water delivery capability of the City's water system.

Stetson previously developed a hydraulic model of the City's water system in 2014 using H2OMAP software (from Innovyze). Stetson has updated the model to include pipelines in the Mountain Zone that are included in the Capital Improvement Plan (CIP) from the City's 2015 Water Master Plan, which the City is currently implementing. For this study, additional updates to the water

system infrastructure and water demands in the hydraulic model, discussed below, were incorporated. The model has not been fully calibrated due to a lack of available fire flow test data.

Figure 1 Locations of Proposed Projects

The model was used to evaluate whether there would be any hydraulic impacts associated with the proposed Projects and to identify solutions to resolve these impacts or deficiencies (including fire flow, pressure, head loss, and velocity deficiencies). The review examined available fire flow during an emergency at Maximum Day Demand (MDD), as well as pressure and flow at Peak Hour Demand (PHD). The study included the following steps:

(1) Update the existing hydraulic model to incorporate CIP projects identified in the City's 2015 Master Plan for the Mountain Zone
(2) Update the existing hydraulic model to incorporate anticipated water demands associated with the 256-unit MODA project.
(3) Perform hydraulic modeling to identify deficiencies within the City's existing water system in the Mountain Zone
(4) Update the hydraulic model to incorporate water system pipeline improvements to meet existing hydraulic deficiencies in the Mountain Zone
(5) Incorporate anticipated water demands associated with proposed Projects and perform hydraulic modeling to identify hydraulic impacts associated with the proposed Projects; and
(6) Propose improvement solutions to resolve water deficiencies caused by the proposed Projects.

1.0 EVALUATION CRITERIA

Design guidelines for transmission and distribution pipelines vary from state to state and from utility to utility. The American Water Works Association (AWWA) provides some guidelines and many states regulate certain performance criteria. In addition, the 2016 California Fire Code sets standards for fire flow requirements for different types of structures. The standards listed in Table 1 were used to evaluate the City's water system capacity. While certain water deficiencies may already exist in the City's water distribution system, this capacity study focused on the additional or incremental water system deficiencies (stand alone impacts) caused by the proposed Projects.

Table 1 Design Standards for Distribution Pipelines

Parameter	Demand	Criteria
Minimum Pressure [1]	PHD	35 psi
Maximum Pressure [1]		120 psi
Pipe Velocity [2]		Not greater than 7 feet per second
Maximum Head Loss [2]		10 feet per 1,000 ft
Fire Flow in Multiple Pressure Zones [3]	MDD	
Mountain System (~330,000 sf)		2,000 gpm for 4 hrs
Cloverleaf System (~135,300 sf)		1,938 gpm for 4 hrs
Ridgeside System (~25,300 sf)		1,500 gpm for 4 hrs
Norumbega System (~5,700 sf)		2,000 gpm for 2 hrs
Upper Cloverleaf System (~4,500 sf)		2,500 gpm for 2 hrs
Emerson System (~6,200 sf)		2,000 gpm for 2 hrs
Canyon System (~4,500 sf)		1,500 gpm for 2 hrs

Notes:
gpm = gallons per minute
psi = pounds per square inch
MDD = Maximum Day Demand, which is usually derived by multiplying a factor to the Average Day Demand.
PHD = Peak Hour Demand, which is usually derived by multiplying a factor to the Average Day Demand.

[1] City standard.
[2] AWWA standard.
[3] The 2016 California Fire Code standards, which depends on building types/sizes.

2.0 HYDRAULIC ANALYSIS

2.1 Model Overview and System Updates ("Baseline" Condition)

The existing hydraulic model covers all the City's water facilities that are needed for the hydraulic modeling of the system, including 5 active wells, 12 reservoirs, 18 booster pumps, and about 114 miles of pipes, distributed in 7 pressure zones.

The estimated Average Day Demand (ADD) in 2016, approximately 6,400 acre-feet per year (AFY) or 3,975 gpm, was considered as the existing water demand. The values for PHD and MDD were derived by multiplying factors of 2.4, and 1.6 to Average Day Demand (ADD), respectively. Water demands and the distribution of water demands as a percentage of total demand for pressure zones in the City's water system for existing demands (2016) are summarized in Table 2.

Table 2 Water Demands under Existing Conditions

Pressure Zone ID	Pressure Zone Name	ADD (gpm)	MDD (gpm)	PHD (gpm)	Percentage
Z1	Mountain	399	639	958	10%
Z2	Cloverleaf	2,390	3,823	5,735	60%
Z3	Ridgeside	833	1,333	2,000	21%
Z4	Norumbega	139	222	333	3.5%
Z5	Upper Cloverleaf	119	191	286	3.0%
Z6	Emerson	91	146	219	2.3%
Z7	Canyon	4	7	10	0.1%
	Total	3,975	6,361	9,541	100%

Note: MDD = 1.6*ADD; PHD = 2.4*ADD.

The existing water system infrastructure in the hydraulic model was updated to create a "Baseline" condition. As indicated above, the existing model was updated to include pipelines in the Mountain Zone that are included in the CIP from the City's 2015 Water Master Plan. The existing model was also updated to incorporate the water demands associated with the 256-unit MODA project. Hydraulic modeling was then performed to identify deficiencies within the City's water

system in the Mountain Zone. Potential pipeline upgrades were identified to address deficiencies associated with size, pressure, fire flow, and head loss. The Baseline model includes these new and/or anticipated City pipeline upgrades to address existing water system hydraulic deficiencies.

2.2 Proposed Projects Modeling Conditions (Projects Condition)

The proposed Projects are located near the intersection of Magnolia Avenue and Pomona Avenue (see Figure 1). The elevations of the proposed Projects range from about 430 to 455 feet AMSL. The estimated water demands for the proposed Projects were added to the model under a "Projects" condition. The peak demands for the proposed Projects were estimated based on the proposed number of units and water use rates from the separate "Water & Sewer Capacity Feasibility" analysis previously prepared by Tryco Consulting Inc. for the City. There is currently a total of 1,435 units proposed with a total water demand of about 3,174 gallons per minute (gpm) at PHD. The total MDD was estimated by the PHD by a factor of 1.5, which is about 2,116 gpm, as shown in Table 3.

Table 3 Estimated PHD and MDD for Proposed Projects

Project Name	Number of Units	PHD (gpm)	MDD (gpm)
Station Square South	296	651	434
Alexan	436	906	604
Arroyo	284	629	420
Fifield	310	677	451
City Lot	109	311	207
Total	1,435	3,174	2,116

2.3 Modeling Results – System Impacts

Stetson performed four model scenario runs (Scenarios) to evaluate the impacts from the proposed Projects to the Baseline distribution system. The criteria from Table 1 were used to examine water deficiencies in all Scenario runs. The four modeling Scenarios were:

(A) Baseline system without the proposed Projects at Baseline MDD plus fire flow;
(B) Baseline system with the proposed Projects at projected MDD plus fire flow;
(C) Baseline system without the proposed Projects at Baseline PHD;
(D) Baseline system with the proposed Projects at projected PHD.

Under modeling Scenario (A), the Baseline system without the proposed Projects at MDD plus fire flow was evaluated. As shown in Table 3, the proposed Projects are estimated to add a total water demand of 2,116 gpm under Scenario (B) during MDD. The system hydraulics identified in Scenarios (A) and (B) were compared with each other to determine the impacts of the proposed Projects on fire flow capability during MDD. The modeling results indicate that most of the reductions of available fire flow due to the proposed Projects occur in the City's Mountain Zone. A total of 224 hydrant nodes were estimated to deliver less fire flow during fire events as a result of the proposed Projects. A total of 46 hydrant nodes (out of the 224 hydrant nodes) were associated with fire flow deficiencies (up to about 130 gpm) that did not meet the fire flow design criteria (see Figure 2) from Table 1. Most fire flow reductions occur in the southeastern Mountain Zone and a few areas in the southwestern Mountain Zone.

Scenarios (C) and (D) were simulated and compared with each other to evaluate the impacts of the proposed Project to system pressure at PHD. The proposed Projects add an extra water demand of 3,174 gpm in Scenario (D) during PHD. Based on the modeling results, the proposed Projects led to pressure reductions below the 35 psi design criteria (see Table 1) at 19 nodes (see Figure 3). The pressure reductions at these nodes ranged from about 0.1 psi to 4 psi and mostly occurred in the northeast portion of the Mountain Zone.

Pipe head loss throughout the water system was simulated and compared in Scenarios (C) and (D) under PHD. Based on the modeling results, the proposed Projects led to an increased amount of head loss above the 10 feet per 1,000 ft design criteria (see Table 1) in approximately 980 ft of

pipeline (see Figure 4). The maximum increase in head loss in these pipelines is about 7 feet per 1,000 ft.

Based on the modeling results, the maximum increase in velocity by the proposed Project is about 3.6 feet per second (fps) at PHD. However, the flow velocities in these affected pipes are less than 7 fps design criteria (see Table 1). As a result, no solutions were proposed to mitigate the impacts on pipe velocity due to the proposed Projects.

The potential improvement solutions to resolve the identified deficiencies are discussed in Section 2.4 below.

2.4 Potential Improvement Solutions

The hydraulic model was used to identify potential solutions to address the impacts or deficiencies (identified in Section 2.3 above) as a result of the proposed Projects. Examination of the existing pipeline network suggested that additional booster pump capacity at the City's Forebay Pump Station would mitigate a majority of the impacts of the proposed Projects. The Forebay Pump Station is located in the southern portion of the Mountain Zone and supplies water from the City's Forebay Reservoirs 1 and 2 to the pipeline network within the Mountain Zone. The addition of a new booster pump (design head and flow of 260 ft and 3,200 gpm, respectively), in parallel with three existing booster pumps (Forebay 1-4, 1-5, and 1-7) which are directly connected to the City's Forebay Reservoirs 1 and 2, was evaluated.

In addition to a new booster pump, further modeling analysis of the deficiencies determined that specific pipelines should be upgraded in order to mitigate the remaining impacts of the proposed Projects. The analysis indicated a total length of about 980 feet of pipeline replacements or upgrades along Magnolia Avenue (in the vicinity of the Station Square Transit Village) are also needed to address deficiencies. Appendix A provides the sizes and locations of the proposed pipeline upgrades.

It should be noted the hydraulic model also identified the need to upgrade the pipeline on Peck Road, north of Duarte Road, to the end of the cul-de-sac, in order to resolve fire flow

deficiencies during MDD. However, it is our understanding the City will abandon this pipe segment (from the intersection of Peck Road and Duarte Road to the end of the cul-de-sac) and the developer for the Station Square South project will be responsible for the pipeline improvements to that segment.

The hydraulic model was then used to run the following additional Scenarios (E) and (F) to evaluate the recommended solutions in resolving the deficiencies resulting from the proposed Projects:

(E) Baseline system with Project and proposed solutions at projected MDD plus fire flow;
(F) Baseline system with Project and proposed solutions at projected PHD.

A comparison at MDD plus fire flow between Scenario (E), with the proposed solutions, and Scenario (A), under Baseline conditions, indicates there are no deficient fire flow reductions as a result of the proposed Projects with the proposed solutions incorporated.

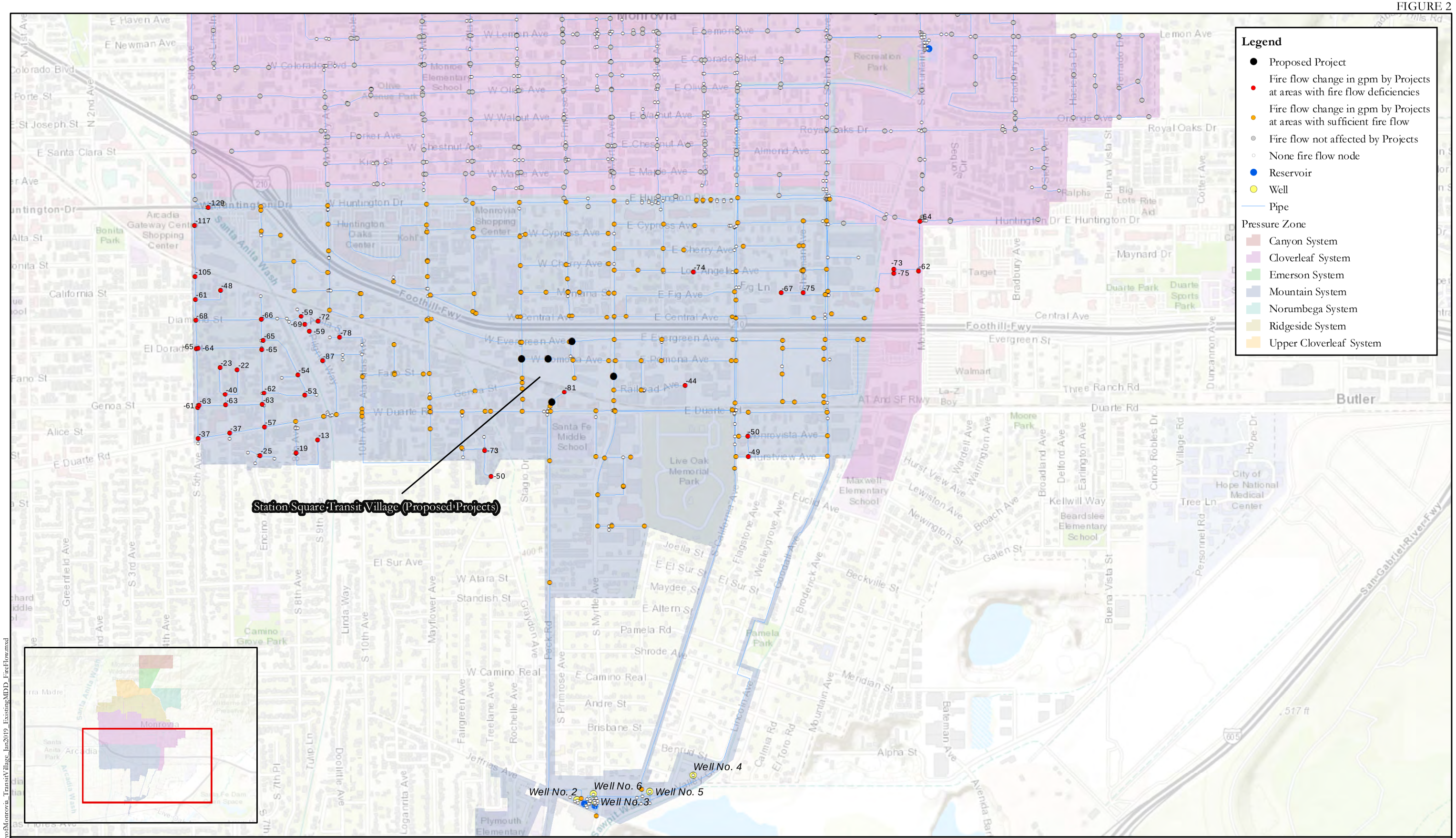
A similar comparison at PHD between Scenario (F), with the proposed solutions, and Scenario (C), under Baseline conditions, indicates all pressure and head loss deficiencies would be eliminated by the proposed solutions incorporated.

3.0 FINDINGS AND RECOMMENDATIONS

The proposed Projects include the Station Square South, the Alexan, the Arroyo, the Fifield, and the City Lot projects. This capacity study reviewed the additional or incremental deficiencies (stand alone impacts) to the City's water system caused by the water demands from the proposed Projects.

The hydraulic modeling results indicate that the proposed Projects would result in significant fire flow, head loss, and pressure deficiencies to the City's water system in the Mountain Zone. In order to resolve these deficiencies, it is recommended additional booster pump capacity be added to the City's Forebay Pump Station (design head and flow of 260 ft and 3,200 gpm, respectively). In addition, a total length of 980 feet of pipeline replacements or upgrades along Magnolia Avenue (near the Station Square Transit Village) is recommended to mitigate the impact of the proposed Projects. These solutions should be able to resolve the deficiencies caused by the proposed Projects.

FIGURE 2



Document Path: J:\jn\2630\Civil\Monrovia_TransitVillage_Jan2019_ExistingMDD_FireFlow.mxd

STETSON ENGINEERS INC.

DRAFT

IMPACT OF PROPOSED PROJECTS TO EXISTING WATER DISTRIBUTION SYSTEM AT PROJECTED MDD DEMAND
REDUCTION IN AVAILABLE FIRE FLOW

N

0 500 1,000 1,500 Feet

Station Square Transit Village (Proposed Projects)

Well No. 2
Well No. 6
Well No. 5
Well No. 4
Well No. 3

Legend

- Proposed Project
- Pressure reduced in psi by Projects at areas with pressure < 35 psi
- Pressure reduced in psi by Projects at areas with pressure >= 35 psi
- Pressure not affected by Projects
- Node
- Reservoir
- Well
- Pipe

Pressure Zone

- Canyon System
- Cloverleaf System
- Emerson System
- Mountain System
- Norumbega System
- Ridgeside System
- Upper Cloverleaf System

Document Path: J:\jn2630\Civil\Monrovia_TransitVillage_Jan2019_ExistingPHD_Pressure.mxd

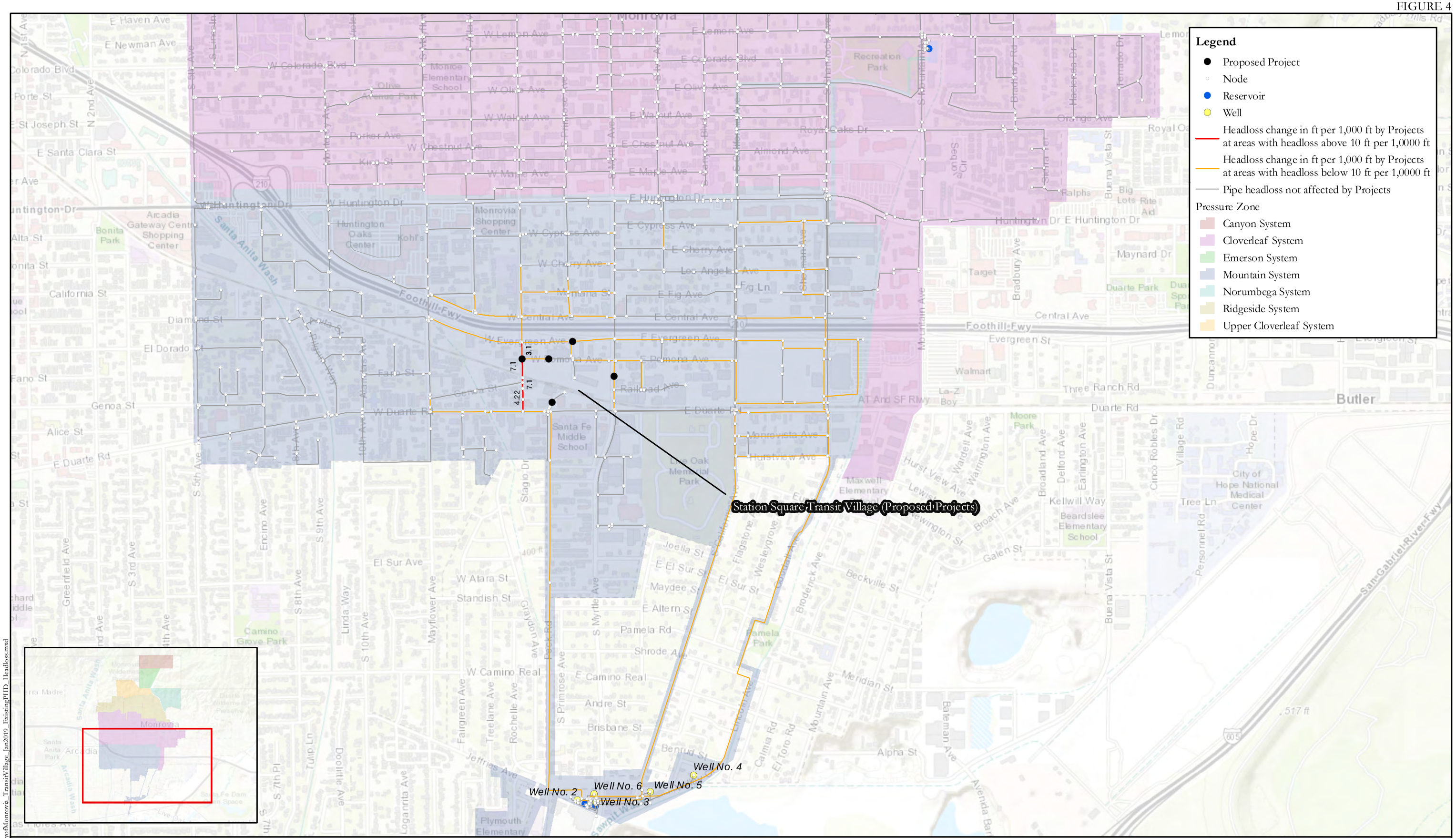
STETSON ENGINEERS INC.

DRAFT

PROJECT IMPACT TO EXISTING WATER DISTRIBUTION SYSTEM AT PROJECTED PHD DEMAND REDUCTION IN NODE PRESSURE

N

0 500 1,000 1,500 Feet



DRAFT

IMPACT OF PROPOSED PROJECTS TO EXISTING WATER DISTRIBUTION SYSTEM AT PROJECTED PHD DEMAND CHANGE IN HEADLOSS

STETSON ENGINEERS INC.

N

0 500 1,000 1,500 Feet

Appendix A Proposed Pipe Replacement/Upgrades to Mitigate Impacts from Proposed Projects

No.	Pipe ID	Length (ft)	Install Year	Existing Diameter (inch)	Proposed Diameter (inch)	Address
1	564	235	1937	8	12	Magnolia Ave between Evergeen Ave and Pomona Ave
2	565	63	1937	8	12	Magnolia Ave between Pomona Ave and Genoa St
3	566	163	1937	8	12	Magnolia Ave between Genoa St and Duarte Rd
4	565B	273	1937	8	12	Magnolia Ave between Pomona Ave and Genoa St
5	566B	160	1937	8	12	Magnolia Ave between Genoa St and Duarte Rd
6	566C	86	1937	8	12	Magnolia Ave between Genoa St and Duarte Rd
Total		**980**				

Technical Memorandum

Transit Village Water Improvements
Fair share fee-in-lieu-of improvements

FROM: **City of Monrovia**
Public Services Department
Public Works Division
Brad Merrell, P.E., City Engineer

SUBJECT: **Fee-in-lieu-of water improvements for multiple projects in the Transit Village Area**

DATE: **January 14, 2019**

INTRODUCTION

The City of Monrovia (City) has received several applications for the development of various apartment complex projects. The purpose of this memo is to state the required development impact fee (DIF), per unit (apartment unit), to be assessed to each project to cover additional water infrastructure which would be required to support the additional water demands on the City water system due to the construction of these projects.

FEASIBILITY STUDIES

The City has had several feasibility studies prepared by Stetson Engineers Inc. to evaluate the effect to the City's water system from these projects. These studies established the needed water system improvements in order to maintain adequate water supply and pressure to the City's water users and to these added projects, based on the added demand by these projects.
In short, the recommended improvements are:

- One booster pump No 6 installed at the City well field.
- Upgrade of 980 feet (on Magnolia from Duarte to Evergreen) of water pipe line from existing 8 inch to 12 inch.

ESTIMATED COST OF IMPROVMENTS FOR MITGATION

The City has estimated (attached) the total cost of these improvements at $1,293,981 to be divided by the total units in the following projects:

- 296 units in the Station Square Project (Richmond)
- 436 units in the Alexan Foothill Project (Trammel Crow)
- 284 units in the Station Square North (Arroyo)
- 310 units in the Fifield
- 100 units in the City Park N Ride Lot

For a total of 1,426 units. This would equate to $1,293,981/1,426 units = $907.42 per unit.

Therefore the “Fair-Share” contribution to the City from each of the above projects shall be $907.42 per unit within that respective project.

Estimated Cost Per Project

- Station Square 296 x $907.42 = $268,596
- Alexan 436 x $907.42 = $395,635
- Station Square North 284 x $907.42 = $257,707
- Fifield 310 x $907.42 = $281,300
- City Lot 100 x $907.42 = $90,743

$1,293,981

	City of Monrovia					***14-Jan-19***
	Public Services Department					
	Public Works Division					
	Brad Merrell, City Engineer					
	Transit Village Water Improvements					
	Engineer's Estimate					
	Description	**Quantity**	**Units**	**Rate**	**Total**	**Subtotals**
	Booster Pump Installation					
1	Modification to existing booster pedestal	1	LS	$ 25,000.00	$ 25,000	
2	Supply and Install new booster pump	1	LS	$ 85,000.00	$ 85,000	
3	Supply and Install new pump controller	1	LS	$ 30,000.00	$ 30,000	
4	Supply and Install Electrical Switch Gear	1	LS	$ 36,000.00	$ 36,000	
5	Modifications to new electrical service	1	LS	$ 45,000.00	$ 45,000	
6	Saw cut for trenching	760	LF	$ 3.50	$ 2,660	
7	Trench reconstruction	380	LF	$ 45.00	$ 17,100	
8	Conduits and ducts	380	LF	$ 50.00	$ 19,000	
9	Supply underground wire and installation	380	LF	$ 60.00	$ 22,800	
10	Design	1	LS	$ 55,000.00	$ 55,000	
11	Bid and contact administration	1	LS	$ 45,000.00	$ 45,000	$ 382,560
	New 12 inch Water Line on Magnolia					
12	Class 350 DI 12 water line	980	LF	$ 220.00	$ 215,600	
13	Saw cut trench	2,060	LF	$ 3.50	$ 7,210	
14	Trench Reconstruction	980	LF	$ 36.00	$ 35,280	
15	Metro Bore/Rail Crossing	1	LS	$ 85,000.00	$ 85,000	
16	Moratorium Street Repair	26,000	SQ	$ 4.00	$ 104,000	
17	Remove and Dispose of AC Paving	5,880	SF	$ 2.50	$ 14,700	
18	Remove Sewer Manhole Ring, Lid, & Concrete	5	EA	$ 750.00	$ 3,750	
19	Install/Savage Fire Hydrants	7	EA	$ 12,500.00	$ 87,500	
20	Striping	1	LS	$ 2,500.00	$ 2,500	
21	Staging / Traffic Control / Traffic Control Plans	1	LS	$ 5,000.00	$ 5,000	
22	Public Notification	1	LS	$ 2,000.00	$ 2,000	
23	Mobilization	1	LS	$ 65,000.00	$ 65,000	
24	Ped. and Vehicle Access	1	LS	$ 1,500.00	$ 1,500	
25	SWPPP Implementation	1	LS	$ 8,500.00	$ 8,500	
26	Design, Surveying, Construction Admin	1	LS	$ 125,000.00	$ 125,000.00	
27	Geotechnical investigation	1	LS	$ 15,000.00	$ 15,000.00	
28	Metro approval for boring	1	LS	$ 15,000.00	$ 15,000.00	$ 792,540
29					**Total of subtotal**	$ 1,175,100
30	Contingency 15%					$ 118,881
31					**Total Engineer's Estimate**	**$ 1,293,981**
	Cost per estimated develped units	1426				$ 907.42

APPENDIX K4
WASTEWATER CAPACITY STUDY

DAVID EVANS
AND ASSOCIATES INC.

MEMORANDUM

DATE: May 29, 2018

TO: Brad Merrell, PE
City Engineer
Department of Public Works
City of Monrovia

FROM: David Stuetzel

SUBJECT: Sewer Capcity Analysis – Multi Development Areas

PROJECT: Task order 05 – On Call Contract
MONR000-0002

CC: Alex Tachiki, City of Monrovia
Rob Bathke, DEA

As requested by the City of Monrovia, David Evans and Associates was requested to evaluate the feasibility and potential impact of connecting multiple new development properties located around the Monrovia Metro Station in the area located south of the Foothill Freeway (Rte 210), West of Myrtle Avenue, North of Duarte Road and east of Mayflower Avenue. The new developments include the following properties:

Development Name	Development Type	Parcel Size (SF)*	Unit Count
Trammell Crow Residential	Residential	318,800	472
Station Square North	Apartments	143,900	280
Mixed Use Project	Apartments	80,000	250
MODA at Monrovia Station	Apartments	125,600	261
Thomas Saffron Associates	Apartments	46,700	103
Richman Development	Apartments	144,200	294
Potential Residential	Residential	85,300	150

* Parcel Sizes were determined from google maps and may not represent actual parcel size.

The existing land parcels being considered for new development are shown in the City's Land use Map as Manufacturing and Planned Use developments. The manufacturing land use has a sewer flow demand value of 200 gpd/1000 SF, and the Planned development parcels were shown with a sewer demand value of 1600 gpd/acre as listed in the City's current Sewer Master Plan report.

In calculating the proposed development sewer flow tributary to the City's existing sewer pipeline system, the sewer flow value for the existing parcels was removed form the sewer study. The proposed developments tributary sewer flows were determined using the Los Angeles County Sanitation District estimated daily average sewage flows for various occupancies, with a minimum flow demand of 250 gpd/unit.

DATE: May 29, 2018 **FROM:** David Stuetzel

TO: Brad Merrell, PE **SUBJECT:** Sewer Capcity Analysis – Multi Development Areas

The configuration of the City's existing sewer for the proposed developments will connect to existing sewer pipelines in local/side streets with connections to the City's main collection system within Magnolia Avenue and Myrtle Avenue. Flows collected in these streets will continue southerly to Duarte Road. Sewer flows flor the developments included in this study will combine at the intersection of Peck Road and Duarte Road and continue southerly along Peck Road to the Southerly City limits at Live Oak Avenue.

Table 1 Estimated Wastewater Flows

Development	POC Location	Land Use	Wastewater Flow Factor (gpd/unit)	Unit Count	Average Flow (gpd)	Peaking Factor**	Peak Flow (mgd)
Trammell Crow Residential	Magnolia Ave SMH 162-021	Residential	260	472	122,720	1.61	0.200
Station Square North	Pomona Ave SMH 162-029	Apartments	250	280	70,000	1.61	0.113
Mixed Use Project	Pomona Ave SMH 163-027	Apartments	250	250	62,500	1.61	0.101
MODA at Monrovia Station	Pomona Ave SMH 162-029	Apartments	250	261	65,250	1.61	0.105
Thomas Saffron Associates	Myrtle Ave SMH 163-007	Apartments	250	103	25,750	1.61	0.042
Richman Development	Magnolia SMH 162-022 Peck Road SMH 163-033	Apartments	250	294	73,500	1.61	0.118
Potential Residential	Duarte Rd 173-029	Residential	260	150	39,000	1.61	0.063

'** Peaking Factor based on the flow measurements conducted as part of the 2015 Sewer Master Plan

DATE: May 29, 2018 **FROM:** David Stuetzel

TO: Brad Merrell, PE **SUBJECT:** Sewer Capcity Analysis – Multi Development Areas

Table 2 Existing Wastewater Parcel Flows

Development	POC Location	Land Use	Wastewater Flow Factor	Area (SF)*	Average Flow (gpd)	Peaking Factor**	Peak Flow (mgd)
Trammell Crow Residential	Magnolia Ave SMH 162-021	Manufacturing	200 gpd/KSF	318,800	63,760	1.61	0.103
Station Square North	Pomona Ave SMH 162-029	Planned Use	1600 gpd/AC	143,900	5,285	1.61	0.009
Mixed Use Project	Pomona Ave SMH 163-027	Planned Use	1600 gpd/AC	80,000	2,940	1.61	0.005
MODA at Monrovia Station	Pomona Ave SMH 162-029	Planned Use	1600 gpd/AC	125,600	4,610	1.61	0.007
Thomas Saffron Associates	Myrtle Ave SMH 163-007	Planned Use	1600 gpd/AC	46,700	1,715	1.61	0.003
Richman Development	Magnolia SMH 162-022 Peck Road SMH 163-033	Planned Use	1600 gpd/AC	144,200	5,300	1.61	0.009
Potential Residential	Duarte Rd 173-029	Planned Use	1600 gpd/AC	85,300	3,135	1.61	0.005

DATE: May 29, 2018 **FROM:** David Stuetzel

TO: Brad Merrell, PE **SUBJECT:** Sewer Capcity Analysis – Multi Development Areas

'* Parcel Sizes were determined from google maps and may not represent actual parcel size

** Peaking Factor based on the flow measurements conducted as part of the 2015 Sewer Master Plan

The previously developed sewer master plan hydraulic model was used to evaluate the hydraulic capacity of the downstream City sewers. The variations of flow were captured in the hydraulic model using diurnal curve method with a peaking factor of 1.61. The peak flows in Table 1 and the previously developed diurnal curve were input at the point of connections along the public street connections to the City sewer pipelines and the model was run for both existing and proposed flow conditions. Appendix D shows the SMP model results. The following summarizes the major findings of the analysis:

- The City sewers receiving sewer flow from the proposed Developments range in size from 10-inch to 24-inch in diameter. According to LACSD, for sewer mainlines less than 15-inch in diameter, the capacity is considered full when the ratio of depth of flow (d) over the pipe diameter (D) is equal to 0.5. Expressed as d/D=0.5. For 15-inch and larger sewers, the full capacity is set at a d/D of 0.75 by LACSD.
- Under the existing flow conditions, the existing d/D ratio for pipe segment 173-029 to 172-010 along Duarte west of Myrtle Avenue was found to have the d/D ratio at 0.61, which exceeds the recommended LACSD flow ratio of 0.50 for sewer pipeline flow. All other pipeline d/D ratios downstream of the proposed developments were found to be below the criteria.
- Under the proposed flow conditions, the existing d/D ratio for pipe segment 162-022 to 172-007 in Magnolia Ave was found to have a d/D ratio at 0.68, pipe segment 173-028 to 173-029 on Duarte Road was found to have a d/D ratio at 0.52, and pipe segment 173-029 to 172-010 on Duarte Road was found to have a d/D ratio at 0.66 which exceeds the recommended LACSD flow ratio of 0.50 for sewer pipeline flow. All other pipeline d/D ratios downstream of the proposed developments were found to be below the criteria.

Attachments:

Appendix A – Proposed Project Location Exhibit

Appendix B – Impacted City Sewer Locations

Appendix C – LACSD Flow Factors

Appendix D – Capacity Analysis Results

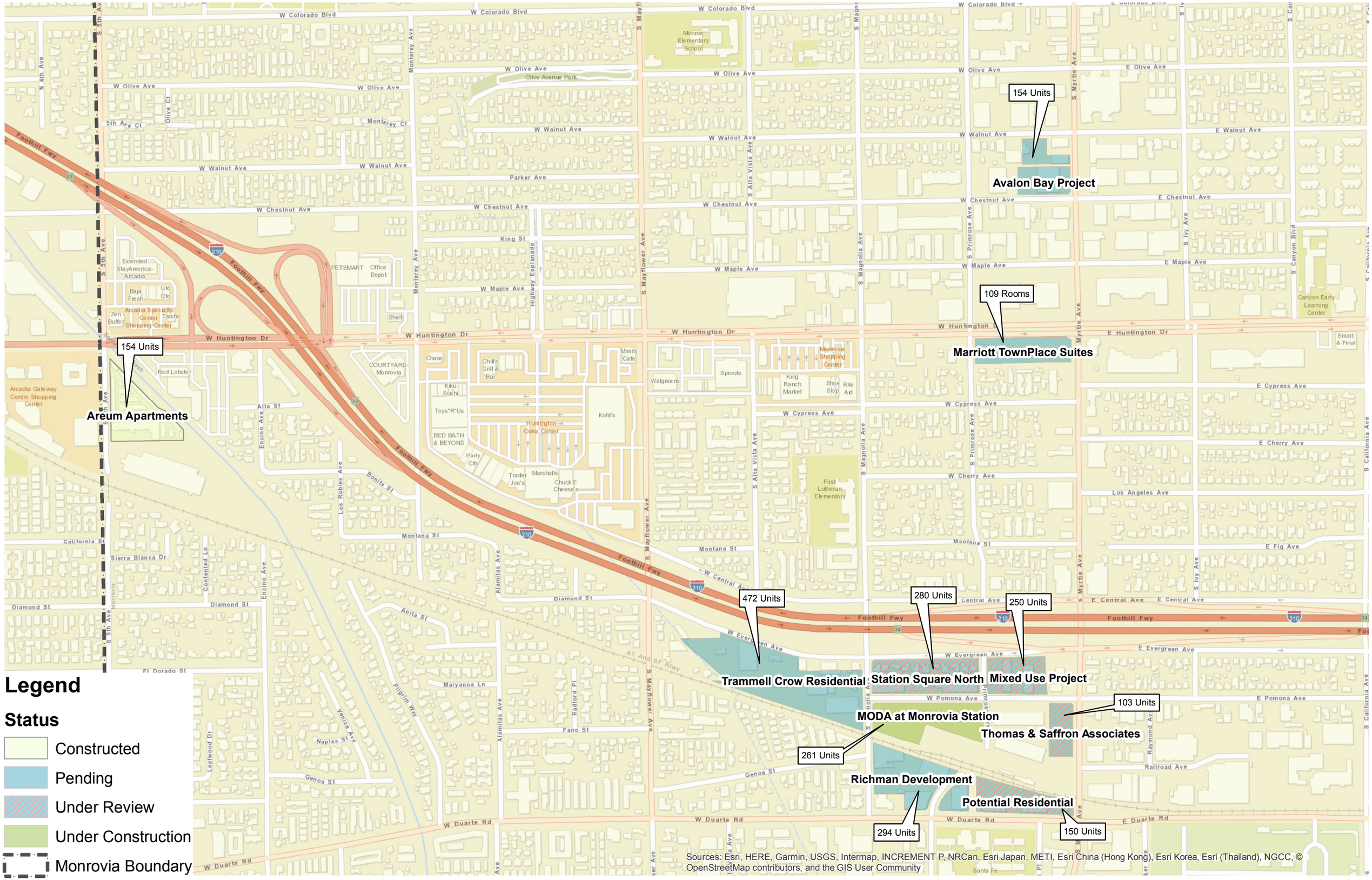
Attachments/Enclosures: List Items

File Path: Document1

Appendix A

Proposed Project Locations and

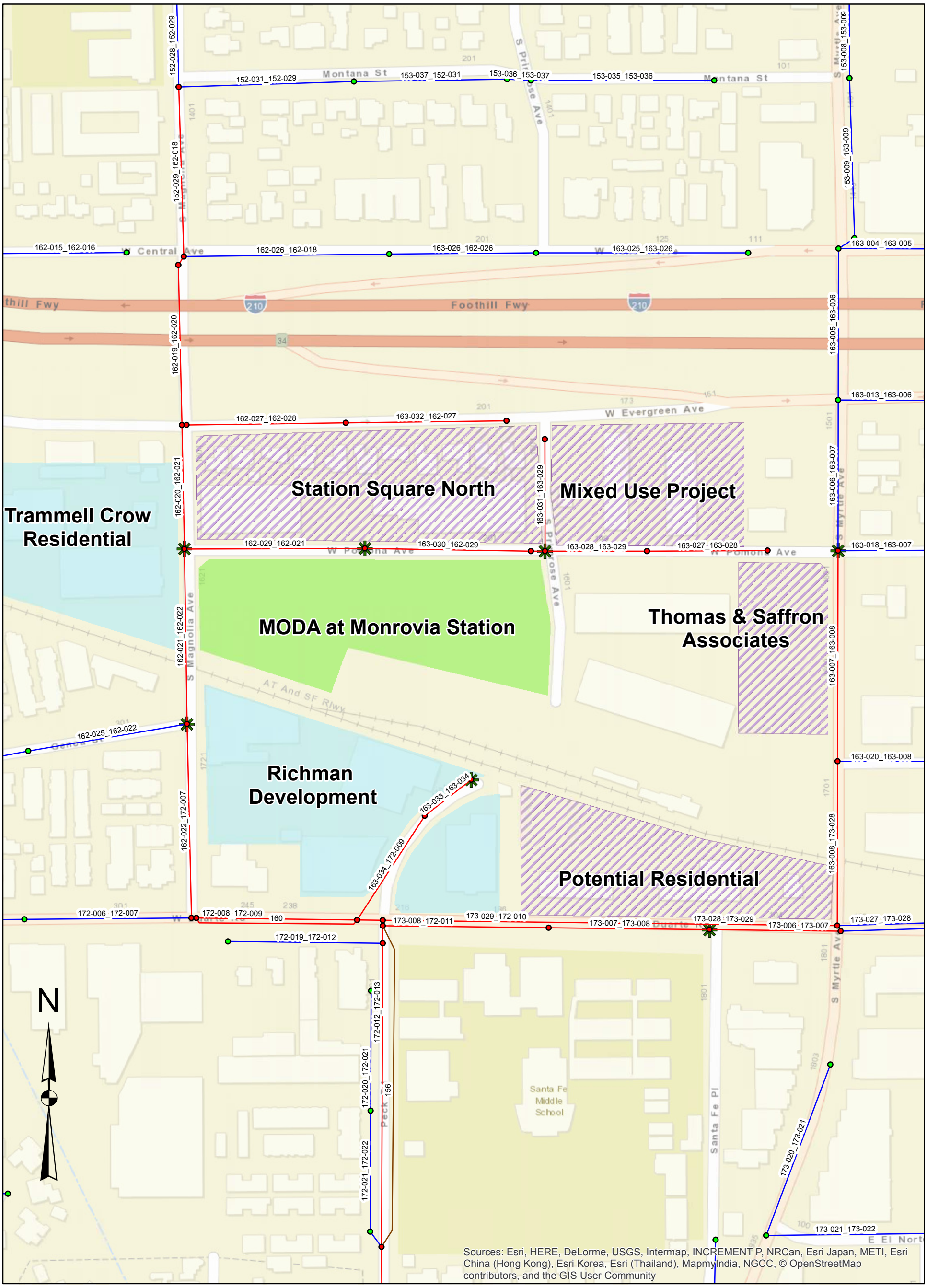
Points of Connection


154 Units
Avalon Bay Project
109 Rooms
Marriott TownPlace Suites
154 Units
Areum Apartments
472 Units
Trammell Crow Residential
280 Units
Station Square North
250 Units
Mixed Use Project
103 Units
Thomas & Saffron Associates
MODA at Monrovia Station
261 Units
Richman Development
294 Units
Potential Residential
150 Units
Legend
Status
Constructed
Pending
Under Review
Under Construction
Monrovia Boundary
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, © OpenStreetMap contributors, and the GIS User Community

Appendix B

Impacted City Sewer Locations

Square Station Expansion Sewer Analysis Exhibit



Legend

Manhole

ADDITIONAL SEWER INPUTS

ABANDON

<all other values>

City Sewer

<all other values>

TYPE

Active

Domain

Inactive

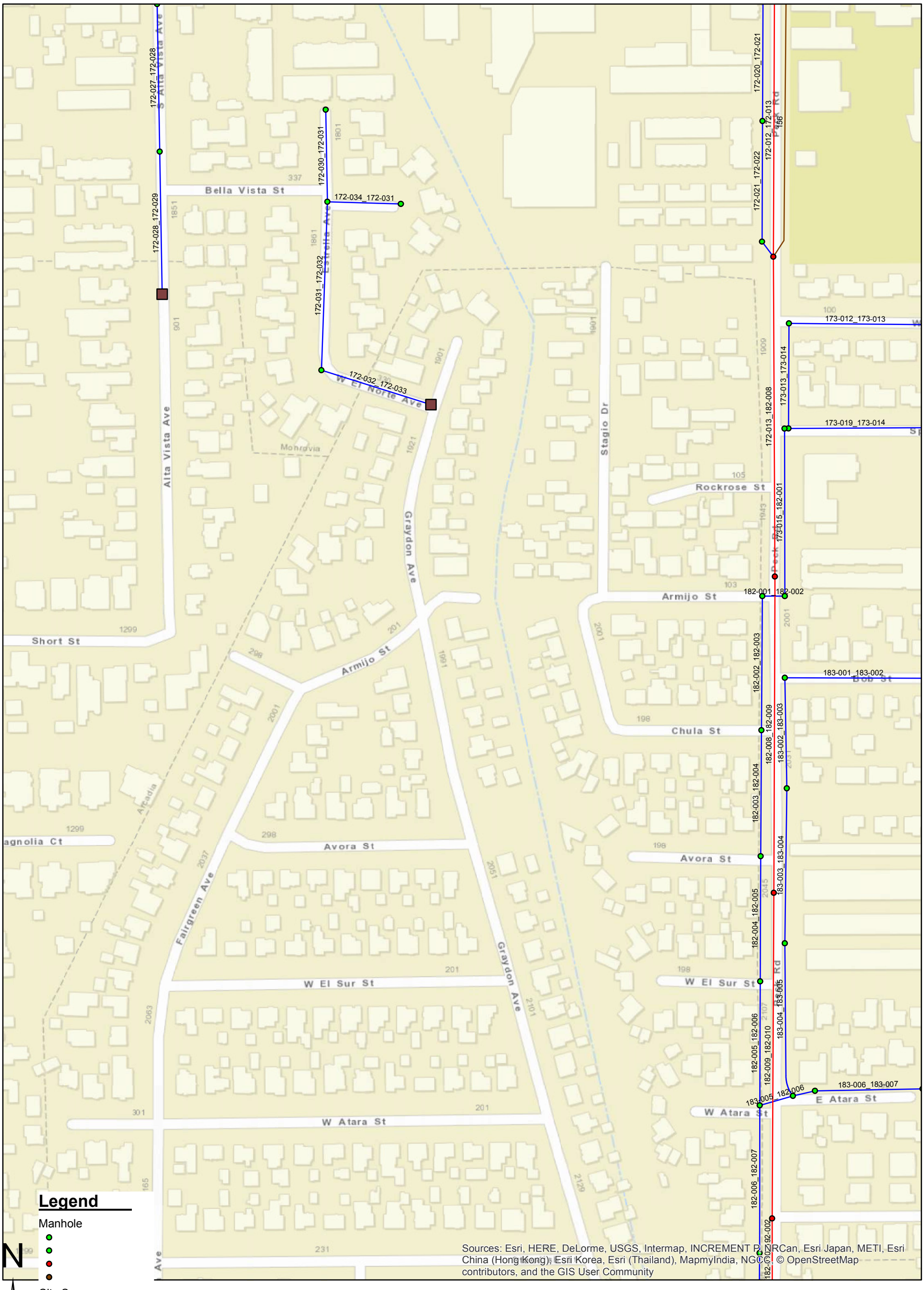
LAND_USE

0

1

2

DAVID EVANS AND ASSOCIATES INC.



Legend

Manhole

City Sewer

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TYPE

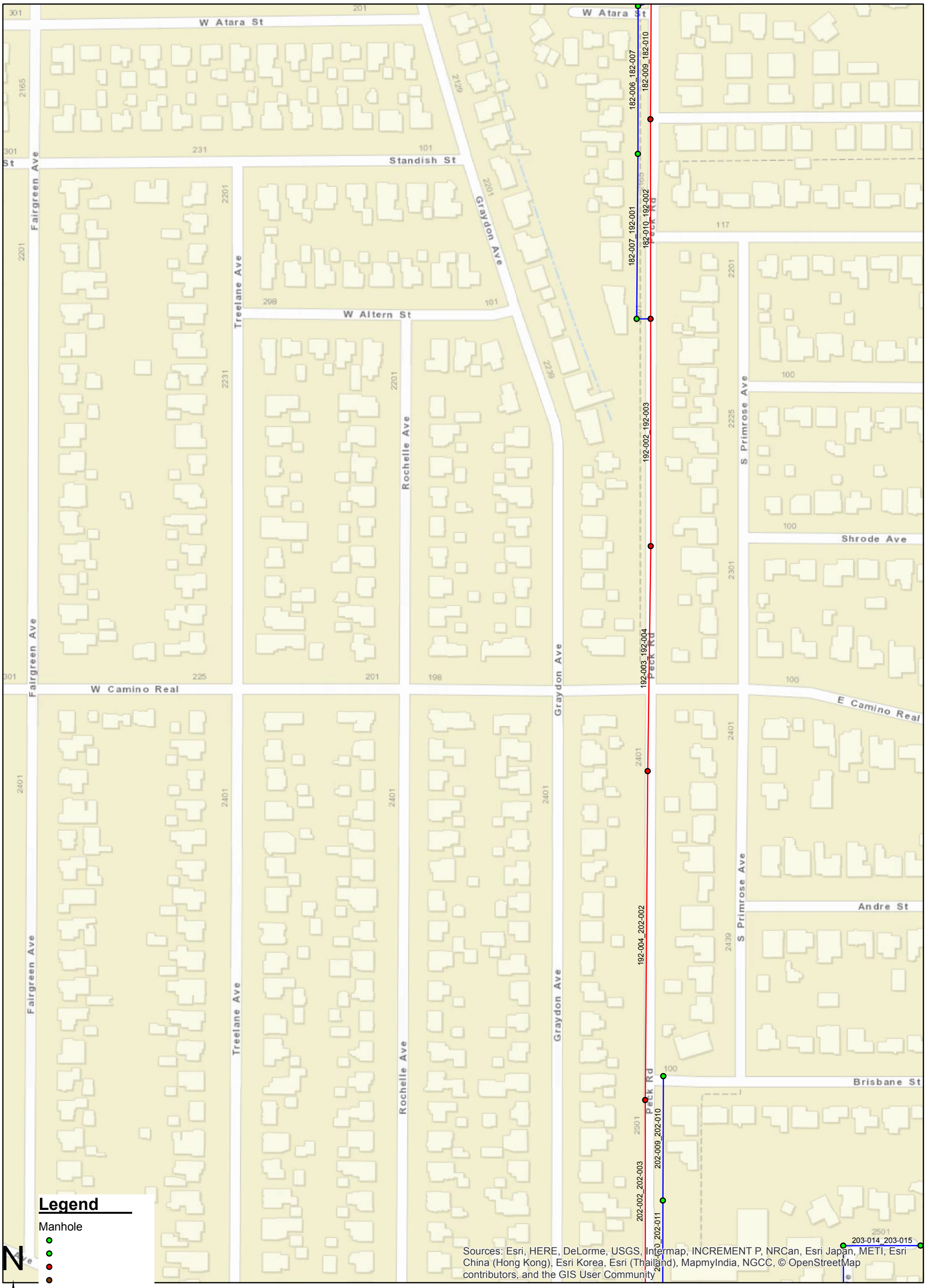
Active

Domain

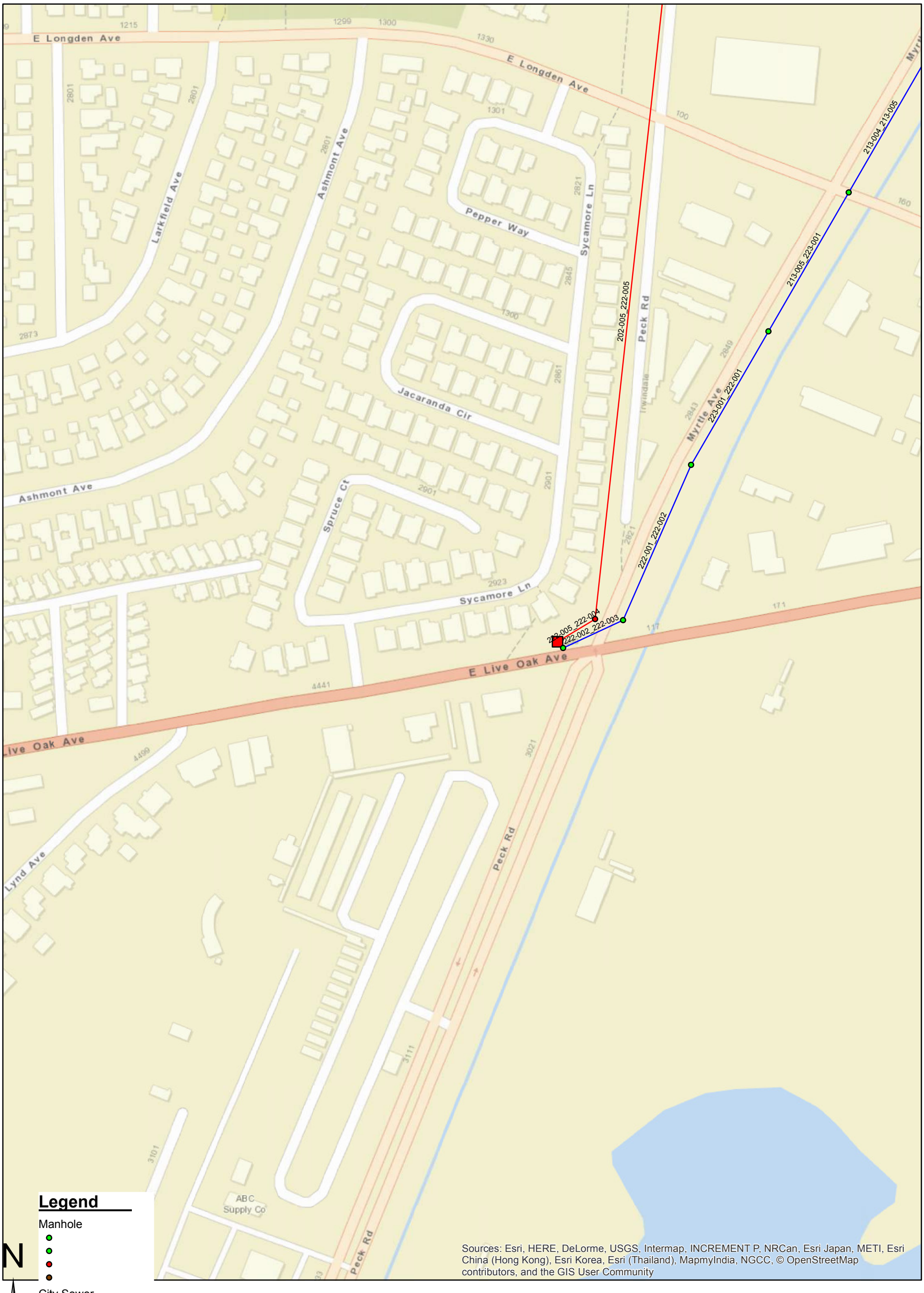
Inactive

N

DAVID EVANS AND ASSOCIATES INC.


W Atara St
Standish St
W Altern St
W Camino Real
E Camino Real
Andre St
Brisbane St
Shrode Ave
Fairgreen Ave
Treelane Ave
Rochelle Ave
Graydon Ave
S Primrose Ave
Peck Rd
182-006_182-007
182-009_182-010
182-007_192-001
182-010_192-002
192-002_192-003
192-003_192-004
192-004_202-002
202-002_202-003
202-009_202-010
202-010_202-011
203-014_203-015
Legend
Manhole
City Sewer
<all other values>
TYPE
Active
Domain
Inactive
N
Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, © OpenStreetMap contributors, and the GIS User Community
DAVID EVANS AND ASSOCIATES INC.

DAVID EVANS AND ASSOCIATES INC.


E Longden Ave
Larkfield Ave
Ashmont Ave
Pepper Way
Sycamore Ln
Peck Rd
Jacaranda Cir
Spruce Ct
E Live Oak Ave
Lynd Ave
Myrtle Ave
ABC Supply Co
202-005_222-005
213-004_213-005
213-005_223-001
223-001_222-001
222-001_222-002
222-002_222-003
222-005_222-004
Legend
Manhole
City Sewer
<all other values>
TYPE
Active
Domain
Inactive
N
Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, © OpenStreetMap contributors, and the GIS User Community
DAVID EVANS AND ASSOCIATES INC.

Appendix C

LACSD Unit Factors by

Occupancies and Land Use

Estimated Average Daily Sewage Flows for Various Occupancies

Occupancy	Abbreviation	*Average daily flow	
Apartment Buildings:			
Bachelor or Single dwelling units	Apt	100	gal/D.U.
1 bedroom dwelling units	Apt	150	gal/D.U.
2 bedroom dwelling units	Apt	200	gal/D.U.
3 bedroom or more dwelling units	Apt	250	gal/D.U.
Auditoriums, churches, etc.	Aud	5	gal/seat
Automobile parking	P	25	gal/1000 sq ft gross floor area
Bars, cocktails lounges, etc.	Bar	20	gal/seat
Commercial Shops & Stores	CS	100	gal/1000 sq ft gross floor area
Hospitals (surgical)	HS	500	gal/bed
Hospitals (convalescent)	HC	85	gal/bed
Hotels	H	150	gal/room
Medical Buildings	MB	300	gal/1000 sq ft gross floor area
Motels	M	150	gal/unit
Office Buildings	Off	200	gal/1000 sq ft gross floor area
Restaurants, cafeterias, etc.	R	50	gal/seat
Schools:			
Elementary or Jr. High	S	10	gal/student
High Schools	HS	15	gal/student
Universities or Colleges	U	20	gal/student
College Dormitories	CD	85	gal/student

*Multiply the average daily flow by 2.5 to obtain the peak flow

Zoning Coefficients

Zone	Coefficient (cfs/Acre)
Agriculture	**0.001**
Residential+:	
R-1	**0.004**
R-2	**0.008**
R-3	**0.012**
R-4	**0.016***
Commercial:	
C-1 through C-4	**0.015***
Heavy Industrial:	
M1 through M-4	**0.021***

***Individual building, commercial or industrial plant capacities shall be the determining factor when they exceed the coefficients shown**

+ Use 0.001 (cfs/unit) for condominiums only

TABLE 1

LOADINGS FOR EACH CLASS OF LAND USE

DESCRIPTION	UNIT OF MEASURE	FLOW (Gallons Per Day)	COD (Pounds Per Day)	SUSPENDED SOLIDS (Pounds Per Day)
RESIDENTIAL				
Single Family Home	Parcel	260	1.22	0.59
Duplex	Parcel	312	1.46	0.70
Triplex	Parcel	468	2.19	1.05
Fourplex	Parcel	624	2.92	1.40
Condominiums	Parcel	195	0.92	0.44
Single Family Home (reduced rate)	Parcel	156	0.73	0.35
Five Units or More	No. of Dwlg. Units	156	0.73	0.35
Mobile Home Parks	No. of Spaces	156	0.73	0.35
COMMERCIAL				
Hotel/Motel/Rooming House	Room	125	0.54	0.28
Store	1000 ft^2	100	0.43	0.23
Supermarket	1000 ft^2	150	2.00	1.00
Shopping Center	1000 ft^2	325	3.00	1.17
Regional Mall	1000 ft^2	150	2.10	0.77
Office Building	1000 ft^2	200	0.86	0.45
Professional Building	1000 ft^2	300	1.29	0.68
Restaurant	1000 ft^2	1,000	16.68	5.00
Indoor Theatre	1000 ft^2	125	0.54	0.28
Car Wash				
Tunnel - No Recycling	1000 ft^2	3,700	15.86	8.33
Tunnel - Recycling	1000 ft^2	2,700	11.74	6.16
Wand	1000 ft^2	700	3.00	1.58
Financial Institution	1000 ft^2	100	0.43	0.23
Service Shop	1000 ft^2	100	0.43	0.23
Animal Kennels	1000 ft^2	100	0.43	0.23
Service Station	1000 ft^2	100	0.43	0.23
Auto Sales/Repair	1000 ft^2	100	0.43	0.23
Wholesale Outlet	1000 ft^2	100	0.43	0.23
Nursery/Greenhouse	1000 ft^2	25	0.11	0.06
Manufacturing	1000 ft^2	200	1.86	0.70
Dry Manufacturing	1000 ft^2	25	0.23	0.09
Lumber Yard	1000 ft^2	25	0.23	0.09
Warehousing	1000 ft^2	25	0.23	0.09
Open Storage	1000 ft^2	25	0.23	0.09
Drive-in Theatre	1000 ft^2	20	0.09	0.05

TABLE 1
(continued)
LOADINGS FOR EACH CLASS OF LAND USE

DESCRIPTION	UNIT OF MEASURE	FLOW (Gallons Per Day)	COD (Pounds Per Day)	SUSPENDED SOLIDS (Pounds Per Day)
COMMERCIAL				
Night Club	1000 ft^2	350	1.50	0.79
Bowling/Skating	1000 ft^2	150	1.76	0.55
Club	1000 ft^2	125	0.54	0.27
Auditorium, Amusement	1000 ft^2	350	1.50	0.79
Golf Course, Camp, and Park (Structures and Improvements	1000 ft^2	100	0.43	0.23
Recreational Vehicle Park	No. of Spaces	55	0.34	0.14
Convalescent Home	Bed	125	0.54	0.28
Laundry	1000 ft^2	3,825	16.40	8.61
Mortuary/Cemetery	1000 ft^2	100	1.33	0.67
Health Spa, Gymnasium				
With Showers	1000 ft^2	600	2.58	1.35
Without Showers	1000 ft^2	300	1.29	0.68
Convention Center, Fairground, Racetrack, Sports Stadium/Arena	Average Daily Attendance	10	0.04	0.02
INSTITUTIONAL				
College/University	Student	20	0.09	0.05
Private School	1000 ft^2	200	0.86	0.45
Church	1000 ft^2	50	0.21	0.11

Appendix D

Capacity Analysis Results

Pipe ID	U/S MH ID	D/S MH ID	Size (inch)	Length (ft)	Slope (ft/ft)	Existing Peak Flow in Model (mgd)	Existing Maximum d/D	Proposed Peak Flow in Model (mgd)	Proposed Maximum d/D	d/D Criteria	Remark
152-029_162-018	152-029	162-018	6	338	0.019	0.170	0.43	0.170	0.43	0.5	PASS
162-018_162-019	162-018	162-019	6	20	0.0835	0.188	0.31	0.188	0.31	0.5	PASS
162-019_162-020	162-019	162-020	10	319	0.0227	0.188	0.22	0.188	0.22	0.5	PASS
162-020_162-021	162-020	162-021	10	247	0.0196	0.199	0.23	0.199	0.23	0.5	PASS
162-021_162-022	162-021	162-022	10	349	0.0314	0.257	0.23	0.657	0.38	0.5	PASS
162-022_172-007	162-022	172-007	10	387	0.0062	0.329	0.40	0.770	0.68	0.5	FAIL
172-007_172-008	172-007	172-008	24	10	0.007	3.989	0.42	4.393	0.45	0.75	PASS
160	172-008	172-009	18	308	0.0019	1.710	0.60	1.868	0.63	0.75	PASS
172-009_172-010	172-009	172-010	24	51	0.0069	4.017	0.43	4.491	0.46	0.75	PASS
172-010_172-011	172-010	172-011	24	11	0.0091	4.294	0.41	4.810	0.44	0.75	PASS
172-011_172-012	172-011	172-012	24	35	0.0043	6.286	0.65	6.854	0.69	0.75	PASS
172-012_172-013	172-012	172-013	24	605	0.0045	6.295	0.64	6.863	0.68	0.75	PASS
172-013_182-008	172-013	182-008	24	639	0.0168	6.324	0.43	6.892	0.45	0.75	PASS
182-008_182-009	182-008	182-009	24	632	0.0068	6.328	0.56	6.896	0.59	0.75	PASS
182-009_182-010	182-009	182-010	24	651	0.0115	6.331	0.48	6.899	0.50	0.75	PASS
182-010_192-002	182-010	192-002	24	398	0.0166	6.335	0.43	6.904	0.45	0.75	PASS
192-002_192-003	192-002	192-003	24	453	0.0074	6.446	0.55	7.015	0.58	0.75	PASS
192-003_192-004	192-003	192-004	24	449	0.0072	6.446	0.56	7.015	0.59	0.75	PASS
192-004_202-002	192-004	202-002	24	656	0.0087	6.446	0.53	7.015	0.55	0.75	PASS
202-002_202-003	202-002	202-003	24	652	0.0074	6.446	0.55	7.015	0.58	0.75	PASS
202-003_202-004	202-003	202-004	24	165	0.0076	6.446	0.55	7.015	0.58	0.75	PASS
202-004_202-005	202-004	202-005	24	53	0.0079	6.447	0.54	7.016	0.57	0.75	PASS
202-005_222-005	202-005	222-005	24	2,235	0.0071	6.448	0.56	7.018	0.59	0.75	PASS
222-005_222-004	222-005	222-004	24	88	0.0091	6.448	0.52	7.018	0.55	0.75	PASS
172-008_172-009	172-008	172-009	24	308	0.0019	2.282	0.45	2.529	0.48	0.75	PASS
163-027_163-028	163-027	163-028	8	240	0.0047	0.009	0.10	0.009	0.10	0.5	PASS
163-028_163-029	163-028	163-029	8	203	0.0047	0.023	0.15	0.023	0.15	0.5	PASS
163-029_163-030	163-029	163-030	8	28	0.2229	0.029	0.07	0.130	0.14	0.5	PASS
163-030_162-029	163-030	162-029	8	330	0.0038	0.035	0.20	0.136	0.39	0.5	PASS
162-029_162-021	162-029	162-021	8	359	0.0123	0.049	0.17	0.262	0.41	0.5	PASS
163-031_163-029	163-031	163-029	8	223	0.0107	0.003	0.05	0.003	0.05	0.5	PASS
163-032_162-027	163-032	162-027	8	320	0.0101	0.003	0.04	0.003	0.04	0.5	PASS
162-027_162-028	162-027	162-028	8	317	0.0072	0.007	0.08	0.007	0.08	0.5	PASS
162-028_162-020	162-028	162-020	6	9	0.2855	0.009	0.05	0.009	0.05	0.5	PASS
163-007_163-008	163-007	163-008	8	420	0.0227	0.250	0.34	0.290	0.36	0.5	PASS
163-008_173-028	163-008	173-028	8	327	0.0175	0.275	0.38	0.315	0.41	0.5	PASS
173-028_173-029	173-028	173-029	8	454	0.008	0.281	0.48	0.321	0.52	0.5	FAIL
173-029_172-010	173-029	172-010	8	450	0.0039	0.288	0.61	0.329	0.66	0.5	FAIL
173-006_173-007	173-006	173-007	18	261	0.0056	1.981	0.47	1.981	0.47	0.75	PASS
173-007_173-008	173-007	173-008	18	320	0.0051	1.987	0.48	2.042	0.49	0.75	PASS
173-008_172-011	173-008	172-011	18	330	0.0055	1.993	0.47	2.047	0.48	0.75	PASS
163-033_163-034	163-033	163-034	8	117	0.0272	0.016	0.08	0.093	0.19	0.5	PASS
163-034_172-009	163-034	172-009	8	247	0.0304	0.025	0.10	0.102	0.20	0.5	PASS