

Appendix K

Water Supply Memorandum





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memorandum

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cc Department of Public Works, City of Carson

from ESA Community Development Group

subject The District at South Bay Water Supply Memorandum

Introduction

In 2006, the City of Carson (City) certified the Final Environmental Impact Report (2006 FEIR) and approved the Carson Marketplace Specific Plan for the Carson Marketplace Project (herein referred to as the approved Project) (SCH No. 2005051059). The approved Project included 1,550 residential units and 1,995,125 square feet (sq.ft.) of commercial area (including a 300-room hotel) on 168 acres within the City of Carson. The 2006 FEIR included a Water Supply Assessment (WSA) dated August 15, 2005, prepared by the California Water Service Company (Cal Water), which is the designated water supplier for project site. The site is located within Cal Water's Dominguez District service system.

In accordance with the requirements of Senate Bill 610 and California Water Code Section 10912(a), Cal Water, as the designated water supplier, prepared the WSA as an assessment of whether the projected water demands for the approved Project could be met by its projected water supply. In order to determine if Cal Water had adequate supply for the approved Project, the WSA first determined the projected water demand for the approved Project and then compared that demand with the projected water supply for the Dominguez District for a 20-year period from 2005 to 2025 under normal, single-dry-year, and multiple-dry-year conditions. The WSA determined that Cal Water did have adequate water supplies to meet the projected demands of the approved Project in addition to those of its existing customers and other anticipated future water users in the Dominguez District for the 20-year period under all conditions.

The Carson Marketplace Specific Plan was amended in 2011, and an application has been filed by the Carson Reclamation Authority in 2017 for additional amendments to the Specific Plan (herein referred to as the proposed modified Project). The City is preparing a Supplemental Environmental Impact Report (SEIR) to the 2006 FEIR to evaluate the changes presented by the proposed modified Project to the approved Project, and to determine whether changes in circumstances surrounding the project site and the approved Project (if any), and new information (if any), require further analysis under CEQA.

Despite these prior and requested modifications, the proposed modified Project retains the range of land uses adopted by the City under the approved Specific Plan. Specifically, the proposed changes to the approved Project would modify or otherwise reduce the approved Project, which consisted of 1,995,125 sq.ft. of commercial uses on the Project site and no more than 1,550 residential units. In comparison, the proposed modified Project would consist of development of the Property with a total of 1,250 residential units and 1,834,833 sq.ft. of commercial uses including approximately 711,500 sq.ft.¹ of regional commercial uses, including outlet and restaurant uses on Planning Area (PA) 2, and 890,000 sq.ft. of regional retail center, neighborhood-serving commercial, restaurant, and commercial recreation/entertainment uses on PA 3, as well as 350 rooms total in two hotels.² Although the proposed modified Project contains 50 additional hotel rooms as compared with the approved Project, this represents only an increase of 33,333 sq.ft. of development, and there is a decrease in the other types of commercial uses on the Property, resulting in an overall decrease 160,282 sq.ft. in commercial square footage in the proposed modified Project as compared with the approved Project. Because a WSA has already been prepared for the approved Project, California Water Code Section 10910(h) is the applicable standard by which to determine if further analysis of water supply and demand is required in connection with the proposed modified Project. California Water Code Section 10910(h) provides as follows with respect to analysis of water supply and demand for modifications to a previously approved Project:

“Notwithstanding any other provision of this part, if a project has been the subject of a water supply assessment that complies with the requirements of this part, no additional water supply assessment shall be required for subsequent projects that were part of a larger project for which a water supply assessment was completed and that has complied with the requirements of this part and for which the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), has concluded that its water supplies are sufficient to meet the projected water demand associated with the proposed project, in addition to the existing and planned future uses, including, but not limited to, agricultural and industrial uses, unless one or more of the following changes occurs:

- (1) Changes in the project that result in a substantial increase in water demand for the project.
- (2) Changes in the circumstances or conditions substantially affecting the ability of the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), to provide a sufficient supply of water for the project.
- (3) Significant new information becomes available that was not known and could not have been known at the time when the assessment was prepared.
 - (i) For the purposes of this section, hauled water is not considered as a source of water.³”

The City has requested an evaluation of the proposed modified Project in the context of California Water Code Section 10910(h) to confirm whether demand and generation rates have been adequately addressed by the WSA and have not substantially increased due to project modifications, that there are no changes in circumstances or conditions that substantially affect the ability of Cal Water to provide a sufficient supply of water to the proposed modified Project, and that there is no significant new information that would affect the analysis and conclusions in the water supply assessment and applicable water management plans.

¹ This number is based on gross building area (GBA). Measures in gross leasable area (GLA), which is the occupied area for determining water consumption, the amount of regional commercial is 581,020 sq.ft.

² Consistent with the methodology used in the 2006 FEIR, these 350 hotel rooms comprise 233,333 sq.ft. of the total commercial square footage on the Property.

³ Hauled water is not a source of water for the Dominguez District and, therefore, is not part of the analysis for the proposed modified Project.

Analysis of the Proposed Modified Project Consistency with Water Code Section 10910(h)

(1) Do the changes in the proposed modified Project result in a substantial increase in water demand for the project?

Table 1 summarizes the projected water demand for the approved Project by land use. The WSA analyzed the projected water demand of the approved Project, which included 1,550 residential units, a 300-room hotel and 1,995,125 sq.ft. of commercial area, and estimated a total daily water demand of 795,470 gallons per day (gpd) and an annual total of 891 acre-feet per year (afy). The WSA concluded that “Cal Water believes it will have adequate water supplies to meet the projected demands of the Carson Marketplace Project in addition to those of its existing customers and other anticipated future water users in the Dominguez District for the 20-year period from 2005 to 2025 under normal, single-dry-year, and multiple-dry-year conditions.” Therefore, the WSA determined that Cal Water would have adequate water supply to support the approved project and impacts related to water demand and supply would not be significant.

**TABLE 1
PROJECTED CARSON MARKETPLACE PROJECT WATER DEMAND BY LAND USE**

	Category	Units of Area (sq.ft.)	Use Factor (gpd per unit or sq.ft.)	Average Use (gpd)
Residential	Apartment	400	203/unit	81,200
	Condominiums	1,150	203/unit	233,450
	<i>Subtotal</i>	<i>1,550</i>		<i>315,000</i>
Commercial Recreational/ Entertainment	Multiplex movie theater	110,000	0.138/sq.ft.	15,180
	Bowling Alley	25,000	0.165/sq.ft.	4,125
	Fitness Center	35,000	0.165/sq.ft.	5,775
	Multi-purpose Recreation Center	44,000	0.850/sq.ft.	3,520
	<i>Subtotal</i>	<i>214,000</i>		<i>28,600</i>
Retail	Shopping Center	610,000	0.358/sq.ft.	218,380
	Electronic Superstore	50,000	0.110/sq.ft.	5,500
	Home Improvement	150,000	0.110/sq.ft.	16,500
	Discount Club	150,000	0.110/sq.ft.	16,500
	Home Furnishing	350,000	0.110/sq.ft.	38,500
	Office Supply	50,000	0.110/sq.ft.	5,500
	Pet Supply	50,000	0.110/sq.ft.	5,500
	Supermarket	90,000	0.650/sq.ft.	14,850
	<i>Subtotal</i>	<i>1,500,000</i>		<i>321,230</i>
Restaurants	High Turnover	50,000	1.1/sq.ft.	55,000
	Fast Food	15,000	1.1/sq.ft.	15,500
	Quality	16,125	1.1/sq.ft.	17,740
<i>Subtotal</i>	<i>81,125</i>		<i>89,240</i>	
Hotel		300 (rooms)	0.138/room	41,400
Total Estimated Daily Demand				795,470 gpd
Total Estimated Annual Demand				892 afy

SOURCE: CAL Water, 2005 (Table 2).

Table 2 summarizes the projected water demand for the proposed modified Project by land use based on the same use factors used in the WSA for the approved Project. The same use factors were used to project the proposed modified Project's water demand in order to provide a consistent comparison to the projected water demand for the approved Project. As shown in Table 2, by using the same use factors as the approved Project, the proposed modified Project is projected to require a total estimated daily water demand of 629,445 gpd and a total estimated annual demand of 705 afy. When compared to the approved Project, the proposed modified Project would result in a decrease of 166,025 gpd and 187 afy.

However, for purposes of comparison with the WSA, it is necessary to account for the 300 units on DD3, which were included in the WSA analysis as part of the approved Project. The 300 units were determined in the WSA to have a water demand of 60,900 gpd, or 68 afy. When these units are added to the proposed modified Project for comparative purposes with the 2006 FEIR, the proposed modified Project and the DD3 300-unit development together would result in a total estimated daily water demand of 690,345 gpd and a total estimated annual demand of 773 afy, which is decrease of 105,125 gpd and 119 afy as compared with the water demand established in the WSA.

Further, the regional commercial square footage amount of 696,500 sq.ft. used for PA 2, which is based on gross building area (GBA), establishes the demand of the outlet project utilizing GBA square footage in order to provide a more conservative approach of assessing water consumption. However, based on the current program and design for the Regional Commercial outlets, approximately 115,480 sq.ft. attributed to the GBA will not be "occupied" in the traditional sense of assessing water demand (much like sidewalks are not included), as that space is associated with walkways, corridors, etc., that have been included in the GBA. Other commercial portions of the proposed modified Project are proposed to utilize a more traditional retail format in which gross leasable area (GLA) and GBA are the same.

Therefore, it is likely more appropriate to utilize GLA for the retail regional commercial uses on PA 2 only. Applying the same use factor to GLA as was used for GBA for that development would result in a reduction of water demand of 63,912 gpd in average use, or a reduction of an additional 72 afy. If this standard is utilized, even taking into account the additional 300 residential units in DD3, the actual water demand of the proposed modified Project would be even a greater decrease as compared to that of the approved Project.⁴

Moreover, it is anticipated that overall demand for water by the proposed modified Project will be even further reduced by water savings from intervening developments in water conservation technology and features, which are now prominent in project design with compliance with CALGreen Code, and which were not available when the WSA projections were originally prepared. According to the 2015 UWMP for the Dominguez District Table 4-6, following new building codes, including CALGreen, and standards, future passive savings range from 21 afy in 2015 to 1,220 afy in 2040. As more development and redevelopment occurs under more water-saving codes and standards, overall demand for water in the Dominguez District, including the proposed modified Project, could be further reduced.

Even setting aside anticipated demand in overall water consumption that will result from CALGreen and other requirements, even with using GBA for PA 2 rather than GLA to calculate water usage, and even including the 300 units from DD3, the proposed modified Project would result in a slight decrease in water usage as compared to the approved Project, and overall has water demand that is substantially similar to the approved Project. With the

⁴ Even if the mix of uses is slightly different than that shown on Table 2, the overall water usage would still be similar to, or less than, the approved Project.

application of either CALGreen requirements, or use of the more likely GLA as a basis for calculating water usage, or both factors combined, it is much more likely that the proposed modified Project would actually result in further reduction in water demand as compared to the approved Project. Therefore, under any of these scenarios, the proposed modified Project would not result in a substantial increase in water demand previously determined for the approved Project. As such, the proposed modified Project would not trigger the necessity to prepare a new WSA under the first question under California Water Code Section 10910(h). Impacts related to water demand for the proposed modified Project are anticipated to be less than significant, similar to the approved Project.

**TABLE 2
PROJECTED PROPOSED MODIFIED PROJECT WATER DEMAND BY LAND USE**

Category		Units of Area (units or sq.ft.)	Use Factor (gpd per unit or sq.ft.)	Average Use (gpd)
PA 1	Residential	1,250	203/units	253,750 ^a
	<i>Subtotal</i>	<i>1,250</i>		<i>253,750</i>
PA 2	Regional Retail Center Commercial	696,500 ^b	0.110/sq.ft.	76,615
	Restaurant	15,000	1.1/sq.ft.	16,500
	<i>Subtotal</i>	<i>711,500</i>		<i>93,115</i>
PA 3 ^c	Multiplex Movie Theater	130,000	0.138/sq.ft.	17,940
	Regional Retail Center Commercial	585,000	0.110/sq.ft.	64,350
	Neighborhood Serving Commercial (Supermarket)	90,000	0.650/sq.ft.	58,500
	Restaurant	85,000	1.1/sq.ft.	93,500
	Hotel	350 rooms ^d	0.138/rooms	48,300
	<i>Subtotal</i>	<i>1,123,333 sq.ft.</i>		<i>282,590</i>
	Total	1,834,833 sq.ft.		
Total Estimated Daily Demand				629,445 gpd
Total Estimated Annual Demand				705 afy

SOURCE: ESA, 2017.

NOTES:

^a For informational purposes note that including the additional 300 residential units from DD3 would account for an additional water demand of 60,900 gpd, or 68 afy.

^b 696,500 is based on GBA. Measured in GLA, which is the occupied area for determining water consumption, the amount of regional commercial is 581,020 sq.ft. Outlet uses are consistent with regional retail center commercial.

^c These square footage divisions are conceptual, and may be modified, but are substantially the same with regard to the use factors utilized to address water consumption.

^d These 350 hotel rooms are anticipated to comprise approximately 233,333 sq.ft. of commercial, as noted above.

(2) Does the proposed modified Project result in changes in the circumstances or conditions substantially affecting the ability of Cal Water to provide a sufficient supply of water for the project?

As described in the WSA, Cal Water’s projected total water demand forecasts in its 2005 Urban Water Management Plan (2005 UWMP) (January 2005) for the Dominguez District are based on multiplying the forecast of projected services for each customer class by the anticipated demand per service for that class. Forecasts of growth in services are based on the 10-year average of growth in services by customer class. Three different demand scenarios per service per customer class (low, average, and high) were developed. Low demand is calculated using the lowest recorded daily demand per service for each customer class during this period. Average daily demand is calculated as the mean value for this period. High demand is based on the highest

recorded demand per service for each customer class. Maximum daily demand forecasts are calculated for each of these three demand scenarios by multiplying 1.75 times the low, average, or high day. For the year 2025, the projected annual average daily demand is 47,132 afy or 42.04 million gpd (mgd). The maximum daily demand projected for the Dominguez District in 2025 is 82,481 afy or 73.57 mgd (1.75 x 42.04 mgd).

Cal Water's primary sources of water are groundwater pumping, imported water acquired from the Metropolitan Water District of Southern California through the West Basin Municipal Water District (WBMWD), and desalted brackish water and recycled water provided by the WBMWD. Cal Water's water supply has a high reliance on the continued availability of imported water, and Cal Water has made efforts to enhance and develop facilities that shift reliance toward use of local supplies. The West Basin is reducing its reliance on imported water, focusing on brackish ground water and recycled water. This change in the West Basin's water sources will make its water supply more dependable as it is less reliant on imported water. The WSA determined that Cal Water had adequate capacity to provide for projected demand for the Dominguez District, including the approved Project, through the year 2025 under normal conditions. The supply capacity for the Dominguez District in 2005 consisted of 15.0 mgd of total annual adjudicated groundwater rights, 103.7 mgd of contracted for imported water and 3.08 mgd of recycled water for a total of 121.78 mgd of water supply. Maximum daily water demand for the Dominguez District for 2025 is projected to be 73.57 mgd. The approved Project's projected maximum daily water demand was estimated to be 1.19 mgd. Therefore, total forecasted maximum day demand for both the Dominguez District and the approved Project is 74.76 mgd, which is 47 mgd less than total available water supply capacity under normal conditions. Therefore, the WSA concluded that the Dominguez District has adequate water supply to support the approved Project.

In order to assess whether the Dominguez District would still have adequate water supplies to support the proposed modified Project, ESA assessed the projected water demand and supply rates within the 2015 UWMP for the Dominguez District prepared by Cal Water were assessed. In the preparation of UWMPs, jurisdictions usually factor in the land use designations within its service area into the forecast modeling for water demand as different land uses require varying levels of water supply dependent on the type of use. The 2015 UWMP states that other plans, such as but not limited to, city and county general plans, water master plans, recycled water master plans, integrated resources plans, integrated regional water management plans, and groundwater management plans are incorporated into the projections and forecasts for the Dominguez District. Since the project site is designated as Mixed Use – Residential in the City of Carson's General Plan and is zoned as Specific Plan – Carson Marketplace, the 2015 UWMP has accounted for these land use types within its water demand and supply projections. Further, since the proposed modified Project includes the same range of land uses as the approved Project but reduces the square footage of allowable commercial uses, the proposed modified Project would be consistent with the 2015 UWMP projections for the Dominguez District.

Table 3 summarizes the projected total water demand and supply for the Dominguez District through 2040. As shown in Table 3, Cal Water projects that there will be adequate water supply to support the increasing water demand within the Dominguez District. Additionally, 2015 UWMP incorporates a wide variety of options and programs to further decrease reliance on imported water by augmenting groundwater and recycled water production, which is reflected in the water supply summarized in Table 3.

In summary, since the 2015 UWMP accounted for the land use types of the approved Project and has indicated that the Dominguez District has an adequate projected water supply to cover the projected water demand until 2040, and since water demand usage of the proposed modified Project is substantially similar to that of the

approved Project, there is reasonable basis to conclude that there is adequate water supply to serve the proposed modified Project. Further, adoption of the proposed modified Project would not cause a substantial change in circumstance or conditions which would affect Cal Water’s ability to provide adequate water supply to its service area. The proposed modified Project would not trigger the necessity to prepare a new WSA analysis under the second question under California Water Code Section 10910(h).

**TABLE 3
PROJECTED TOTAL WATER DEMAND AND SUPPLY FOR THE DOMINGUEZ DISTRICT**

	2015	2020	2025	2030	2035	2040
Projected Water Demand						
Potable and Raw Water Demand (afy)	28,003	31,508	31,413	31,528	31,683	31,883
Recycled Water Demand (afy)	9,369	11,238	12,088	12,988	13,988	15,088
Total Estimated Water Demand	37,372	42,746	43,501	44,516	45,671	46,971
Projected Water Supply						
Purchased Water (afy)	—	16,897	16,897	16,897	16,897	16,897
Groundwater (afy)	—	17,899	17,804	17,919	18,074	18,274
Recycled Water (afy)	—	7,950	8,800	9,700	10,700	11,800
Total Estimated Water Supply	—	42,746	43,501	44,516	45,671	46,971

SOURCE: Cal Water, 2015 UWMP for the Dominguez District, Table 4-3 and Table 6-9.

(3) Has significant new information becomes available that was not known and could not have been known at the time when the assessment was prepared?

The occurrence of a subsequent drought is not considered “significant new information” for the purposes of Water Code Section 10910(h). As a preliminary matter, the most recent drought was declared ended throughout most of the state by the Governor of California in April of 2017. More importantly, drought conditions were already assessed. As noted herein, supplies were assessed under a model that accounted for normal, single dry and multiple dry years. This would include drought conditions, meaning that a drought would not be “new” information as the circumstance has been assessed by the WSA and UWMP. Moreover, to the extent that there is new information, it would include additional supplies through alternative sources such as conservation, as discussed below, which would not be an adverse significant impact to water supply availability. Finally, there has been a decline in actual water demand in the District over the period analyzed and forecasted by the WSA to date due to water conservation technology and features in compliance with CALGreen codes, but this too would not negatively affect the overall analysis as it would provide for additional—not less—anticipated water supply.

As indicated above, water savings from intervening developments in water conservation technology and new building codes and standards which promote water savings have been incorporated into development and water planning documents. The proposed modified Project would not trigger the necessity to prepare a new WSA analysis under the third question under California Water Code Section 10910(h).

Conclusion

On the basis of the foregoing, it is determined that no further analysis of water supply and water demand is necessary for the proposed modified Project. The conclusion in the WSA, that Cal Water has sufficient water supplies to meet existing water demands and future growth, including the proposed modified Project, during normal, single dry and multiple dry years, for twenty years remains valid with the revised project under the

assumptions in the 2015 UWMP for the Dominguez District. The water demands and projections in the 2015 UWMP for the Dominguez District are consistent with the WSA; therefore, the WSA remains a valid assessment of the water supplies and water demands for the proposed modified Project.

Based on the analysis provided in this draft memorandum, the proposed modified Project would not cause any of the changes established in California Water Code Section 10910(h), which require a new WSA assessment to be prepared for the proposed modified project. Therefore, the WSA prepared for the approved Project remains a valid assessment of the water supplies and water demands for the proposed modified Project.