

Appendix K2 Water Analysis

Appendices

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MEMO

DATE: September 16, 2016

TO: Jack Haupt, City of Hope

FROM: KPFF Consulting Engineers

RE: **City of Hope Campus Plan: Revised Water Infrastructure and Demand Analysis**

KPFF prepared this memorandum to assess the potential impacts to water lines resulting from the proposed City of Hope Campus Plan [the Project]. The proposed Project would involve additions to the existing outpatient (clinic), inpatient (hospital), research, office, industrial, warehouse, and hospitality uses at the City of Hope Campus, as well as new parking structures and surface lots, and open space improvements. The proposed Project anticipates development of the Campus over a period of 20 years, including the replacement of existing outdated and obsolete buildings with modern facilities. Upon full build-out, implementation of the proposed Project would result in an allowable building area [i.e., maximum permitted development] of 2,639,350 gross square feet on the Campus, which represents an overall increase of approximately 1,038,500 net new gross square feet of development [approximately 1,426,000 gross square feet of new construction, minus approximately 387,500 gross square feet of existing facilities proposed for demolition] as compared to existing conditions. A table showing the existing and proposed land uses at the Campus under the Project is provided below.

Land Use Projections for City of Hope Campus Plan

Land Use	Existing Conditions (GSF)	Proposed Net New Development (GSF) ²	Total Allowable Building Area (GSF)
Outpatient (Clinic)	304,322	430,000	734,322
Inpatient (Hospital)	425,722	139,500	565,222
Research	457,936	301,000	758,936
Office	186,296	132,000	318,296
Hospitality	18,168	57,000	75,168
Assembly	69,295	-29,000	40,295
Warehouse	59,244	-48,500	10,744
Industrial	73,909	56,500	130,409
Housing ¹	5,958	0	5,958
Total	1,600,850 GSF	1,038,500 GSF	2,639,350 GSF

Notes: GSF = Gross Square Feet

- 1 The existing housing consists of rental units owned by City of Hope along Cinco Robles, which are rented primarily by grad students attending City of Hope's Irell & Manella Graduate School of Biological Sciences.
- 2 The proposed net new development accounts for up to 387,500 square feet of demolition.

1. Introduction

This memorandum is based on research and compiled existing utility maps supplied by the City of Duarte and its utility purveyors. Since the City of Hope Campus is already developed with buildings and other facilities, all required utility systems, including water lines, are already provided to the Campus. Accordingly, this analysis looks at placement and potential relocations of water lines, as well as, future demands. This memorandum addresses the as-built, current conditions of the Campus as well as the accommodation of future developments along with their impacts to water facilities.

2. Water - Existing Conditions

The Campus is primarily located in the City of Duarte (approximately 89.5 acres), with a smaller portion at its eastern and southern edges located in the City of Irwindale (approximately 26.5 acres). The Campus is generally bounded by Duarte Road to the north; Cinco Robles Drive, the Duarte Flood Control Channel, and Buena Vista Street to the west; and the Santa Fe Flood Control Basin to the east and south.

The City of Duarte is served entirely by groundwater sources from the Main San Gabriel Basin. Existing water service infrastructure is installed throughout and surrounding the Project site. Information discussed herein was obtained from the water purveyor, California American Water (Cal-Am). There are two existing 8" laterals and meters servicing the Campus; one is located at the northwest corner of the property, east of Village Road, which connects to a 12" ductile iron pipe (DIP) water main on Duarte Road and the other is located at the southeast corner of intersection between Buena Vista Street and Galen Street, about half-way along the west property line.

The following water lines exist adjacent to the City of Hope Campus (see Attachment A, "*Exhibit A, Water - Existing Conditions*"):

Duarte Road

A 12" DIP water main was recently installed as part of the Foothill Transit Authority (FTA) Metro Gold Line, IP-0550-1775 project. It runs east-west, 14' north of the south right-of-way (ROW) for the length of project frontage and jogs to 40' north of south ROW to the west of Cinco Robles Drive. It provides water service via an 8" lateral to the City of Hope site and connects to a 16" water main at Buena Vista Street.

Cinco Robles Drive

An 8" asbestos cement pipe (ACP) water main runs south to north, 16' west of the east ROW, connecting to a 12" DIP water main at Duarte Road.

Buena Vista Street

The southernmost corner of the project site borders with Buena Vista Street, where an 8" water pipe with different material along its length, runs south to north, 5' west of the

east ROW. This main also provides an 8" service lateral and meter to the City of Hope Campus.

3. Potential Physical Impacts of Project on Water Lines

The Campus core is highly packed by existing utility lines. As for the water supply system, there are various sizes, ranging from 2" to 12" of branch pipes around the Campus. A 12" water main passes through the center of the site and continues through a loop around the Campus. This main loop is connected and serviced by two meters located at two locations; one at the northwest corner of the property, east of Village Road and the other at the southeast corner of intersection between Buena Vista Street and Galen Street, about half-way along the west property line. In addition, for the eastern-half of the Campus, a 10" water main branches off from the 12" main and continues south through the east-half side of the Campus.

Proposed developments on the City of Hope Campus under the Project may be developed over four [4] phases, although the phasing could change as Project build-out proceeds. Assuming the Project is built as proposed in the conceptual phasing plan (i.e., Illustrative Development Scenario) identified in the draft Specific Plan prepared by City of Hope, some of the potential physical impacts, related to the internal City of Hope Campus water system are identified below (refer to Attachment A, "*Exhibit B, Water - Proposed Conditions*"):

- A major utilities corridor, including water lines exists under a proposed new 280,000 square foot Outpatient [Clinic] building, which is planned for phase 1 of the Project on the eastern portion of the Campus. All existing utilities may require re-routing around the proposed building footprint. Or, a design/construction of the building with bridge structure over them is considered so that the existing utilities can remain in place.
- Other proposed developments on the Campus could conflict with existing water lines elsewhere on the Campus and the re-routing of such water lines may be required.
- The existing on-site water system does not extend to portions of the southwest corner of the Campus. If new buildings or structures requiring water lines are ever constructed in this location, a new water main pipe will be required to run along the future fire access/roadway adjacent to the buildings and connect to an existing 12" water to the north.

These potential physical impacts of Campus Plan are not significant, and each individual building and project shall be studied more in detail, on a project-by-project basis during the design and preparation of engineering plans to solve any infrastructural conflicts prior to construction.

The calculations of water demand and sizing the system are discussed in the section 4 below.

4. Water Demand and Sizing Capacity

To determine the potential impact on water facilities, KPFF used LACSD No. 22's User Categories and Mean Loadings table and return-to-sewer ratio of 90% to calculate the total water demand for pre- and post- developments.

The water supply assessment for the Duarte Station Specific Plan noted that wastewater flow was assumed to be 90 percent of water demand for the project. Accordingly, a similar approach was used here. Water demand was calculated under this method by dividing each flow factor from the Sanitation Districts of Los Angeles County (LACSD) No. 22 loadings table by 0.9 [return-to-sewer ratio of 90%]. A copy of LACSD No. 22 loadings table is attached for reference in Attachment B.

Per the LACSD No. 22 loadings table and using the return-to-sewer ratio of 90%, KPFF used following flow rates to estimate water demand for the various existing and proposed land uses under the Project:

Project Land Use Category	LACSD No. 22 User Category	Unit of Measure	Flow (Gallons per Day)
Outpatient (Clinic)	Medical, Dental, Veterinary Clinic or Building	1000 ft ²	333
Inpatient (Hospital) ¹	Medical, Dental, Veterinary Clinic or Building	1000 ft ²	333
Research	Medical, Dental, Veterinary Clinic or Building	1000 ft ²	333
Office	Office Building	1000 ft ²	222
Hospitality ²	Hotel/Motel/Rooming House	Room	139
Assembly	Club & Lodge Halls	1000 ft ²	139
Warehouse	Warehousing	1000 ft ²	28
Industrial	Light Manufacturing	1000 ft ²	28
Housing ³	Single Family Home (4 units)	Dwelling Unit	289
	Multi-Unit Residential (3 units)		173
¹ Hospital use is not listed on the LACSD No. 22 loading table and is assumed to be equal to that of a Medical, Dental, Veterinary Clinic or Building category. ² COH's current hospitality uses consist of forty (40) rooms in 10 buildings (four units per building). Two (2) of those buildings would be demolished in Phase 2 of the Project, and the remaining eight (8) would be demolished in Phase 3. The proposed hospitality uses under the Project, which would consist of 75,000 square feet of floor area, would contain eighty (80) rooms. ³ COH owns four (4) single family homes and one (1) apartment containing 3 dwelling units.			

The table below summarizes the pre- and post- developments water demand for the entire Project, including all Phases 1 through 4 [see Attachment B, "Estimated Water Demand Calculation - Method 1" for details].

Overall Phases I - IV							
Building Use	User Category	Unit of Measure	Unit Flow - Sewer (GPD)	Unit Flow - Water (GPD)	Existing	Net New	Final Total
Outpatient (Clinic)	Medical/Clinic Building	1000 SF	300	333	304,322	430,000	734,322
Inpatient (Hospital)	Medical/Clinic Building	1000 SF	300	333	425,722	139,500	565,222
Research	Medical/Clinic Building	1000 SF	300	333	457,936	301,000	758,936
Office	Office Building	1000 SF	200	222	186,296	132,000	318,296
Hospitality	Hotel	Room	125	139	40	40	80
Assembly	Club & Lodge Halls	1000 SF	125	139	69,295	(29,000)	40,295
Warehouse	Warehousing	1000 SF	25	28	59,244	(48,500)	10,744
Industrial	Light Manufacturing	1000 SF	25	28	73,909	56,500	130,409
Housing	Single Family Home	Dwelling Unit	260	289	4	0	4
	Multi-Unit Residential	Unit	156	173	3	0	3
TOTAL PHASES I - IV							

Net Water Demand after All Phases I - IV							
					Q_{EXIST}	Q_{NET NEW}	Q_{TOTAL}
gallon per day (gpd)					457,947	321,250	779,197
cu. ft per sec (cfs)					0.71	0.50	1.21
ac-ft per yr (ac-ft/yr)					512.97	359.85	872.81

From the calculation results, proposed developments will consume a total water flow of 779,197 gpd. Compared to the existing rate of 457,947 gpd, the net increase in flow demand at full build-out of the Project would be 321,250 gpd. Converting to an equivalent water units, the anticipated water use for the pre- and post- developments are calculated to be 512.97 ac-ft/yr and 872.81 ac-ft/yr, respectively.

5. Conclusion - Water Impacts

To be more conservative, this water demand study uses the estimated LACSD No. 22 wastewater loading factors divided by 0.9 [an assumption that wastewater generation is 90% of water demand] to calculate the final Project net increase of water use. The

assumed water use for pre- and post- developments is calculated to be 512.97 ac-ft/yr and 872.81 ac-ft/yr, respectively with a net increase of 359.85 ac-ft/yr.

Please note that KPFF's water demand study accounts for domestic water use by the proposed buildings' gross square footage only. Water use for site landscaping, planter improvements (irrigation), and fire service demand are excluded. The implementation of Best Management Practices (BMPs) and other water conservation efforts, on a voluntary or mandatory basis, are anticipated to offset increases in demand from new development.

This preliminary water demand study will be reviewed by Cal-Am, which will be incorporated into Water Supply Assessment (WSA) for the Project and 2015 Urban Water Management Plan (UWMP) of Cal-Am Los Angeles District.

Fire Service

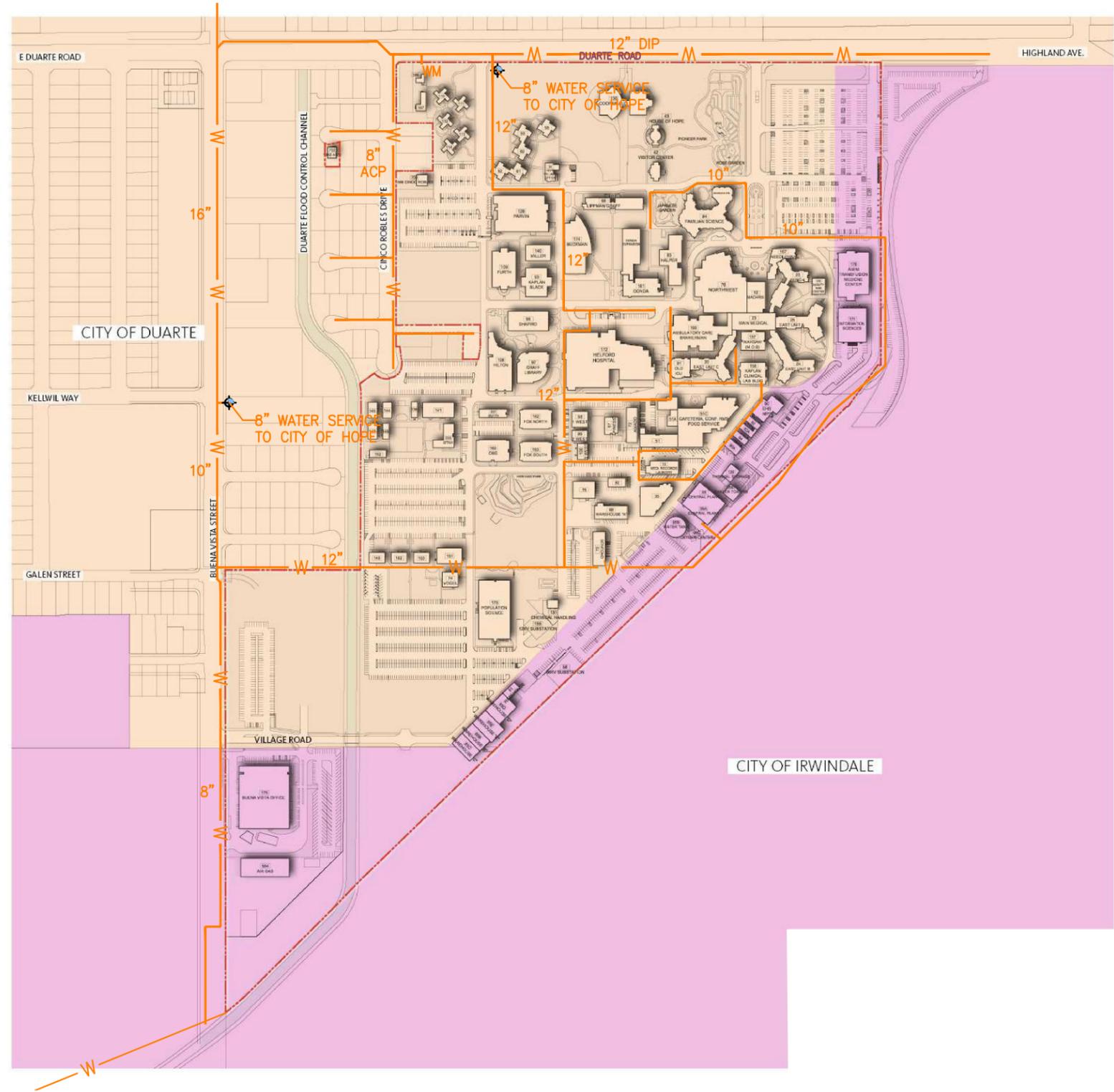
A more refined hydraulic analysis will be coordinated with Cal-Am and the County of Los Angeles Fire Department as individual development projects move forward. This would provide review and assessment of fire flows that may be required on a project-by-project basis. Several fire hydrants are currently located around the project boundary, and additional hydrants may be conditioned based upon the site layout at the time of site plan review.

Fire flow requirements are based upon building size and building construction type. The latest fire regulations require all buildings to be equipped with a fire sprinkler system, including residential homes sites. Fire flow requirements that were previously provided for the existing structures may increase due to new regulations. Site plans will be submitted to the fire authority in order to obtain a fire flow requirement based upon the tenant type, building size, and building type.

ATTACHMENT A

Exhibit A, Water - Existing Conditions

Exhibit B, Water - Proposed Conditions



LEGEND:

EXISTING WATER — W —



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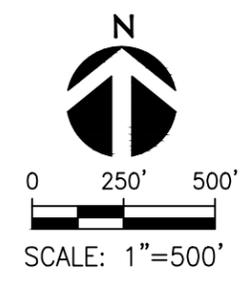
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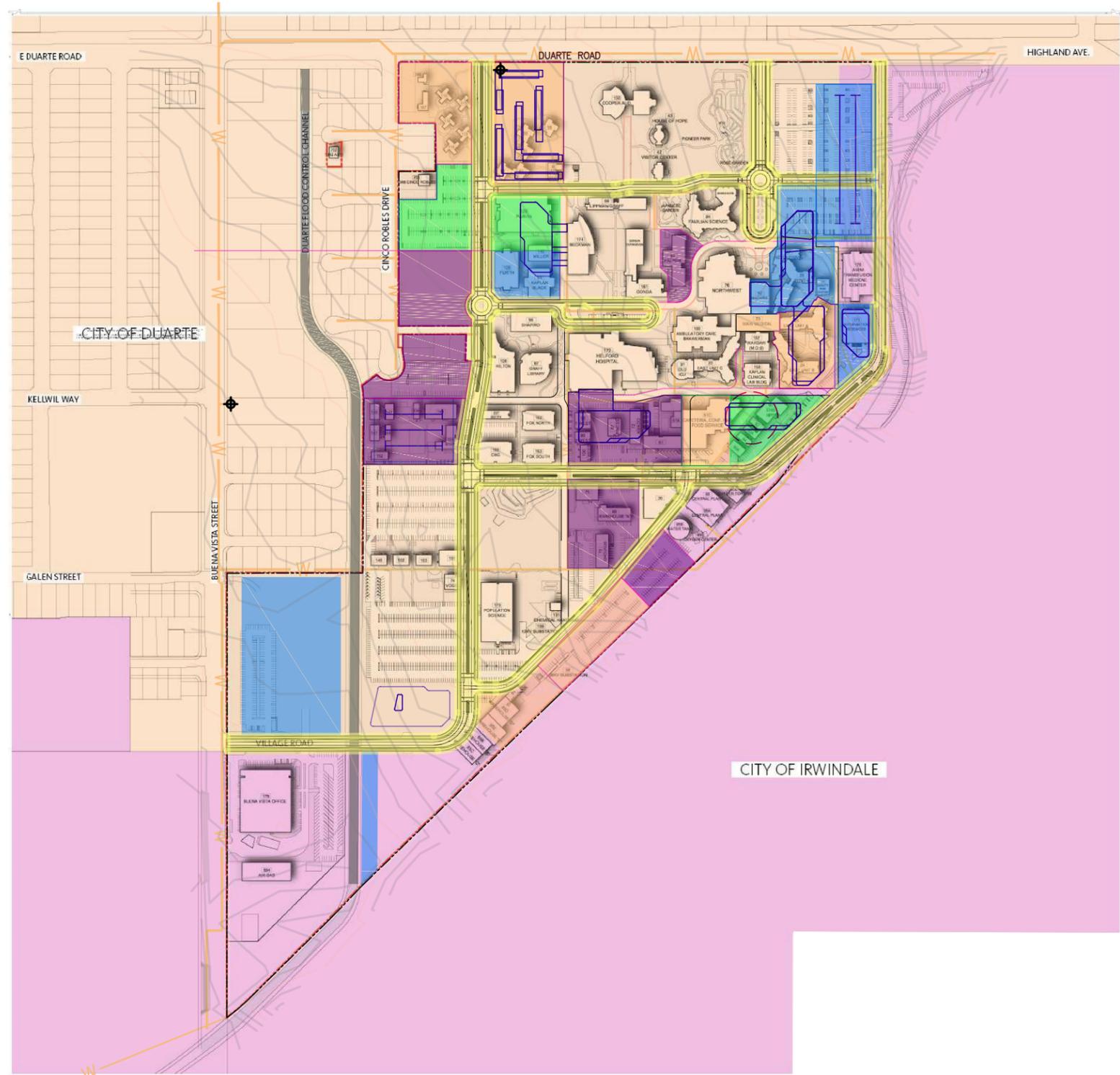
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PROJECT NUMBER	114186
DESIGNED BY	KP
DRAWN BY	CJ
CHECKED BY	KP

PROJECT DESCRIPTION
**CITY OF HOPE
 CAMPUS PLAN**

DRAWING TITLE
**WATER
 - EXISTING
 CONDITIONS**
 SHEET NUMBER (EXHIBIT NUMBER)

EXH-A





LEGEND:

- EXISTING WATER
- PHASE 1
- PHASE 2
- PHASE 3
- PHASE 4
- FIRE ACCESS/ROADWAY (PHASE 2)

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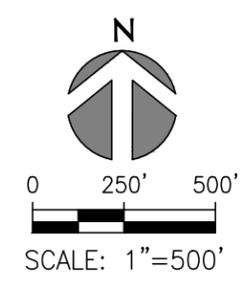
DATE	△	ISSUED FOR

DATE	09.16.16
PROJECT NUMBER	114186
DESIGNED BY	KP
DRAWN BY	CJ
CHECKED BY	KP

PROJECT DESCRIPTION
**CITY OF HOPE
 CAMPUS PLAN**

DRAWING TITLE
**WATER
 - PROPOSED
 CONDITIONS**
 SHEET NUMBER (EXHIBIT NUMBER)

EXH-B



ATTACHMENT B

LACSD No.22 User Categories and Mean Loadings Table

Estimated Water Demand Calculation

**AN ORDINANCE PRESCRIBING THE CONNECTION FEE RATE
AND MEAN LOADINGS PER UNIT OF USAGE FOR
COUNTY SANITATION DISTRICT NO. 22 OF LOS ANGELES COUNTY**

THE BOARD OF DIRECTORS OF COUNTY SANITATION DISTRICT NO. 22 OF LOS ANGELES COUNTY ORDAINS AS FOLLOWS:

SECTION 1.0 - USER CATEGORIES AND MEAN LOADINGS

Pursuant to Section 3.04(2) of the Master Connection Fee Ordinance of County Sanitation District No. 22 of Los Angeles County, the following shall constitute the user categories and mean loadings per unit of usage for flow, chemical oxygen demand (COD), and suspended solids:

<u>DESCRIPTION</u>	<u>UNIT OF MEASURE</u>	<u>FLOW (Gallons per Day)</u>	<u>COD (Pounds per Day)</u>	<u>SUSPENDED SOLIDS (Pounds per Day)</u>
RESIDENTIAL				
Single Family Home	Dwelling Unit	260	1.22	0.59
Condominiums	Dwelling Unit	195	0.92	0.44
Multi-Unit Residential	Dwelling Unit	156	0.73	0.35
Mobile Home Parks	No. of Spaces	156	0.73	0.35
COMMERCIAL				
Hotel/Motel/Rooming House	Room	125	0.54	0.28
Store	1000 ft ²	100	0.43	0.23
Supermarket	1000 ft ²	150	2.00	1.00
Shopping Center	1000 ft ²	325	3.00	1.17
Regional Mall	1000 ft ²	150	2.10	0.77
Office Building	1000 ft ²	200	0.86	0.45
Medical, Dental, Veterinary Clinic or Building	1000 ft ²	300	1.29	0.68
Restaurant	1000 ft ²	1,000	16.68	5.00
Indoor Theatre	1000 ft ²	125	0.54	0.28
Car Wash				
Tunnel - No Recycling	1000 ft ²	3,700	15.86	8.33
Tunnel - Recycling	1000 ft ²	2,700	11.74	6.16
Wand	1000 ft ²	700	3.00	1.58
Bank, Credit Union	1000 ft ²	100	0.43	0.23
Service Shop, Vehicle Maintenance & Repair Shop	1000 ft ²	100	0.43	0.23
Animal Kennels	1000 ft ²	100	0.43	0.23
Gas Station	1000 ft ²	100	0.43	0.23
Auto Sales	1000 ft ²	100	0.43	0.23
Wholesale Outlet	1000 ft ²	100	0.43	0.23
Nursery/Greenhouse	1000 ft ²	25	0.11	0.06
Light Manufacturing	1000 ft ²	25	0.23	0.09
Lumber Yard	1000 ft ²	25	0.23	0.09
Warehousing	1000 ft ²	25	0.23	0.09
Open Storage	1000 ft ²	25	0.23	0.09
Drive-in Theatre	1000 ft ²	20	0.09	0.05

<u>DESCRIPTION</u>	<u>UNIT OF MEASURE</u>	<u>FLOW (Gallons per Day)</u>	<u>COD (Pounds per Day)</u>	<u>SUSPENDED SOLIDS (Pounds per Day)</u>
COMMERCIAL				
Night Club	1000 ft ²	350	1.50	0.79
Bowling/Skating	1000 ft ²	150	1.76	0.55
Club & Lodge Halls	1000 ft ²	125	0.54	0.27
Auditorium, Amusement	1000 ft ²	350	1.50	0.79
Golf Course and Park (Structures and Improvements)	1000 ft ²	100	0.43	0.23
Campground, Marina, and Recreational Vehicle Park	Sites, Slips, or Spaces	55	0.34	0.14
Convalescent Home	Bed	125	0.54	0.28
Laundromat	1000 ft ²	3,825	16.40	8.61
Mortuary, Funeral Home	1000 ft ²	100	1.33	0.67
Health Spa, Gymnasium With Showers	1000 ft ²	600	2.58	1.35
Without Showers	1000 ft ²	300	1.29	0.68
Convention Center, Fairground, Racetrack, Sports Stadium/Arena	Average Daily Attendance	10	0.04	0.02
INSTITUTIONAL				
College/University	Student	20	0.09	0.05
Private School	1000 ft ²	200	0.86	0.45
Library, Museum	1000 ft ²	100	0.43	0.23
Post Office (Local)	1000 ft ²	100	0.43	0.23
Post Office (Regional)	1000 ft ²	25	0.23	0.09
Church	1000 ft ²	50	0.21	0.11

SECTION 2.0 - CONNECTION FEE RATE

Pursuant to Section 3.03 of the Master Connection Fee Ordinance of County Sanitation District No. 22 of Los Angeles County, the following, to be effective on the dates given, shall constitute the Connection Fee Rate per capacity unit:

<u>July 1, 2011</u>	<u>July 1, 2012</u>	<u>July 1, 2013</u>
\$4,190	\$4,320	\$4,450

SECTION 3.0 - COST ALLOCATION FACTORS

Pursuant to Section 3.04(1) of the Master Connection Fee Ordinance of County Sanitation District No. 22 of Los Angeles County, the proportions of the total capital costs required to construct an incremental expansion of the sewerage system of the next anticipated configuration for conveyance, treatment, and disposal of wastewater which are attributable to flow, COD, and suspended solids, designated as X, Y, and Z, respectively, to be effective on the dates given, shall be:

X = 0.6645 Y = 0.1275 Z = 0.2080

SECTION 4.0 - VALIDITY

If any part, section, subsection, paragraph, sentence, clause, or phrase of this Ordinance is held invalid or unconstitutional for any reason by any court, that decision does not affect the validity or constitutionality of the remainder of this Ordinance. The Board of Directors declares that it would have adopted each provision of this Ordinance irrespective of the validity of any other provision.

SECTION 5.0 - EFFECTIVE DATE

This Ordinance shall become effective 30 days after its adoption.

ATTEST:

Rimbulu S. Compton
Clerk, Board of Directors
County Sanitation District No. 22
of Los Angeles County

Michael Touhey
Chairperson pro tem, Board of Directors
County Sanitation District No. 22
of Los Angeles County

PASSED AND ADOPTED by the Board of Directors of County Sanitation District No. 22 of Los Angeles County on May 25, 2011 by the following vote:

AYES: Directors Harbicht, Rocha, Lozano, Barakat, Paras-Caracci, Manuel Garcia, Kendrick, Joe Garcia, Morris, Cartagena, Antonovich, and Touhey

NOES: None

ABSENT: Directors J. King and Tessitor

ABSTAIN: None

Rimbulu S. Compton
Secretary of the Board of Directors
County Sanitation District No. 22
of Los Angeles County

Estimated Water Demand

The unit flow is based on the LACSD No.22 User Categories and Mean Loading Table.

Return-to-Sewer Ratio 90%

Conversion Factor 1 cfs = 646,316.88 gpd
1 ac-ft = 325,851 gallons

Phase I Master Plan (2015-2020)

Building Use	User Category	Unit of Measure	Unit Flow - Sewer (GPD)	Unit Flow - Water (GPD)	Existing	Net New (Construction minus Demo)	Final Total (including conversion)
Outpatient (Clinic)	Medical/Clinic Building	1000 SF	300	333	304,322	250,000	554,322
Research	Medical/Clinic Building	1000 SF	300	333	457,936	156,500	614,436
Office	Office Building	1000 SF	200	222	186,296	15,500	201,796
Parking Structure #1							1750 spaces
TOTAL PHASE I							

Net Water Demand after Phase I

Flow Units						Q _{NET NEW}	
<i>gallon per day (gpd)</i>						138,944	
<i>cubic ft per second (cfs)</i>						0.21	

Phase II Master Plan (2020-2025)

Building Use	User Category	Unit of Measure	Unit Flow - Sewer (GPD)	Unit Flow - Water (GPD)	Existing	Net New (Construction minus Demo)	Final Total (including conversion)
Inpatient (Hospital)	Medical/Clinic Building	1000 SF	300	333	425,722	210,000	635,722
Research (Lab)	Medical/Clinic Building	1000 SF	300	333	614,436	43,500	657,936
Office	Office Building	1000 SF	200	222	201,796	(60,500)	141,296
Hospitality	Hotel	Room	125	139	40	(8)	32
Industrial	Light Manufacturing	1000 SF	25	28	73,909	16,500	90,409
Warehouse	Warehousing	1000 SF	25	28	59,244	(22,000)	37,244
Parking Structure # 2							1230 spaces
TOTAL PHASE II							

Net Water Demand after Phase II

Flow Units						Q _{NET NEW}	
<i>gallon per day (gpd)</i>						69,792	
<i>cubic ft per second (cfs)</i>						0.11	

Phase III Master Plan (2025-2030)

Building Use	User Category	Unit of Measure	Unit Flow - Sewer (GPD)	Unit Flow - Water (GPD)	Existing	Net New (Construction minus Demo)	Final Total (including conversion)
Outpatient (Clinic)	Medical/Clinic Building	1000 SF	300	333	554,322	180,000	734,322
Inpatient (Hospital)	Medical/Clinic Building	1000 SF	300	333	635,722	(70,500)	565,222
Assembly	Club & Lodge Halls	1000 SF	125	139	69,295	(29,000)	40,295
Office	Office Building	1000 SF	200	222	141,296	57,000	198,296
Hospitality	Hotel	Room	125	139	32	48	80
Industrial	Light Manufacturing	1000 SF	25	28	90,409	40,000	130,409
Warehouse	Warehousing	1000 SF	25	28	37,244	(26,500)	10,744
TOTAL PHASE III							

Net Water Demand after Phase III

Flow Units						Q _{NET NEW}	
<i>gallon per day (gpd)</i>						52,181	
<i>cubic ft per second (cfs)</i>						0.08	

Phase IV Master Plan (2030-2035)

Building Use	User Category	Unit of Measure	Unit Flow - Sewer (GPD)	Unit Flow - Water (GPD)	Existing	Net New (Construction minus Demo)	Final Total (including conversion)
Research	Medical/Clinic Building	1000 SF	300	333	657,936	101,000	758,936
Office	Office Building	1000 SF	200	222	198,296	120,000	318,296
TOTAL PHASE IV							

Net Water Demand after Phase IV

Flow Units						Q _{NET NEW}	
<i>gallon per day (gpd)</i>						60,333	
<i>cubic ft per second (cfs)</i>						0.09	

Overall Phases I-IV

Building Use	User Category	Unit of Measure	Unit Flow - Sewer (GPD)	Unit Flow - Water (GPD)	Existing	Net New (Construction minus Demo)	Final Total (including conversion)
Outpatient (Clinic)	Medical/Clinic Building	1000 SF	300	333	304,322	430,000	734,322
Inpatient (Hospital)	Medical/Clinic Building	1000 SF	300	333	425,722	139,500	565,222
Research	Medical/Clinic Building	1000 SF	300	333	457,936	301,000	758,936
Office	Office Building	1000 SF	200	222	186,296	132,000	318,296
Hospitality	Hotel	Room	125	139	40	40	80
Assembly	Club & Lodge Halls	1000 SF	125	139	69,295	(29,000)	40,295
Warehouse	Warehousing	1000 SF	25	28	59,244	(48,500)	10,744
Industrial	Light Manufacturing	1000 SF	25	28	73,909	56,500	130,409
Housing	Single Family Home	Dwelling Unit	260	289	4	0	4
	Multi-Unit Residential	Dwelling Unit	156	173	3	0	3
TOTAL PHASES I-IV							

Net Water Demand after All Phases I - IV

Flow Units					Q _{EXIST}	Q _{NET NEW}	Q _{TOTAL}
<i>gallon per day (gpd)</i>					457,947	321,250	779,197
<i>cubic ft per second (cfs)</i>					0.71	0.50	1.21
<i>ac-ft per year (ac-ft/yr)</i>					512.97	359.85	872.81