Appendix M3 Water Supply Assessment

Appendices

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VALLEY COUNTY WATER DISTRICT

WATER SUPPLY ASSESSMENT

IRWINDALE GATEWAY PROJECT

IRWINDALE, CALIFORNIA

MARCH 2023

KEARNY
Real Estate Company

Prepared for: Kearny Real Estate Company

Prepared by:

Stetson Engineers Inc

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List of Acronyms

AFY	acre-feet per year
BDCP	Bay Delta Conservation Plan
CEQA	California Environmental Quality Act
cfs	cubic feet per second
CIC	Covina Irrigating Company
CVP	Central Valley Project
DCP	Drought Contingency Plan
DWR	Department of Water Resources
Eto	Reference Evapotranspiration
EWCP	Emergency Water Conservation Program
FY	fiscal year
IA	Irrigated Area
IE	Irrigation Efficiency
ITP	Incidental Take Permit
Main Basin	Main San Gabriel Basin
MGD	million gallons per day
MWD	Metropolitan Water District of Southern California
NMFS	National Marine Fisheries Service
PEIR	Programmatic Environmental impact Report
PF	Plant Factor
Project	Irwindale Gateway Project
RDA	Water Resource Development Assessment
SF	square feet
SGVMWD	San Gabriel Valley Municipal Water District
SWP	State Water Project
taf/year	thousand acre-feet per year
TVMWD	Three Valleys Municipal Water District
USFWS	U.S. Fish and Wildlife Service
USGVMWD	Upper San Gabriel Valley Municipal Water District
UWMP	Urban Water Management Plan
VCWD	Valley County Water District
WSA	Water Supply Assessment
WSAP	Water Supply Allocation Plan
WSCP	Water Shortage Contingency Plan

EXECUTIVE SUMMARY

The proposed “Irwindale Gateway Project” (Project) is located within the City of Irwindale. The proposed Project is located in Valley County Water District’s (VCWD) service area. The proposed Project will result in an additional water demand during an average/normal year of up to 101 acre-feet per year (AFY) by Fiscal Year (FY) 2024-25 and thereafter. VCWD’s estimated water demands with the Project are approximately 6,980 AFY by FY 2044-45. VCWD 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 VCWD (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 VCWD’s water supply sources, sufficient water supplies can be reasonably concluded to be fully reliable and available to meet VCWD’s existing demands and future demands through FY 2044-45, with the Project, including during single and multiple dry years (i.e. five-consecutive dry years).

1.0 INTRODUCTION

The proposed Irwindale Gateway Project (Project) is located east of the 10 Freeway, north of Live Oak Avenue, and southwest of Live Oak Lane in the City of Irwindale. The proposed Project will include three industrial warehouse buildings with a total of approximately 997,796 square feet (sf) of warehouse (954,796 sf) and office floor (43,000 sf) space. The Project will also include approximately 253,736 sf (5.8 acres) of landscaping, and surrounding parking areas (pavement) on a Project site of approximately 66.64 acres. The Project information used in this Water Supply Assessment (WSA) was based on a Project conceptual site plan prepared by HPA Architecture dated June 6, 2022 (see Appendix A). The proposed Project is located in the northwestern portion of Valley County Water District's (VCWD) service area as shown in Figure 1. The Project is located within the following Assessor Parcel Numbers:

- 8532-002-035
- 8532-002-044

The proposed Project includes an alternative with a layout consisting of two industrial warehouse buildings and a Battery Energy Storage System (BESS). The two warehouse buildings would include approximately 704,070 sf of warehouse (668,070 sf) and office floor (36,000 sf) space. The BESS would be located outdoors on approximately 15.94 acres within the Project site. Because the BESS is projected to have only minimal water demands (compared to a third warehouse building), this WSA is conservatively based on the projected water demands for the proposed Project based on the three industrial warehouse buildings.

1.1 Purpose and Scope of Assessment

The purpose of this WSA is to evaluate and confirm VCWD's ability to provide all public utility water service to the proposed Project. The reliability of future water supplies available to VCWD is based on VCWD's longstanding water rights and access to local groundwater and imported water supplies. Also, it is based on the Main San Gabriel

Basin Watermaster's and Upper San Gabriel Valley Municipal Water District's (USGVMWD) water management goals, supplemental imported water distribution programs, and the use of recycled water. This WSA evaluates all of VCWD's available water supply sources and projected water demands within its service area, including the Project area.

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 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 WSA was prepared pursuant to the requirements of the California Water Code for the approach, required information, and criteria to confirm VCWD 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 requirements included in the California Water Code. California Environmental Quality Act (CEQA) guidelines section 15083.5 contains similar provisions regarding consultation with water agencies for certain projects. VCWD's 2020 UWMP (June 2021), Metropolitan Water District of Southern California's (MWD) 2020 UWMP (June 2021), and USGVMWD's 2020 UWMP (June 2021), 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 VCWD 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 proposed Project are not included in VCWD's 2020 UWMP.

This WSA includes specific Project water demand estimates and available sources of water supply. VCWD will separately notify the Project developer of the specific water supply distribution system and infrastructure facilities required for VCWD to provide water utility service to the Project. Pursuant to information provided by VCWD, VWCD owns existing pipelines adjacent to the proposed Project, including a 12-inch diameter ductile iron pipeline along Live Oak Avenue, 12-inch diameter steel pipeline along Live Oak Lane, and a 12-inch diameter steel pipeline along Arrow Highway.

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 (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, including for proposed industrial projects having more than 650,000 sf of floor area[1]. If the water demands for the proposed developments have been accounted for in a recently adopted UWMP, the

[1] https://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?lawCode=WAT&sectionNum=10912

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.

2.0 VCWD'S WATER SUPPLY RELIABILITY

2.1 Historical Water Supply Production

VCWD was formed in 1925 and incorporated in January 1926 under the name of Baldwin Park County Water District. On January 1, 1978, Baldwin Park County Water District's name was officially changed to Valley County Water District. VCWD's service area encompasses an area of approximately 9.4 square miles and incorporates portions of the Cities Baldwin Park, Irwindale, West Covina and Azusa, as shown in Figure 1. VCWD is located approximately fifteen miles east of downtown Los Angeles.

VCWD's water supply sources include groundwater pumped from seven (7) active wells located in the Main San Gabriel Basin (Main Basin). VCWD can purchase treated imported water from Covina Irrigating Company (CIC). VCWD can also purchase treated imported water from MWD through USGVMWD (through the USG-9 connection). Table 1 provides VCWD's historical water supply production. Annual water supplies over the past 20 years, from Fiscal Year (FY) 2002-03 to FY 2021-22, have ranged from 6,374 acre-feet per year (AFY) to 11,744 AFY, with an average production of approximately 8,116 AFY. A discussion regarding VCWD's water supplies is provided below.

Table 1. VCWD's Historical Water Supply Production (AFY)

Fiscal Year	Groundwater Supplies (Main Basin)	MWD Imported Water (USG-9)	CIC Water	Total
2002-03	8,694	530	364	9,588
2003-04	3,019	8,116	609	11,744
2004-05	7,728	123	1,106	8,957
2005-06	9,074	0	0	9,074
2006-07	9,552	0	82	9,634
2007-08	8,837	0	163	9,000
2008-09	8,460	0	174	8,634
2009-10	6,476	1,679	158	8,313
2010-11	8,231	0	41	8,272
2011-12	7,976	0	0	7,976
2012-13	8,012	0	158	8,170
2013-14	8,163	0	0	8,163
2014-15	7,076	0	107	7,183
2015-16	6,374	0	0	6,374
2016-17	6,830	0	0	6,830
2017-18	7,236	0	0	7,236
2018-19	6,742	0	0	6,742
2019-20	6,871	0	0	6,871
2020-21	7,145	0	0	7,145
2021-22	6,418	0	0	6,418
Min	3,019	0	0	6,374
Max	9,552	8,116	1,106	11,744
Average	7,446	522	148	8,116

Notes:

Production from FY 2002-03 through FY 2014-15 from VCWD's 2015 UWMP

Main Basin production from FY 2015-16 through FY 2019-20 from VCWD's 2020 UWMP

Main Basin production from FY 2020-21 through FY 2021-22 from Main Basin Watermaster Annual Reports

Purchases of MWD water (through USG-9) from FY 2015-16 through FY 2021-22 from Main Basin Watermaster records

Purchases of CIC water from FY 2015-16 through FY 2021-22 from VCWD records

2.2 Water Supply Source – Main San Gabriel Basin

The Main San Gabriel Basin is a sub-basin of the San Gabriel Valley Basin pursuant to DWR Bulletin 118, Basin Number 4-013. The Main Basin is located within the San Gabriel Valley, which 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 the Upper Santa Ana River system. The total fresh water storage capacity of the Main 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 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 Main Basin groundwater supply. A description of the elements of the adjudication that allow efficient management of the Main Basin is included in the Main San Gabriel Basin Judgment[2]. Although there is no limit on the quantity of groundwater that may be extracted by Parties to the Main San Gabriel Basin adjudication, including VCWD, 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 Basin. Currently, VCWD's pumper's share is 3.01517 percent of the Operating Safe Yield of 150,000 AFY.

[2] https://www.watermaster.org/about-us (Amended Judgment)

2.2.1 Groundwater Wells

VCWD pumps groundwater from its four (4) active wells, including: Maine East, Maine West, Clinton O. Nixon East, and Clinton O. Nixon West, which are located within the Main Basin. These wells have a combined capacity of about 8,000 gallons per minute (gpm). In addition, VCWD pumps groundwater from three (3) additional wells for groundwater cleanup purposes, including Arrow (SA1-4), SA1-1, and Lante (SA1-3), which can be delivered to other water agencies.

Table 1 shows VCWD's historical groundwater production from the Main Basin, which ranged from 3,019 AFY to 9,552 AFY, with an average of approximately 7,446 AFY. The reliability of the Main Basin to meet all demands is discussed below in Section 2.1.2.

2.2.2 Main San Gabriel Basin Reliability

VCWD's primary water supply is from the Main Basin (additional water supply from MWD is discussed in Section 2.2.3). The 1973 Court adjudication required the efficient management of groundwater supplies. Historical water supplies used within the Main Basin to meet its demands are shown in Table 2 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 Basin. Table 3 provides rolling ten-year averages of the total water demand. Although historical total water demands in the Main 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 2. 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	
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	11,934	15,131	212,374
2017-18	197,461	12,039	209,500	4,204	16,562	20,766	230,266
2018-19	183,117	7,040	190,156	5,420	19,534	24,954	215,110
2019-20	183,253	9,331	192,584	6,026	20,310	26,335	218,919
2020-21	196,601	11,221	207,822	5,146	19,267	24,413	232,235
2021-22	177,649	8,402	186,051	5,069	24,588	29,657	215,708
10-Year Average	191,854	9,821	201,675	4,916	17,165	22,081	223,756

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 Reports (including Draft 2021-22 Report)

Table 3. 10-Year Rolling Average of Total Main San Gabriel Basin Water Demands

Fiscal Year	10-Year Rolling Average	Annual Change of 10-Year Average
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	245,929	-3.8%
2017-18	240,122	-2.4%
2018-19	234,394	-2.4%
2019-20	230,868	-1.5%
2020-21	230,294	-0.2%
2021-22	227,106	-1.4%

Source: Main San Gabriel Basin Watermaster Annual Reports. 10-Year Rolling Average based on Table 2.

Future total water demands in the Main Basin can be projected based on population growth. Population projections within the Main Basin were based on population data provided in USGVMWD's 2020 UWMP, San Gabriel Valley Municipal Water District's (SGVMWD's) 2020 UWMP, and TVMWD's 2020 UWMP. Based on the population data, the total population within the combined service areas for all Main Basin water producers was estimated (see Table 4). The total population served by Main Basin water producers is projected to increase from approximately 1,216,931 people, in 2020, to approximately 1,309,992 people, in 2045. This represents an increase of approximately 93,100 people over twenty-five years, which is an average annual growth rate of approximately 0.3 percent.

Table 4. Projected Population Served by Main San Gabriel Basin Producers

Fiscal Year	Population
2019-20	1,216,931
2024-25	1,235,034
2029-30	1,253,752
2034-35	1,274,134
2039-40	1,292,099
2044-45	1,309,992

Source:

Population projections from USGVMWD's 2020 UWMP, SGVMWD's 2020 UWMP, and TVMWD's 2020 UWMP. All of USGMWD's projected population, and portions of SGVWD's and TVMWD's projected populations, are considered within the Main Bain.

Total water demands in the Main 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. Over the past five years, between FY 2017-18 and FY 2021-22 (see Table 5), the average annual demand in the Main Basin was approximately 222,488 AFY; the average total export to the Central Basin was approximately 38,356 AFY; and the average total major industrial demand was approximately 5,765 AFY. Based on the net average demand over the recent five years in the Main Basin of approximately 178,326 (or 222,488 – 38,356 – 5,767) AFY and a 2020 population in the Main Basin of approximately 1,216,931 people, the average annual per capita water use rate was approximately 0.15 AFY (178,326 AFY / 1,216,931 people) per person. For the purposes of this WSA, it is assumed the per capita water use rate of 0.15 AFY (about 131 gallons per capita per day) will continue over the next twenty years (through FY 2044-45). Based on the estimated per capita water use and projected population growth, total water (local plus treated imported) served by producers in the Main Basin will increase from approximately 215,708 AFY, in FY 2021-22, to approximately 236,084 AFY, in FY 2044-45, as shown in Table 5, with an annual growth rate of approximately 0.4 percent.

Table 5. 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		
2017-18	--	185,404	38,828	6,034	230,266	20,766	209,500
2018-19	--	172,050	36,917	6,143	215,110	24,954	190,156
2019-20	--	175,334	37,330	6,255	218,919	26,335	192,584
2020-21	--	186,555	40,213	5,467	232,235	24,413	207,822
2021-22	--	172,287	38,495	4,926	215,708	29,657	186,051
5-Year Average		**178,326**	**38,356**	**5,765**	**222,448**	**25,225**	**197,222**
2024-25	1,235,034	180,979	38,356	5,765	225,100	25,225	199,875
2029-30	1,253,752	183,722	38,356	5,765	227,843	25,225	202,618
2034-35	1,274,134	186,709	38,356	5,765	230,830	25,225	205,605
2039-40	1,292,099	189,341	38,356	5,765	233,463	25,225	208,237
2044-45	1,309,992	191,963	38,356	5,765	236,084	25,225	210,859

Notes:

[1] See Table 4

[2] Projected demands based on an average annual water use rate of approximately 0.15 AFY per capita which is about 135 gallons per capita per day

[3] Projected exports are based on average exports between fiscal years 2017-18 and 2021-22.

[4] Based on average industrial demands between fiscal years 2017-18 and 2021-22; assumed to remain constant0

[5] See Table 2

Producers in the Main 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 Basin have a share of the Operating Safe Yield of the Main 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 Basin. Untreated imported water for replacement/recharge purposes is purchased from one of three municipal water

districts overlying or partially overlying the Main 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. VCWD is located within USGVMWD's service area. The management of the Main Basin and the large volume of groundwater in storage allow groundwater producers, VCWD, 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 VCWD, to store supplemental water within the Main Basin for the purpose of supplying a future Replacement Water requirement. For example, VCWD and other producers have added/deducted from cyclic storage accounts and as a result, have a total balance of approximately 64,486 AF in cyclic storage accounts as of June 2022 illustrating the effectiveness of this water resource program in meeting the Replacement Water requirements of water producers.

The Replacement Water requirement in the Main Basin is determined by the Operating Safe Yield, production rights and Main Basin production. The Operating Safe Yield in the Main Basin has averaged 150,000 AFY over the past five (5) years (FY 2017-18 through FY 2021-22) plus the surface water rights are fixed at about 10,500 acre-feet for a total of about 160,500 acre-feet of water rights. As shown in Table 6, over the past five (5) years (FY 2017-18 through FY 2021-22), the average water production from the Main Basin has been approximately 197,222 AFY, and the average Replacement Water requirements and Cyclic Storage deductions (total Basin over production) has been approximately 35,543 AFY.

Based on the projected water demands (see Table 5) and the recent historical average water production of 197,222 AFY (during FY 2017-18 through FY 2021-2 as shown in Table 6) in the Main 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 25,225 AFY of treated MWD imported water (discussed below). The projected FY 2024-25 total local water demands less direct delivery (199,875 AFY), as shown on Table 5, can be compared with the recent historical

average local water production (197,222 AFY), as shown on Table 6, to determine the incremental additional Replacement Water requirement (2,653 AFY = 199,875 – 197,222). The total projected Replacement Water requirement is estimated to be the sum of the recent historical average Replacement Water requirement (including deductions from Producer Cyclic Storage) (35,543 AFY) and the incremental additional Replacement Water requirement (2,653 AFY by FY 2024-25).

Table 6. Operation of Main San Gabriel Basin (AFY)

Fiscal Year	Total Production [1]	Direct Deliveries [1]	Replacement Water Requirements and Cyclic Storage Deductions [2]
2017-18	209,500	20,766	40,368
2018-19	190,156	24,954	37,233
2019-20	192,584	26,335	35,966
2020-21	207,822	24,413	35,685
2021-22	186,051	29,657	28,461
5-Year Average	**197,222**	**25,225**	**35,543**

Notes:

[1] See Table 2

[2] Includes Replacement Water Requirements and deductions from Producer Cyclic Storage. From Main San Gabriel Basin Annual Report for FY 2021-22 Appendix I

For the purpose of this WSA, the adopted 2022-23 Operating Safe Yield of 150,000 AFY (which was influenced by the decreasing water levels in the Main 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 (including deductions from producer cyclic storage accounts) in FY 2024-25 is estimated to be about 38,195 AFY (35,543 + 2,653).

In addition to untreated supplemental replacement/recharge deliveries, treated imported water is available to Main Basin water producers as a direct delivery (see Table 2). Over the past five years, total direct deliveries of treated imported water have ranged from approximately 20,800 AFY to 29,700 AFY, with an average of approximately

25,225 as shown in Table 6. Demands for direct delivery water in the Main 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 25,225 AFY and the projected FY 2024-25 Replacement Water requirement of 38,195 AFY, the projected total current imported water demand in FY 2024-25 is approximately 63,420 (25,225 + 38,195) AFY based on an Operating Safe Yield of 150,000 AFY. Table 7 projects the total future imported water requirement, which includes replacement/cyclic and direct delivery (also includes Water Resource Development Assessment deliveries which are discussed in Section 2.1.3) for producers in the Main Basin. Table 7 also provides the projected deliveries of advanced treated wastewater from the “Pure Water Southern California” program (discussed in Section 2.1.4) which offset up to 65,000 AFY of imported water deliveries to the Main Basin. As a result, Table 7 shows that total imported water requirement would be reduced significantly by FY 2034-35. 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 Basin water demands listed in Table 7 will be met by the Pure Water Southern California program as well as untreated imported water for groundwater recharge. The reliability of imported water supplies is discussed further in Section 2.2.1.

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

Fiscal Year	2024-25	2029-30	2034-35	2039-40	2044-45
OSY of 150,000 AFY					
Untreated Imported Water					
Replacement Water Requirement and Cyclic Storage Deduction [1]	38,195	40,938	43,925	46,557	49,179
RDA and/or Basin Augmentation [2]	35,000	35,000	35,000	35,000	35,000
Sub Total	73,195	75,938	78,925	81,557	84,179
Treated Imported Water [3]	25,225	25,225	25,225	25,225	25,225
Total Imported Water Requirement	**98,420**	**101,163**	**104,150**	**106,783**	**109,405**
Potential Deduction from Pure Water Project [4]	0	0	(65,000)	(65,000)	(65,000)

Notes:

[1] The total projected Replacement Water requirement is estimated to be the sum of the recent historical average Replacement Water requirement (including deductions from Producer Cyclic Storage) and the projected incremental additional Replacement Water requirement.

[2] RDA and/or basin augmentation is anticipated to continue

[3] Based on Table 6

[4] See Section 2.1.4

2.2.3 Supplemental Water Augmentation Program

The Water Resource Development Assessment, or RDA, was developed by the Main San Gabriel Basin Watermaster to help manage the Main Basin water supplies under the perceived "worst case" hydrologic conditions, which was assumed to be two additional consecutive 5-year droughts, using the same hydrologic conditions as the recent FY 2011-12 through 2015-16 severe drought. Based upon ten (10) additional consecutive years of drought, the RDA Program is intended to purchase imported replenishment water (when available), for stormwater augmentation, to maintain the Baldwin Park Key Well (Key Well) elevation above 180 feet by the end of the tenth year. This Key Well elevation essentially ensures continued Main Basin water supply to the Main San Gabriel Basin Producers under a worst case, 15-year sustained drought. The RDA Program has a current assessment of $175/AF on all FY 2022-23 and FY 2023-24

production. The Main San Gabriel Watermaster will use the RDA funds to purchase untreated imported water to replenish the Main Basin for the "general benefit" of all Producers within the Main Basin. The RDA untreated imported water will supplement local stormwater replenishment, enhance overall Main Basin conditions, and have "no right of recovery" using a water right, by any Main Basin Producer. Over the past several years, RDA deliveries have ranged from about 31,400 AFY to 41,300 AFY. It is anticipated the projected continued annual RDA deliveries will average about 35,000 AFY, as shown in Table 7.

2.2.4 Pure Water Southern California

MWD is currently developing the Pure Water Southern California program to provide up to 150 million gallons per day (MGD) (approximately 168,000 AFY) of advanced treated wastewater from Los Angeles County Sanitation District's (LACSD's) Joint Water Pollution Control Plant in Carson, California (Carson Plant)[3]. The Pure Water Southern California program would deliver purified water from the Carson Plant through up to 60 miles of transmission pipelines to groundwater basins within MWD's service area, including the Main Basin (Santa Fe Spreading Grounds and the San Gabriel Canyon Spreading Grounds). Pursuant to an August 20222 presentation provided by MWD, Pure Water Southern California program could potentially deliver up to 65,000 AFY to the Main Basin beginning in 2032. These deliveries would help restore water levels in the Main Basin and reduce the need for imported water.

[3] https://www.mwdh2o.com/building-local-supplies/pure-water-southern-california/

2.3 Imported Water Supplies

VCWD can receive direct deliveries of treated imported water from MWD through its USG-9 connection, which has a capacity of 29 cubic feet per second (cfs), or about 21,000 AFY if used continuously. VCWD historically has not utilized treated imported water supplies to meet demands over the past 12 years, as shown in Table 1.

As discussed in Section 2.1.2, 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 for groundwater replenishment purposes. Further discussions of imported water supplies are provided in Sections 2.2.1 through 2.2.3.

2.3.1 SWP Water Reliability

MWD contracts 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 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 1960s 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. MWD currently has a contractual 'Table A' amount of 1,911,500 AFY of SWP water ('Table A' represents the proportion of available SWP water allocated and delivered to each SWP contractor). The delivery reliability of SWP water is discussed below.

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. In order to mitigate these potential risks, State and federal resources and environmental protection agencies and a broad range of stakeholders are involved in a multiyear planning process to develop programs to greatly improve the capacity and reliability of the SWP and the environmental conditions of the Bay-Delta, including projects related to DWR's SWP conveyance capacity, water quality, and operation of the SWP.

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 in February 2016, September 2016, April 2018, July 2019, and March 2020. The Delta Plan contains a set of 14 regulatory policies as well as 95 recommendations, which are non-regulatory but identify actions essential to increasing water supply reliability while protecting, restoring, and enhancing the Delta ecosystem. In May 2020, the Delta Stewardship Council authorized the Ecosystem Amendment for environmental review under CEQA. As a result, a draft Program Environmental Impact Report (PEIR) was prepared and made available for public comment in September 2021. A June 2022 Final PEIR was prepared in response to comments received on the Draft PEIR. In June 2022, the Delta Stewardship Council certified the Final PEIR and adopted the Ecosystem Amendment. The Delta Stewardship Council also authorized staff to initiate rulemaking for new and revised Delta Plan policies and mitigation measures included in the Ecosystem Amendment and PEIR. The Delta Stewardship Council is also currently considering an amendment to

Chapter 7 (Delta Levees Investment Strategy, or DLIS). The DLIS is a multiyear project to update the Delta Plan's 2013 interim priorities for flood risk reduction and to guide the prioritization of Delta investments that reduce flood risk and better integrate Delta levees with other Delta actions and statewide flood control. The Delta Stewardship Council approved the DLIS priorities in 2018, however the amendment was rescinded in order to evaluate new levee geometry and hydraulic data. In August 2021, the Delta Stewardship Council directed staff to reinitiate the rulemaking process for DLIS.

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 was placed on hold. In April 2020, the Third District Court of Appeal (Appellate Court) sided with the Delta Stewardship Council on all remaining issues from the 2013 lawsuit, and

found the alleged failure to have sufficient performance measures and to promote conveyance options were both moot because of subsequent amendments to the Delta Plan. In August 2020, the California Supreme Court declined a petition for review made by State Water Contractors in response to the Appellate Court decision. As a result, the central role of the Delta Stewardship Council in Delta water management and land use remains intact and is the governing law[4].

Governor Jerry 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 draft "State Water Project Delivery Capability Report 2021" (2021 Report), dated December 31, 2021, indicates that there is a 67 percent likelihood (72 percent in the 2019 Final State Water Project 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 2021 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. In August 2016, the United States Bureau of Reclamation (USBR) and DWR requested reinitiating consultation with the USFWS and the NMFS on long-term operations of the Central Valley Project (CVP) and SWP due to new information and science on declining fish species populations. The USFWS and the NMFS released the "Biological Opinion for the Reinitiation of Consultation on the Coordinated Operations of the CVP and SWP", dated October 2019, included

[4] https://www.deltacouncil.ca.gov/pdf/news-release/2020-08-12-supreme-court-upholds-delta-plan-affirms-council-authority-for-sustainable-management-of-the-delta.pdf

proposed CVP and SWP operations plans. In February 2020, the USBR approved a Record of Decision regarding modifications to long-term operations of the CVP. The USBR and DWR anticipate new Biological Opinions for the CVP and SWP. DWR will also be an applicant in the consultation and that the California Department of Fish and Wildlife will facilitate the process of DWR updating their Incidental Take Permit for SWP operations. The 2021 Report also incorporated DWR operations as a result of the new Incidental Take Permit (ITP) issued by the California Department of Fish and Wildlife to DWR in March 2020. The ITP covers fish species (including the Delta smelt, Longfin smelt, winter-run Chinook salmon and spring-run Chinook salmon) which are subject to incidental take through long-term operation of the SWP.

In April and May of 2019, Governor Gavin Newsom announced a new approach for Delta water conveyance through a single tunnel alternative (to improve delivery reliability) and released Executive Order 10-19 directing state agencies to assess new planning for the single tunnel project (Delta Conveyance Project). DWR subsequently withdrew all project approvals and permit applications for the previously proposed twin tunnels project under the California WaterFix and Bay Delta Conservation Plan (BDCP). DWR released a “Notice of Preparation of Environmental Impact Report for the Delta Conveyance Project” in January 2020 to start planning for the Delta Conveyance Project. DWR also released a scoping summary report in July 2020. In July 2022, DWR released a Draft Environmental Impact Report with a public review period from July 2022 through October 2022. The proposed Delta Conveyance Project evaluates eight conveyance alternatives in addition to the proposed project consisting of the following new Delta facilities:

- Two new 3,000 cfs intake facilities in the north Delta to divert water, for a total capacity of 6,000 cfs
- One below ground tunnel to convey that water from the new intakes following the Eastern Alignment, ending at the existing Bethany Reservoir on the California Aqueduct
- A new pumping plant that connects the tunnel directly to the Bethany Reservoir

On November 9, 2021, MWD adopted a resolution declaring a Regional Drought Emergency and called upon its Member Agencies to reduce use of SWP supplies. MWD's Member Agencies which depend on the SWP include the Los Angeles Department of Water and Power, Calleguas Municipal Water District, Las Virgenes Municipal Water District, USGVMWD, TVMWD, and Inland Empire Utilities Agency). MWD requested these six agencies to implement actions they deem necessary under their Water Shortage Contingency Plans, including enforcing restrictions limiting outdoor water days and lowering the amount of water allowed under a first-tier price. MWD's resolution also provides MWD's General Manager with authority to take actions needed to address the regional drought emergency, including the following: enhance local water production, recycling, conservation, and storage; purchase, transfer, and exchange water supplies; procure equipment, materials, services, and supplies; and provide media buying and placement services for a water awareness and conservation advertising campaign. MWD also expanded several water saving programs including increased rebates for turf removal and providing additional funding for rebate programs for water-efficient toilets and devices.

In April 2022, MWD recently executed an Emergency Water Conservation Program (EWCP) to adopt a framework to reduce non-essential water use and preserve available supply for the greatest public benefit in SWP-dependent areas, including USGVMWD. As part of the EWCP, MWD will seek SWP water offered by DWR for "human health and safety purposes" to reduce any potential water supply and demand gaps for its member agencies. MWD's EWCP allows the following two (2) paths for compliance.

- Path 1 requires an MWD member agency that depends on SWP supplies to cut water use by implementing one-day-a-week watering restrictions by June 1, 2022 and potentially implementing no outdoor watering restrictions by September 1, 2022 if necessary. Noncompliant agencies will face penalties up to $2,000 per AF.

- Path 2 allows an MWD member agency to comply with monthly allocation limits (i.e. volumetric limits) directly. The specific limit is based on an allocated share of the water for human health and safety purposes and certain additional

imported water supplies delivered through the SWP system. Member agencies which meet these limits will be deemed compliant with the EWCP, and non-compliant agencies will face the same volumetric penalties under Path 1.

MWD has also requested its member agencies in SWP dependent areas implement a Shortage Level 2 (20%) or higher, consistent with their WSCPs, pursuant to Executive Order N-7-22 issued on March 28, 2022 by California Governor Gavin Newsom.

MWD has been working on near and long term projects and programs to help alleviate the drought and impact on the SWP system. MWD adjusted its distribution system operations in January 2021 to minimize SWP use and draw heavily on the Colorado River and stored supplies. MWD has increased pumping on the Colorado River Aqueduct to the total capacity of eight pumps. MWD initiated a “reverse-cyclic” program in February 2022 to defer deliveries to allow member agencies to purchase water in Calendar Year 2022 for delivery in a future wet year. In addition, per MWD’s presentation on May 12, 2022, MWD projected sufficient Colorado River water supplies will be available during FY 2022-23 to meet treated imported water demands. On August 16, 2022, MWD announced the Colorado River Basin States (including California) efforts to develop a plan to reduce Colorado River water demands by 2 to 4 million acre-feet. MWD will continue to explore additional engineering and infrastructure improvements to improve the resiliency and flexibility of its regional water-delivery system. MWD is also investing in drought-proof, climate change-resilient water supplies, including recycled water.

In June 2021, USGVMWD’s Board of Directors approved its 2020 UWMP and Water Shortage Contingency Plan (WSCP) to plan for and address future water shortages. USGVMWD's The WSCP describes USGVMWD’s historical and existing water conservation program, the status of implementation of Demand Management Measures, and projected future conservation implementation. USGVMWD’s WSCP describes the actions USGVMWD will take to reduced demands or increase supplies under 10, 20, 30, 40, 50 percent, and greater than 50 percent shortage conditions.

In August 2021, USGVMWD activated its WSCP, based on the increasing drought severity. This action authorized USGVMWD staff to expand public information and education activities throughout its service area to increase awareness about the importance of reducing water use due to dry conditions and preserving existing water supply storage.

Because of the current limited supply of SWP water and to ensure that such supplies are extended to the maximum extent feasible, the USGVMWD Board also adopted an Emergency Water Conservation Program in May 2022. Under the program, USGVMWD will continue to work with MWD to implement the volumetric option for human health and safety water deliveries (i.e. Path 2 as described above). USGVMWD will reinforce the actions under its WSCP - Level 2 to meet the required "robust conservation efforts" needed to receive these deliveries. Additionally, the program calls for the implementation of a 20 percent level of conservation and limitation of outdoor irrigation to two days per week for all of USGVMWD 's retail water agencies.

USGVMWD’s available water supplies are based on MWD’s allocation to USGVMWD. As discussed previously, MWD has executed its EWCP in response to greatly reduced allocations of SWP water offered by DWR. On May 12, 2022, MWD hosted a webinar and workshop for its Member Agencies, including USGVMWD, to discuss the annual assessment and provide guidance and recommendations. At this webinar, MWD provided SWP supply projections for FY 2022-23. MWD has estimated that approximately 12,600 AF of SWP supply will be available to USGVMWD during July 2022 through December 2022. This value represents the monthly volumetric limit for USGVMWD based on available SWP supplies and human health and safety requirements. MWD also estimates approximately 17,000 AF of SWP will be available to USGVMWD during January 2023 through June 2023. This value is estimated based on dry-year SWP supply projections using the hydrology assumptions followed in MWD’s 2020 UWMP which are apportioned to USGVMWD by population. Accordingly, USGVMWD’s total FY 2022-23 SWP projected supply is estimated at 29,600 AF.

2.3.2 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.

Under a 2007 agreement reached by the seven States of the Colorado River Basin, if Lake Mead's level drops to 1,075 feet, an official shortage would be declared. That declaration would trigger cuts in water deliveries to Arizona and Nevada. During 2019, the seven States of the Colorado River Basin developed two drought contingency plans: the Upper Basin Drought Contingency Plan (Upper Basin DCP) and the Lower Basin Drought Contingency Plan (Lower Basin DCP). The Upper Basin DCP is designed to: a) protect critical elevations at Lake Powell and help assure continued compliance with the 1922 Colorado River Compact, and b) authorize storage of conserved water in the Upper Basin that could help establish the foundation for a Demand Management Program that may be developed in the future. The Lower Basin DCP is designed to: a) require Arizona, California and Nevada to contribute additional water to Lake Mead storage at predetermined elevations, and b) create additional flexibility to incentivize additional voluntary conservation of water to be stored in Lake Mead. Under the Lower Basin DCP, the state of California is required to make the following annual DCP contribution based on projected January 1st Lake Mead elevations:

- Elevation above 1,040 feet and at or below 1,045 feet – 200,000 AF
- Elevation above 1,035 feet and at or below 1,040 feet – 250,000 AF

- Elevation above 1,030 feet and at or below 1,035 feet – 300,000 AF
- Elevation at or below 1,030 feet – 350,000 AF

On August 16, 2021, the USBR released the "Colorado River Basin August 2021 24-Month Study" used to set annual operations for Lake Powell and Lake Mead. Based on the results of the Study, the USBR declared the first federal water shortage declaration for the Colorado River Basin. Because of the 2019 DCP, California has so far been spared from cuts to its Colorado River supplies for 2022. In response to the continued drought conditions and the USBR declaration, MWD's Board of Directors declared a Water Supply Alert on August 17, 2021, calling for consumers and businesses to voluntarily reduce their water use and help preserve the region's storage reserves. A Water Supply Alert is the third of four escalating conditions in MWD's framework indicating the urgency of Southern California's need to save water. The action calls for water agencies to reduce their water demand through public awareness campaigns and by adopting local measures including increased outdoor water use efficiency, prohibiting home car washing or filling of ornamental water features, and requiring that restaurants only serve water upon request. MWD's declaration seeks to avoid the need for more severe actions, including moving to the fourth and final stage in MWD's framework. In addition, while shortages in the Colorado River can potentially impact water supplies, MWD owns priority rights to the Colorado River and water supply will not be impacted in the immediate future. In August 2021, MWD indicated that its supplies from the Colorado river would not be impacted in 2022 and may be impacted in 2023 and more likely in 2024, if the drought continues[5]. As discussed previously, during a Member Agency coordination meeting in May 2022, MWD indicated that Colorado River supplies could be assumed to be sufficient and available for its Member Agencies during FY 2022-23. In addition, on August 16, 2022, MWD announced the Colorado River Basin States (including California) efforts to develop a plan to reduce Colorado River water demands by 2 to 4 million acre-feet.

Historically, USGVMWD has purchased untreated Colorado River imported water supplies from MWD for groundwater replenishment of the Main Basin. However, in

[5] https://www.latimes.com/california/story/2021-08-17/amid-worsening-drought-mwd-declares-water-supply-alert

recent years, untreated Colorado River water has not been used for replenishment due to concerns with quagga mussels impacting distribution facilities and aquatic environments. MWD's Quagga Mussel Control Program will be implemented if untreated Colorado River water deliveries are made to the Main Basin.

2.3.3 Metropolitan Water District of Southern California

VCWD can purchase treated imported water from MWD through USG-9. In addition, MWD provides approximately 95 percent of the total imported water supplies to the Main 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 Basin for replacement/recharge. Treated imported water can be delivered directly to retail water utilities in the Main Basin with available connections.

MWD's 2020 UWMP provides information regarding MWD's water supply reliability and the ability to meet all projected water demands. MWD has indicated in its 2020 UWMP 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 years, even during a repeat of the worst drought scenario.

MWD's 2020 UWMP 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 2045. 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 2045.

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 2020 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.

Tables 8, 9, and 10 show MWD's projected total water supplies and demands through year 2045 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 2025 through 2045, even during multiple dry years. MWD's greatest water demands, which occur during a multiple dry year, will decrease from approximately 1,592,000, in 2025, to 1,564,000 AFY, in 2045.

Table 8. MWD's Projected "Average" Year Water Supplies and Demands (AFY)

Forecast Year	2025	2030	2035	2040	2045
Supplies (Current Programs)	3,899,000	3,893,000	3,890,000	3,888,000	3,885,000
Demands	1,427,000	1,388,000	1,362,000	1,378,000	1,403,000
Surplus	2,472,000	2,505,000	2,528,000	2,510,000	2,482,000
Supplies (Proposed Programs)	13,000	13,000	13,000	13,000	13,000
Potential Surplus	2,485,000	2,518,000	2,541,000	2,523,000	2,495,000

Source: MWD'S 2020 UWMP, June 2021, Table 2-6

Table 9. MWD's Projected "Single Dry" Year Water Supplies and Demands (AFY)

Forecast Year	2025	2030	2035	2040	2045
Supplies (Current Programs)	2,772,000	2,761,000	2,760,000	2,760,000	2,757,000
Demands	1,544,000	1,500,000	1,473,000	1,496,000	1,525,000
Surplus	1,228,000	1,261,000	1,287,000	1,264,000	1,232,000
Supplies (Proposed Programs)	0	0	0	0	0
Potential Surplus	1,228,000	1,261,000	1,287,000	1,264,000	1,232,000

Source: MWD'S 2020 UWMP, June 2021, Table 2-4

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

Forecast Year	2025	2030	2035	2040	2045
Supplies (Current Programs)	2,178,800	2,219,000	2,241,000	2,263,000	2,239,000
Demands	1,592,000	1,570,000	1,537,000	1,539,000	1,564,000
Surplus	586,800	649,000	704,000	724,000	675,000
Supplies (Proposed Programs)	0	0	0	0	0
Potential Surplus	586,800	649,000	704,000	724,000	675,000

Source: MWD'S 2020 UWMP, June 2021, Table 2-5

2.4 Covina Irrigating Company Supplies

VCWD is a shareholder of CIC and has purchased treated water from CIC. CIC's sources of supply include surface water diversions from the San Gabriel River, groundwater pumped from the Main Basin and untreated imported water purchased from TVMWD. CIC owns the Temple Plant, which is a surface water treatment plant located near the intersection of Arrow Highway and Grand Avenue in the City of Glendora, which is used to treat the local surface water and the imported water. The Temple Plant has a capacity of approximately 10 MGD. VCWD owns a 3.3 cfs connection with CIC to purchase water, however, VCWD historically has not utilized imported water supplies to meet demands over the past 7 years, as shown in Table 1. Pursuant to VCWD's 2020 UWMP, VCWD is not projected to purchase treated water supplies from CIC over the next 20 years, and through FY 2044-45.

3.0 PROJECTED WATER DEMANDS

3.1 VCWD Projected Water Demands

VCWD will provide potable water supplies to the proposed Project. VCWD's 2020 UWMP was completed and adopted in June 2021 and includes water demand and supply projections for VCWD's service area over the next twenty years. Water demands projected in VCWD's 2020 UWMP were calculated based on the urban per capita water use target developed per the Water Conservation Bill of 2009 (SB X7-7) and population projections within VCWD's service area. Methodologies for calculating urban per capita water use were published by DWR in its February 2016 guidance document[6]. The methodology applied to VCWD included an urban per capita water use reduction of 20 percent by 2020. DWR's guidance document was used by VCWD to calculate a projected urban per capita water use target of 86 gallons per capita per day through FY 2044-45.

3.1.1 Irwindale Gateway Project Water Demand

The proposed Project will include three industrial warehouse buildings with a total of approximately 997,796 sf of warehouse and office floor space. The Project will also include approximately 253,736 sf (5.8 acres) of landscaping, and surrounding parking areas (pavement) on a Project site of approximately 66.64 acres. The Project information used in this WSA was based on a Project conceptual site plan prepared by HPA Architecture dated June 6, 2022 (See Appendix A).

The water demand for the industrial warehouse buildings was estimated by multiplying the total size of the buildings (in sf) by a water demand factor derived from the June 2022 Supplement to the WSA (originally prepared in December 2021) for the proposed "Speedway Commerce Center II" project located in Fontana Water Company's service

[6] California Department of Water Resources, Division of Statewide Integrated Water Management, Water Use and Efficiency Branch. *Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use*. February 2016.

area. The estimated water demand for the proposed Speedway Commerce Center II project (consisting of seven industrial warehouse buildings with a total building size of 6,600,000 sf) was based on a water demand factor of about 2,840 gallons per day per acre of building size for similarly sized industrial buildings within Fontana Water Company's service area. As a result, the estimated industrial warehouse building water demand for the proposed Irwindale Gateway Project is estimated at approximately 73 AFY (or 997,796 sf x (1 acre / 43,560 sf) x 2,840 gpd per acre x (0.00112 AFY / 1 gpd)).

The Project landscape irrigation demand was estimated using a water budget calculator from DWR. The water budget calculator estimates the water use of a landscaped area based on the following components:

- Reference Evapotranspiration (ETo)
    - ETo refers to the total amount of water lost through evaporation in the soil and transpiration of plants
    - The average ETo in the vicinity of the Project site is approximately 55.1 inches per year[7]

- Plant Factor (PF)
    - The PF is a factor (generally from 0 to 1) for each type of irrigated plant and is based on the water requirements for the plant
    - Plants with a lower PF (0 to 0.3) require less water than plants with a higher PF (0.7 to 1.0). The PF for turf is approximately 0.7[8]. The PF for medium water use trees, shrubs and groundcover is approximately 0.5. A PF of 0.6 has been estimated for the Project which is based on different landscaped areas consisting of turf, trees, shrubs and groundcover.

- Irrigated Area (IA)
    - Based on the Project site map prepared by HPA Architecture, the irrigated area is approximately 256,878 square feet

[7] Pursuant to Section 2.3 of VCWD's 2020 UWMP

- Irrigation Efficiency (IE)
    - The IE is a factor (generally from 0 to 1) which represents irrigation efficiency.
    - Irrigation systems which are well designed and operated can have an efficiency range of 0.8 to 0.9. Irrigation systems which are poorly designed and operated may have efficiencies less than 0.5[9]. An irrigation efficiency of 0.7 (representing rotor and standard drip irrigation) has been estimated for the Project.

The estimated irrigation water demand at each potential site is then calculated based on the following formula:

Irrigation Water Demand = (ETo) x (0.62) x ([PF x IA] / IE)

It should be noted 0.62 represents a factor used to convert units from "inches per year" to "gallons per square foot per year". The potential irrigation water demand is in units of "gallons per year". Based on the formula, the estimated irrigation water demand for the Project is approximately 7,521,828 gallons per year (or 55.1 inches x 0.62 x ([0.6 x 256,878 square feet] / 0.7)) or 23 AFY (or 7,521,828 gallons per year x (1 acre-foot / 325,851 gallons)).

The total estimated water demand for the Project, which includes industrial water demands (73 AFY) and landscape irrigation (23 AFY), is approximately 96 AFY. However, in order for VCWD to provide 96 AFY to the Project site, VCWD will need to produce water supplies which account for water losses within its water distribution system. Pursuant to Water Loss Audits[10] prepared by VCWD (pursuant to the California Water Code), VCWD's water system losses have averaged approximately 5.5 percent from calendar year 2016 to calendar year 2021. Accounting for this average water loss, VCWD would need to produce approximately 101 AFY of water in order to supply 96 AFY to the Project site. It should be noted, based on VCWD records, there has not

[8] http://ucanr.edu/sites/UrbanHort/Water_Use_of_Turfgrass_and_Landscape_Plant_Materials/SLIDE__Simplified_Irrigation_Demand_Estimation/

[9] "*A Guide to Estimating Irrigation Water Needs of Landscape Plantings in California",* University of California Cooperative Extension California, DWR, August 2000

[10] https://wuedata.water.ca.gov/awwa_plans

been any record of water use at the Project site, so the demands for the proposed Project are not anticipated to offset any existing or project VCWD demand.

VCWD's 2020 UWMP includes current and projected future water demands for its service area over the next 20 years. It is anticipated construction of the Project will be completed by FY 2024-25. The water demands (101 AFY) for the proposed Project are incorporated as additional water demands to the existing and projected water demands presented in VCWD's adopted 2020 UWMP over a 20-year period and through FY 2044-45, as shown in Table 11.

Table 11. VCWD's Projected Water Demand Estimates (AFY)

Fiscal Year	**2024-25**	**2029-30**	**2034-35**	**2039-40**	**2044-45**
Potable Water Demands [1]	6,651	6,707	6,765	6,822	6,879
Additional Water Demands from Proposed Project	101	101	101	101	101
Total VCWD Projected Water Demands (with Proposed Project)	**6,752**	**6,808**	**6,866**	**6,923**	**6,980**

Notes:

[1] Projected demands through FY 2039-40 obtained from Table 3-4 of VCWD's 2020 UWMP. The projected demand for FY 2044-45 was interpolated.

4.0 COMPARISON OF FUTURE WATER DEMAND AND SUPPLY

VCWD's primary source of water supply is groundwater from the Main Basin. The existing collective capacity from VCWD's active wells is about 8,000 gpm or about 11.5 million gallons per day (MGD). Over the past 20 years, VCWD's maximum demand was approximately 11,700 AFY in FY 2003-04 (which is equal to 90 percent of VCWD's available well capacity). In addition, VCWD can purchase treated water from CIC and treated imported water from MWD's USG-9.

As shown on Table 11, VCWD's projected water demands including the Project ranges from 6,752 AFY to 6,980 AFY from FY 2024-25 through FY 2044-45 during normal years. The estimated projected average day water demand, including the Project, is calculated to range from about 6 MGD to about 6.2 MGD from FY 2024-25 through FY 2044-45. Consequently, it is anticipated VCWD will have sufficient groundwater capacity to meet its average day demands over the next 20 years.

Tables 12 through 14 show VCWD's projected water demands, including the Project, and sources of water supply, under future normal, single dry, and multiple (five consecutive) dry year scenarios, from FY 2024-25 through FY 2044-45. VCWD has historically met its water demands with groundwater production. Even with VCWD's historically reliable water supply, VCWD has included a WSCP in its 2020 UWMP identifying actions to be taken to respond to a severe or extended water shortages.

VCWD can increase production from the Main 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 Basin.

Tables 12 through 14 show that the combined capacities from VCWD's sources of supply will provide sufficient water supply for VCWD's projected water demand, including the Project, under all conditions, over the next 20 years.

Table 12. VCWD's Projected Water Supplies in Normal Years (AFY)

Fiscal Year		2024-25	2029-30	2034-35	2039-40	2044-45
Total VCWD Projected Water Demands (with Proposed Project) [1]		**6,752**	**6,808**	**6,866**	**6,923**	**6,980**
Water Supplies [2]	Main Basin	7,127	7,188	7,249	7,311	7,311
	MWD Imported (USG-9)	0	0	0	0	0
	CIC	0	0	0	0	0
	Total	**7,127**	**7,188**	**7,249**	**7,311**	**7,311**
Difference		**375**	**380**	**383**	**388**	**331**

Notes:

[1] From Table 11

[2] Water supply projections based on adopted VCWD 2020 UWMP (Table 7-2). Water supplies available in FY 2044-45 based on FY 2039-40 projections.

Table 13. Comparison of VCWD's FY 2024-25 Water Supply and Demand in Normal, Single Dry, and Multiple Dry Years (AFY)

Demand and Supply		Normal Year	Single Dry Year [2]	Multiple Dry Years [2]				
				Dry Year 1	Dry Year 2	Dry Year 3	Dry Year 4	Dry Year 5
Total VCWD Projected Water Demands (with Proposed Project) [1]		**6,752**	**6,077**	**6,077**	**6,077**	**5,402**	**5,402**	**4,726**
Water Supplies [3]	Main Basin	7,127	6,374	6,374	6,830	7,236	6,742	6,871
	MWD Imported (USG-9)	0	0	0	0	0	0	0
	CIC	0	0	0	0	0	0	0
	Total	**7,127**	**6,374**	**6,374**	**6,830**	**7,236**	**6,742**	**6,871**
Difference		**375**	**297**	**297**	**753**	**1,834**	**1,340**	**2,145**

Notes:

[1] From Table 11

[2] Single Dry Year and Multiple Dry Year projections are based on percentage of the Dry Year Demand compared to the Total Normal Year Demand multiplied by the Normal Demand (from Tables 7-2, 7-3, and 7-4 of adopted VCWD 2020 UWMP)

[3] Supply projections reported in adopted VCWD 2020 UWMP, Table 6-2.

Table 14. Comparison of VCWD's FY 2044-45 Water Supply and Demand in Normal, Single Dry, and Multiple Dry Years (AFY)

Demand and Supply		Normal Year	Single Dry Year [2]	Multiple Dry Years [2]				
				Dry Year 1	Dry Year 2	Dry Year 3	Dry Year 4	Dry Year 5
Total VCWD Projected Water Demands (with Proposed Project) [1]		**6,980**	**6,282**	**6,282**	**6,282**	**5,584**	**5,584**	**4,886**
Water Supplies [3]	Main Basin	7,311	6,374	6,374	6,830	7,236	6,742	6,871
	MWD Imported (USG-9)	0	0	0	0	0	0	0
	CIC	0	0	0	0	0	0	0
	Total	**7,311**	**6,374**	**6,374**	**6,830**	**7,236**	**6,742**	**6,871**
Difference		**331**	**92**	**92**	**548**	**1,652**	**1,158**	**1,985**

Notes:

[1] From Table 11

[2] Single Dry Year and Multiple Dry Year projections are based on percentage of the Dry Year Demand compared to the Total Normal Year Demand multiplied by the Normal Demand (from Tables 7-2, 7-3, and 7-4 of adopted VCWD 2020 UWMP)

[3] Supply projections reported in adopted VCWD 2020 UWMP, Table 6-2. Water supplies available in FY 2044-45 based on FY 2039-40 projections.

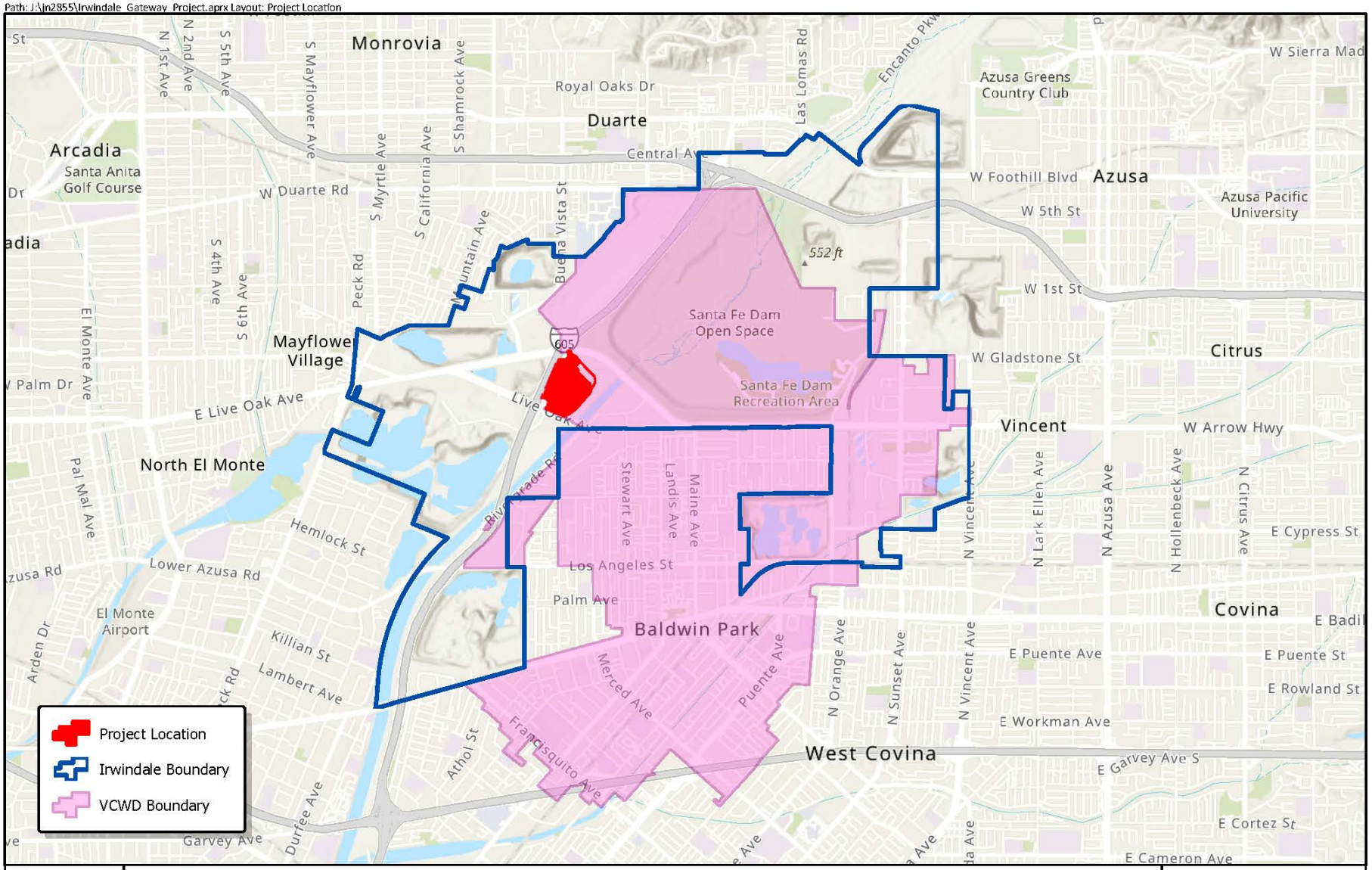
In addition to VCWD's groundwater extraction from the Main Basin, VCWD can purchase treated water from CIC as well as treated, imported water from MWD through USGVMWD (through the USG-9 connection). VCWD also has the ability to obtain supplemental water supplies from its Main Basin cyclic storage account. Under the Main San Gabriel Basin Judgment, cyclic storage provisions allow producers, including VCWD, to store supplemental water within the Main Basin for the purpose of supplying Replacement Water.

As presented in Section 2 and Appendix B, active and effective groundwater management enables water producers in the Main Basin to historically meet water demands, including during single and multiple dry years. Based on the demonstrated

reliability of water resources available to VCWD, including VCWD's access to the Main Basin water supplies including imported Replacement Water and VCWD's access to treated imported water from MWD, VCWD has sufficient and reliable water supplies to meet its future demands, with the Project from FY 2024-25 to 2044-45, including during single and multiple dry years.

J:\2855 Irwindale WSA\01 Text\Final Irwindale Gateway Project WSA.Doc

Path: J:\jn2855\Irwindale_Gateway_Project.aprx Layout: Project Location



IRWINDALE GATEWAY PROJECT
PROJECT LOCATION

STETSON ENGINEERS INC.

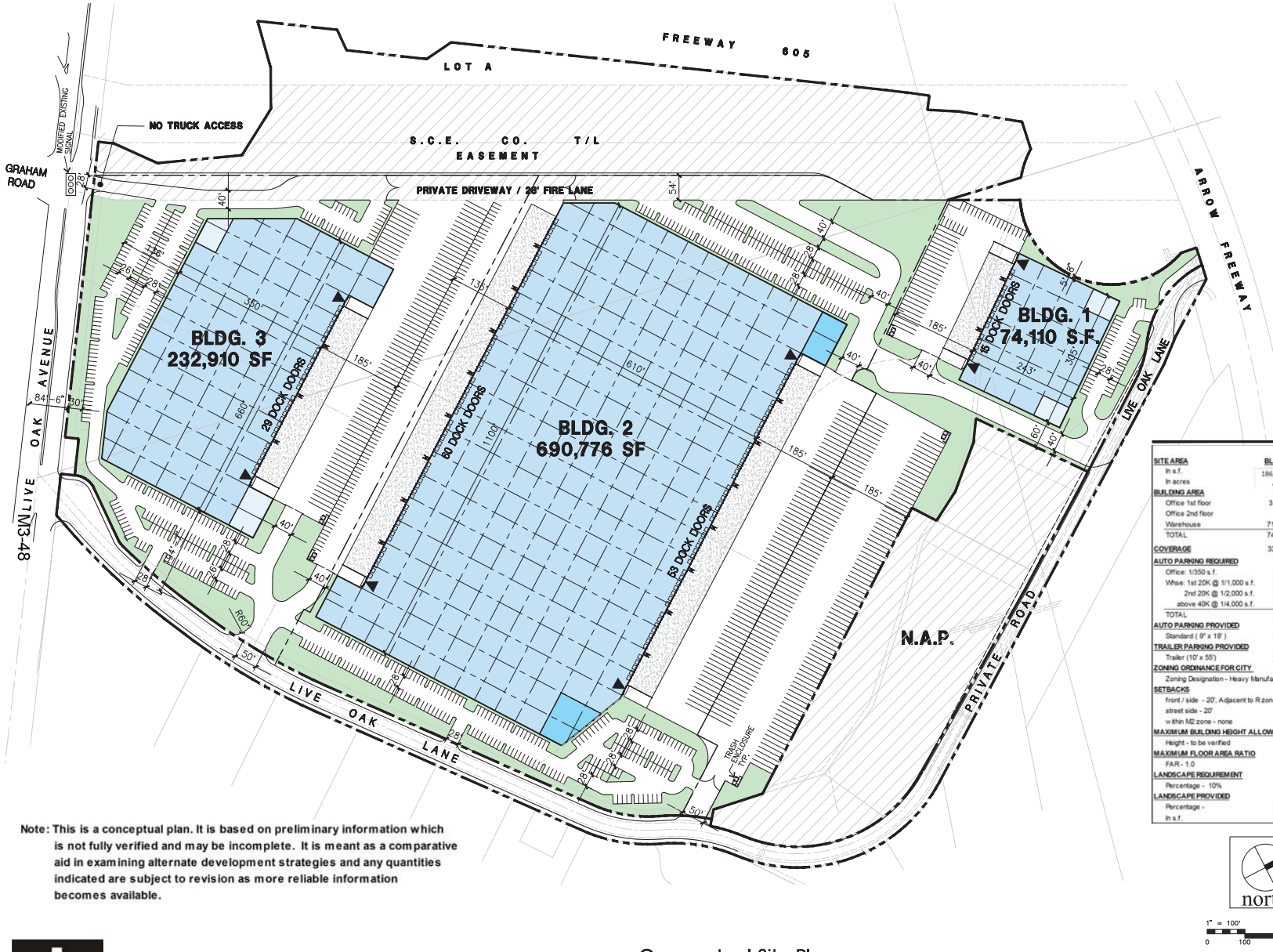
N

0 0.5 1
Miles

FIGURE 1

APPENDIX A

Conceptual Site Plan



Note: This is a conceptual plan. It is based on preliminary information which is not fully verified and may be incomplete. It is meant as a comparative aid in examining alternate development strategies and any quantities indicated are subject to revision as more reliable information becomes available.

Aerial Map

Legend

- POTENTIAL OFFICE
- POTENTIAL OFFICE WITH 2ND FLOOR
- WAREHOUSE
- ▼ DRIVE THRU DOOR

Tabulation

	BLDG. 1	BLDG. 2	BLDG. 3	TOTAL	LIVE OAK LANE	S.C.E. EASTMENT	TOTAL
SITE AREA							
In s.f.	186,428	1,490,116	612,550	2,289,094	189,921	430,488	2,909,502 s.f.
In acres	4.27	34.13	14.03	52.43	4.35	9.86	66.64 ac
BUILDING AREA							
Office 1st floor	3,000	15,000	10,000	28,000			28,000 s.f.
Office 2nd floor		15,000		15,000			
Warehouse	71,110	660,776	222,910	954,796			954,796 s.f.
TOTAL	74,110	690,776	232,910	997,796			997,796 s.f.
COVERAGE	33.3%	49.7%	33.7%	43.3%			
AUTO PARKING REQUIRED							
Office: 1/350 s.f.	9	43	29	81			81 stalls
Whse: 1st 20K @ 1/1,000 s.f.	20	20	20	60			60 stalls
2nd 20K @ 1/2,000 s.f.	10	10	10	30			30 stalls
above 40K @ 1/4,000 s.f.	8	155	46	209			209 stalls
TOTAL	47	228	105	380			380 stalls
AUTO PARKING PROVIDED							
Standard (9' x 19')	62	437	286	785			785 stalls
TRAILER PARKING PROVIDED							
Trailer (10' x 55')	24	229	87	340			340 stalls
ZONING ORDINANCE FOR CITY							
Zoning Designation - Heavy Manufacturing(M-2)							
SETBACKS							
front / side - 20', Adjacent to R zone - 50'							
street side - 20'							
within MZ zone - none							
MAXIMUM BUILDING HEIGHT ALLOWED							
Height - to be verified							
MAXIMUM FLOOR AREA RATIO							
FAR - 1.0							
LANDSCAPE REQUIREMENT							
Percentage - 10%							
LANDSCAPE PROVIDED							
Percentage -	14.2%	10.1%	12.3%	11.1%			11.1%
In s.f.	31,603	139,827	85,448	256,878			256,878 s.f.

north

1" = 100'
0 100 200 300

HPA architecture

Conceptual Site Plan

Irwindale Gateway

KEARNY Real Estate Company

November 3, 2023/ Job #21427

Scheme 32

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. 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 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 November 2918 at approximately 169 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 August 2022, was recorded

TABLE A

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

FISCAL YEAR	MEASURED KEY WELL ELEVATION (FEET) 1/	OPERATING SAFE YIELD	CARRY OVER RIGHTS FROM PREVIOUS YEAR	LOST CARRY OVER RIGHTS	PRODUCTION RIGHTS	WATER PRODUCTION	BASIN OVER PRODUCTION REPLACEMENT WATER REQUIREMENT	BASIN OVER PRODUCTION PRODUCER CYCLIC STORAGE	TOTAL
1973-74	238.4	226,800	--	--	238,132.94	235,460.40	14,518.98	0.00	14,518.98
1974-75	234.8	210,000	17,191.52	203.36	237,913.46	225,221.86	8,421.93	0.00	8,421.93
1975-76	221.1	200,000	20,908.91	131.06	231,391.95	242,246.36	24,744.88	0.00	24,744.88
1976-77	211.4	150,000	13,759.41	861.12	174,193.45	210,340.40	48,650.71	0.00	48,650.71
1977-78	270.4	150,000	9,980.67	1,198.54	170,473.30	195,275.53	36,818.25	0.00	36,818.25
1978-79	266.6	170,000	8,950.43	78.11	189,439.67	214,919.54	34,404.83	0.00	34,404.83
1979-80	282.4	220,000	6,745.88	81.54	237,226.13	223,088.89	9,896.39	0.00	9,896.39
1980-81	252.4	230,000	21,960.87	202.89	262,445.19	230,832.31	5,477.08	0.00	5,477.08
1981-82	245.5	210,000	35,642.01	380.30	255,281.37	220,391.54	10,582.35	0.00	10,582.35
1982-83	292.7	200,000	43,261.87	304.02	253,049.93	209,949.43	3,293.23	0.00	3,293.23
1983-84	267.1	230,000	45,378.26	80.10	287,394.98	236,679.19	2,151.85	1,573.60	3,725.45
1984-85	245.8	210,000	51,594.26	344.48	272,050.11	242,439.63	12,475.69	0.00	12,475.69
1985-86	250.8	190,000	40,395.40	198.50	240,319.81	246,223.58	33,774.82	0.00	34,774.82
1986-87	236.5	200,000	25,403.49	106.93	235,923.93	253,633.02	41,828.86	0.00	41,828.86
1987-88	224.0	190,000	22,457.73	143.63	222,985.31	248,101.54	51,989.89	0.00	51,989.89
1988-89	219.8	180,000	21,710.19	61.61	214,810.57	253,694.47	59,384.99	0.00	59,384.99
1989-90	206.5	180,000	19,741.33	282.28	210,268.35	252,135.76	62,582.49	0.00	62,582.49
1990-91	200.3	170,000	17,837.99	387.33	199,467.55	232,091.44	41,232.39	13,112.70	54,345.09
1991-92	236.9	140,000	18,796.02	345.83	169,575.74	221,476.83	31,214.19	35,916.90	67,131.09
1992-93	267.8	180,000	13,478.79	189.05	204,009.40	236,677.04	15,858.66	50,031.39	65,890.05
1993-94	248.8	220,000	31,718.29	462.81	262,029.85	243,616.55	8,915.59	25,422.42	34,338.01
1994-95	269.0	200,000	50,290.41	1,065.79	260,802.71	243,479.39	30,194.77	0.00	30,194.77
1995-96	248.9	220,000	44,262.41	737.28	274,608.47	268,950.50	32,526.05	0.00	32,526.05
1996-97	241.3	210,000	35,484.68	863.84	256,011.19	279,481.35	55,236.24	0.00	55,236.24
1997-98	267.8	220,000	28,965.55	704.70	263,725.27	253,921.28	26,362.42	4,331.64	30,694.06
1998-99	244.8	230,000	34,016.10	124.28	277,282.73	265,151.97	30,499.32	2,859.66	33,358.98
1999-00	228.5	220,000	40,633.83	592.51	274,824.14	278,687.14	39,749.83	3,663.84	43,625.83
2000-01	220.1	220,000	33,774.80	570.83	267,126.29	270,919.13	38,317.35	2,825.02	41,142.37
2001-02	208.7	210,000	32,015.15	532.59	258,992.70	264,328.17	40,773.50	6,450.10	47,223.60
2002-03	204.1	190,000	32,833.12	159.50	240,450.90	237,490.86	38,519.29	5,948.75	44,468.04
2003-04	204.2	170,000	38,370.38	79.24	224,691.75	252,811.50	51,416.73	8,870.23	60,286.96
2004-05	248.4	170,000	24,549.23	53.76	219,049.64	247,187.00	41,043.83	18,736.93	59,780.76
2005-06	249.7	240,000	17,402.45	156.28	268,418.02	259,807.52	12,065.12	6,908.92	18,974.04
2006-07	220.5	240,000	27,862.73	90.80	278,386.20	284,328.04	20,048.99	7,309.89	27,356.53
2007-08	202.7	210,000	29,374.42	182.17	249,433.95	258,167.00	28,777.98	9,157.53	37,935.51
2008-09	195.6	180,000	33,902.42	778.21	224,028.56	250,102.62	26,473.24	30,239.02	56,712.26
2009-10	204.2	170,000	28,729.17	236.31	210,117.25	237,846.31	35,129.38	14,929.92	50,059.30
2010-11	233.5	170,000	20,695.69	167.70	201,220.31	227,657.15	33,084.38	15,382.66	48,467.04
2011-12	226.4	210,000	21,657.47	166.96	242,181.86	237,028.57	19,685.04	20,704.45	40,389.49
2012-13	202.8	200,000	44,143.15	268.13	254,314.47	242,913.84	5,972.15	23,673.25	29,645.40
2013-14	187.8	180,000	42,864.86	377.39	233,389.45	240,552.41	3,779.32	36,325.98	40,105.30
2014-15	177.5	150,000	36,753.33	419.84	197,280.18	208,339.16	12,319.13	33,508.84	45,827.97
2015-16	174.0	150,000	35,226.32	284.47	195,752.95	182,826.49	6,909.20	19,510.99	26,420.19
2016-17	179.4	150,000	39,299.44	285.56	199,994.06	197,243.28	7,526.21	24,009.59	31,535.80
2017-18	178.5	150,000	34,893.57	144.60	195,420.20	209,499.70	12,520.95	27,409.98	39,930.93
2018-19	196.9	150,000	28,810.62	298.63	189,434.81	190,156.12	10,747.45	24,101.15	34,848.60
2019-20	203.1	150,000	34,603.48	640.76	194,608.18	192,583.66	12,911.67	21,913.85	34,825.52
2020-21	191.3	150,000	36,743.32	176.41	197,339.52	207,821.52	10,776.45	23,887.81	34,664.26
2021-22	184.6 2/	150,000	25,117.46	--	185,600 3/	180,000 4/	--	--	--
10-YEAR AVERAGE:	--	**164,000**	--	--	--	**210,896**	--	--	--
15-YEAR AVERAGE	--	174,000	33,037.33	301.20	217,526.80	224,471.06	16,444.10	22,137.66	38,581.61
48-YEAR AVERAGE	--	190,975	29,682.37	344.72	231,609.77	236,745.35	25,866.33	10,806.60	36,698.14

1/ End of Fiscal Year, July to June
2/ As of April 29, 2022
3/ Estimated value including Carry-over Rights and Diversion Rights
4/ Estimated value

in November 2018 at 169.4 feet. Although Watermaster reduced the Operating Safe Yield for fiscal year 2016-17 to 150,000 acre-feet (currently 150,000 acre-feet for fiscal year 2022-23), 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.

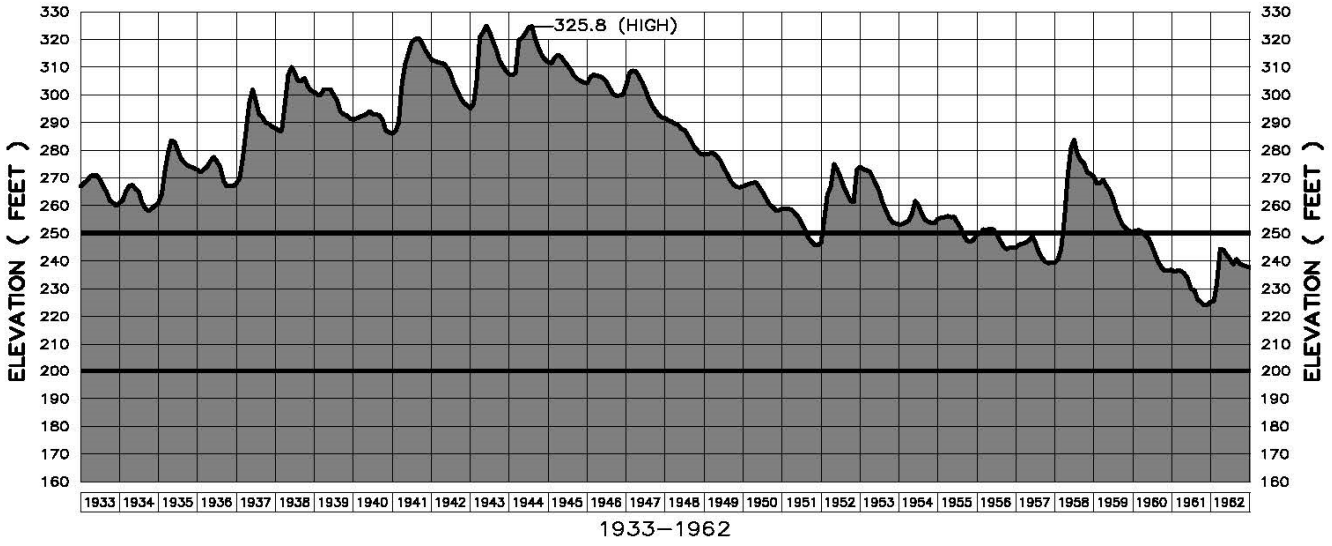
Just as with groundwater, there is no institutional limit on the quantity of San Gabriel River water that can be diverted for use. Whenever an integrated producer exceeds its total water rights it will be levied a Replacement Water assessment, along with other applicable assessments, similar to groundwater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

Groundwater Recharge

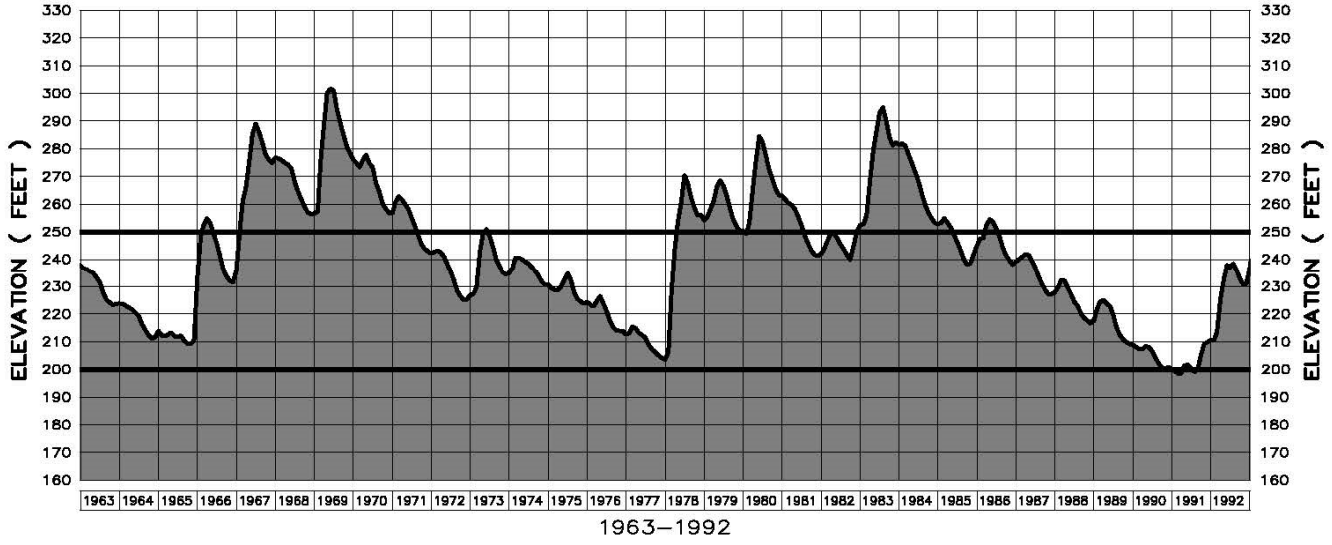
The Main San Gabriel Basin has a fresh water storage capacity of about 8.7 million acre-feet, of which the top 125 feet of storage, or about 1,000,000 acre-feet has been used for historic Basin operations. Local runoff is stored in a series of reservoirs operated by the Los Angeles County Department 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.

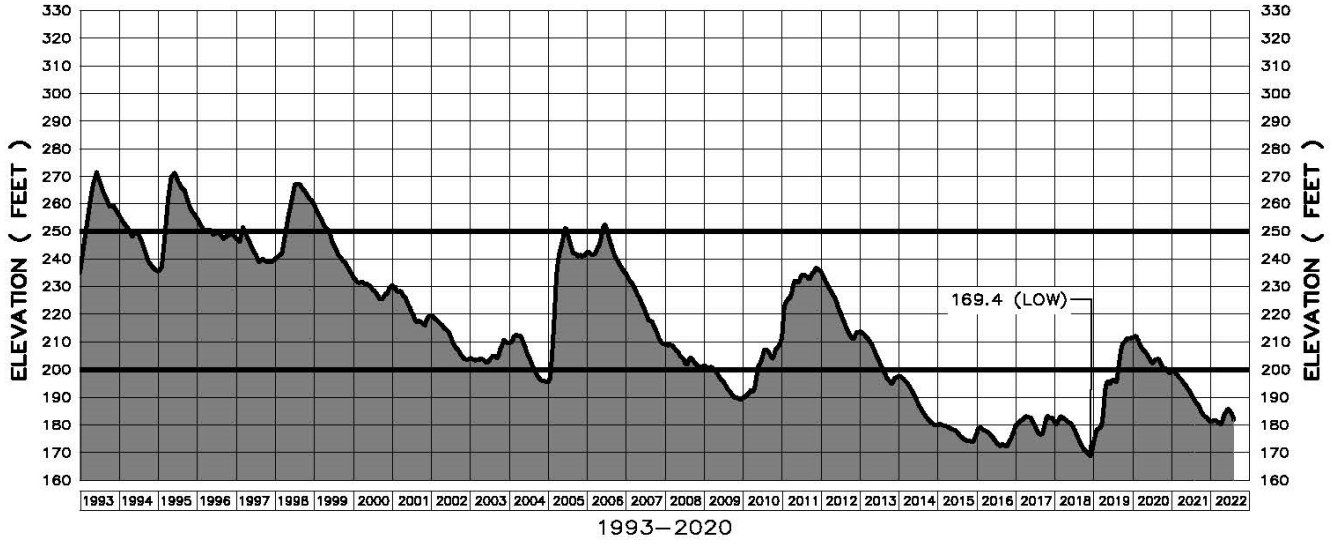
FIGURE 1 HYDROGRAPH OF BALDWIN PARK



1933–1962



1963–1992



1993–2020

NOTE: GROUND SURFACE ELEVATION 386.7 FEET
HISTORIC RECORDED HIGH 329.1 FEET MAY 19, 1916
HISTORIC RECORDED LOW 169.4 FEET NOVEMBER 21, 2018