

Appendix R-I

Water Supply Assessment

SAN DIEGO PUBLIC UTILITIES DEPARTMENT
WATER SUPPLY ASSESSMENT
Water Code § 10910 *et seq.*

To: (Lead Agency)
San Diego Development Services Department
1222 1st Ave MS 301
San Diego, CA 92101

(Applicant)
San Diego International Airport
3225 N. Harbor Drive, 3rd Floor
San Diego, CA 92101

Project Information

PTS#: 634371 (Intern. Airport NEW WSA2019)

Project Title: San Diego International Airport, Airport Development Plan

Assessment of Availability of Water Supply

The Public Utilities Department (PUD) has approved the herein assessment and made the following determination regarding the above-described Project:

A sufficient water supply is available for the Project. The total water supplies available to PUD during normal, single-dry and multiple-dry years within a 20-year projection will meet the projected water demand of the Project in addition to the demand of existing and other planned future uses.

The foregoing determination is based on the following Water Supply Assessment Information and supporting information in the records of PUD.

Signature

Date

Title

– Alternative 4, which focuses the ADP on the replacement of Terminal 1, without the previously proposed commercial development area, and also foregoes the previously proposed expansion and improvement of Terminal 2. The following summarizes the main development characteristics of the originally proposed project and Alternative 4, as related to potential increases in water demands.¹

SDIA ADP PROJECT SITE AREA USES (Square Feet)							
	Current Area	Proposed Project			Alternative 4		
		Demolition	Construction	Total Future	Demolition	Construction	Total Future
Terminal 1 Replacement	336,000	336,000	1,210,000	1,210,000	336,000	1,210,000	1,210,000
Terminal 2-West Addition and Terminal 2-East Replacement	350,000 (T2-E)	350,000 (T2-E)	450,000 (T1-W Addition) 250,000 (T2-E Replacement)	700,000	NA	NA	NA
Terminals 1 and 2 Total	686,000	686,000	1,910,000	1,910,000	336,000	1,210,000	1,210,000
Administration Buildings	325,500	174,750	150,000	300,750	174,750	150,000	300,750
Ramp Control Tower	0	0	806	806	0	806	806
Central Utility Plan Upgrade and Expansion	14,500	0	12,000	26,500	0	12,000	26,500
Commercial Development	0	0	400,000	400,000	0	0	0

In light of the updated forecast, which projects a greater number of passengers at SDIA in the future than projected under the previous forecast, and the new alternative that will be included in the Recirculated Draft EIR, an updated Water Supply Assessment has been prepared.

This updated Water Supply Assessment addresses the projected water demand associated with the originally proposed project and with Alternative 4. It should be noted that although Alternative 4 proposes less new building construction.

¹In addition to the uses identified in the table, the ADP also includes improvements related to development of a new on-airport access road, improvements to aircraft taxiways, and replacement and expansion of aircraft apron areas; however, those uses do not affect water demands.

Table A - Water Demand Estimate (2040), Net Increase Over Baseline (2015 UWMP) Conditions

PROPOSED PROJECT							
	2015	2040	Net Increase	Demand Factor	Demand, gpd	Demand, afy	Notes
<u>Factors Affecting Future Demand</u>							1
Airport Employees	6,054	11,847	5,793	8.7 gpcd	50,399	56	2, 4
Commercial Development Area Employees (sf)	NA	800	800	8.7 gpcd	6,960	8	3, 4
Annual Number of Passengers	20,322,000	39,760,000	19,438,000	2 gpcd	106,510	119	5, 4
Central Utility Plant Expansion (sf)	14,500	26,500	12,000	2.8 gal/sf/day	33,600	38	6
Total Net Increase in Water Demand - Proposed Project					197,469	221	
% of UWMP Forecasted City Demands						0.08%	7

ALTERNATIVE 4							
	2015	2040	Net Increase	Demand Factor	Demand, gpd	Demand, afy	Notes
Airport Employees	6,054	11,847	5,793	8.7 gpcd	50,399	56	2, 4
Annual Number of Passengers	20,322,000	39,760,000	19,438,000	2 gpcd	106,510	119	5, 4
Central Utility Plant Expansion (sf)	14,500	26,500	12,000	2.8 gal/sf/day	33,600	38	6
Total Net Increase in Water Demand - Alternative 4					190,509	213	
% of UWMP Forecasted City Demands						0.08%	7

Notes:

- Future water demand assumed to be the net increase in 2040 over existing conditions in 2015 when the 2015 UWMP was prepared.
- Airport employment estimate for 2015 is based on the combination of aviation, concessions, and government employees at SDIA in 2017 per Table 5-1 of the *San Diego International Airport Economic Impact Study* completed in June 2018 by CDM Smith for the San Diego County Regional Airport Authority, as adjusted to the passenger activity level at SDIA in 2015 (i.e., 2017 employment of 6,667 reduced to 6,054 in 2015, in proportion with annual passenger activity level at SDIA in 2015 being approximately 20,322,000 compared to 22,370,000 in 2017). The airport employees for 2040 were estimated based on that same ratio of employees to passengers.
- One (1) employee per 500 feet is the acceptable standard for estimating commercial employment density.
- Airport employee and passenger gpd demand factors are based on SDIA Domestic Water use for the 5-year average water consumption during 2013-2017. Passenger demand is estimated at 2 gpcd and Airport employee demand is estimated at 8.7 gpcd. The factors are considered to be conservative in that they don't account for increased presence of water conservation features in new construction (i.e., low flow toilets, sensor activated faucets, etc.).
- The number of passengers in 2015 is based on the SDIA Annual Activity Report. Available: https://www.san.org/DesktopModules/Bring2mind/DMX/Download.aspx?EntryId=12777&Command=Core_Download&language=en-US&PortalId=0&TabId=403. The number of passengers projected for 2040 is based on the San Diego County Regional Airport Authority Technical Memorandum Aviation Activity Forecast Update – San Diego International Airport prepared by LeighFisher, April 2019.
- CUP (Central Utilities Plant) expansion is based on Applicant data and additional 12,000 sf resulting in an increase of 2.8 gallons/sf in water demand.
- See tables in Availability of Sufficient Supplies section for reference.

Table B - Water Capacity Estimate

Project Site Capacity	Est. Fixture Units	Est. EDUs
Est. Transferable	10,385 min.	Up to 420
Proposed Project	$10,385 + [(190,509 \text{ gpd}/500 \text{ gpd}) \times 20 \text{ FUs/DU}] = 18,005 \text{ FUs}$	900
Net Increase	7,620	480

This assessment assumes that the project will utilize all capacity ownership associated with the existing site. Water billing records indicate substantially less water consumption than the estimated transferable EDUs and **Table A** above suggests a net increase to water demand less than the corresponding net increase to EDUs in **Table B**. Therefore, a potential adjusted net increase to capacity at the project permitting and capacity fee evaluation stage is anticipated. The outcome of any reduced (or negated) net increase to capacity accounting would be considered to further reduce net demands imposed by the proposed project (**Table A**). See last page of this WSA for details.

Furthermore, in 2014 the Airport initiated an Air Conditioning Condensate Capture and Reuse Program that currently includes condensate collection containers at 15 gates and a 500-gallon water transport

truck. The salvaged water is used for a variety of uses, such as power washing sidewalks and the airfield, for construction/demolition dust control, and for cleaning vehicles and equipment. The airport is currently also exploring potential stormwater capture and reuse options on-site. Landscaping is anticipated to remain the same, or be reduced, in the future. Specifically, the Project is targeting a Leadership in Energy and Environmental Design (LEED) Silver certification or better. Also, a Stormwater Capture and Reuse System is proposed to be implemented at SDIA, which will reduce demands on potable water.

The water demand estimates presented in the tables above do not include the aforementioned water conservation and water demand reduction features, and, therefore, the estimates are considered to be conservative.

Availability of Sufficient Supplies

As indicated in the Executive Summary of the 2018 SDIA ADP Draft EIR (ES.5.1; Assembly Bill 93) the SDCRAA Act established SDCRAA jurisdiction over the 661-acre site as of 2003. Previous to the SDCRAA Act, ownership and operation of the airport was under the San Diego Unified Port District (1962 Port District control of the regional municipal airport). Section ES 5.3 indicates planned improvements to existing utilities surrounding the project area that require removing existing underground utility lines to accommodate new and modified structures and installing new lines and new connections to new and modified structures. Utility improvements are noted to occur in coordination with service providers such as PUD. Section ES 5.4 describes construction phasing for this project.

Under an evaluation of Level of Service (LOS) reliability in providing sufficient project-level supplies to meet proposed project demands for the ADP, this WSA assumes that the above described activity will, at a minimum, include relocation of all water meters to PUD accessible locations adjacent to North Harbor Dr. in coordination with the City's Development Services Department. Note that of the 27 existing water meters on-site, 14 meters are currently located on N. Harbor Dr.

The City's 2015 Urban Water Management Plan (UWMP) forecasted water demands compared with projected supplies for the PUD are shown in the series of **Tables 1-3** (UWMP, Sec. 8) on the following pages of this document. These demonstrate that with existing supplies, imported water purchases and demand "buffers" (e.g. an approximate 11,185 acre-feet per year (afy) Accelerated Forecasted Growth regional buffer described in the Water Authority and City's respective UWMP), as well as implementation of the projects discussed in the three agencies planning documents, there were adequate anticipated water supplies to serve all anticipated growth (existing and future planned uses) and development.

Furthermore, PUD data and interim supply and demand forecast tracking in 2018 supports a reduction in 2015 UWMP projected demands as a possible result of less water consumption than was originally projected (overestimation of demands or effective conservation efforts and increased water efficiencies).

Both the City of San Diego and County Water Authority 2015 UWMPs are available online and incorporated by reference into this document to support evidentiary record of the availability of sufficient supplies. Note that Pure Water Phase 1 (City of San Diego 2015 UWMP, pg. 6-16) has since been approved as a verifiable water supply source.

Conclusion

In summary, the WSA findings substantiate that there is sufficient planned water supply to serve this Project's future water demands within the PUD's water service area in normal, single-dry year, and multiple-dry water year forecasts.

Therefore, this WSA concludes that the projected level of water demand for this Project is within the regional water resource planning documents of the City, Water Authority, and MWD. Current and future water supplies, as well as the actions necessary to develop these supplies, have been identified in the water resources planning documents of the PUD, Water Authority, and MWD to serve the projected demands of the Project, in addition to existing and planned future water demands of the PUD.

DRAFT

TABLE 1 - PROJECTED SUPPLY AND DEMAND COMPARISON – NORMAL YEAR

Normal Year Demands/Supplies	Demand and Supplies (AFY)				
	2020	2025	2030	2035	2040
Water Demand (with wholesale and conservation)	200,984	242,038	264,840	273,748	273,408
Local Water Supplies					
Recycled Water (City service area only)	13,650	13,650	13,650	13,650	13,650
Local Surface Supply	22,900	22,800	22,700	22,600	22,500
Groundwater	3,100	3,100	3,100	3,100	3,100
Sub-Total Local Supplies	39,650	39,550	39,450	39,350	39,250
Water Supply from SDCWA (purchased water)	161,334	202,488	225,390	234,398	234,158
Total City Water Supplies	200,984	242,038	264,840	273,748	273,408
Estimated Water Shortages	0	0	0	0	0

TABLE 2 - PROJECTED SINGLE-DRY YEAR SUPPLY AND DEMAND COMPARISON

Single-Dry Year (1990)	Demand and Supplies (AFY)				
	2020	2025	2030	2035	2040
Water Demand (with wholesale and conservation)	213,161	256,883	281,167	290,654	290,292
Local Water Supplies					
Recycled Water (City service area only)	13,650	13,650	13,650	13,650	13,650
Local Surface Supply	16,657	16,584	16,512	16,439	16,366
Groundwater	3,100	3,100	3,100	3,100	3,100
Sub-Total Local Supplies	33,407	33,334	33,262	33,189	33,116
Water Supply from SDCWA (purchased water)	179,754	223,549	247,906	257,466	257,176
Total City Water Supplies	213,161	256,883	281,167	290,654	290,292

TABLE 3 - PROJECTED SUPPLY AND DEMAND COMPARISON DURING MULTIPLE DRY YEAR PERIOD ENDING IN 2040

Dry Year 1 (1990) Demands/Supplies	Demand and Supplies (AFY)				
	2020	2025	2030	2035	2040
Water Demand (with wholesale and conservation)	213,161	256,883	281,167	290,654	290,292
Local Water Supplies					
Recycled Water (City service area only)	13,650	13,650	13,650	13,650	13,650
Local Surface Supply	16,657	16,584	16,512	16,439	16,366
Groundwater	3,100	3,100	3,100	3,100	3,100
Sub-Total Local Supplies	33,407	33,334	33,262	33,189	33,116
Water Supply from SDCWA (purchased water)	179,754	223,549	247,906	257,466	257,176
Total City Water Supplies	213,161	256,883	281,167	290,654	290,292
Estimated Water Shortages	0	0	0	0	0
Dry Year 2 (1991) Demands/Supplies	Demand and Supplies (AFY)				
	2020	2025	2030	2035	2040
Water Demand (with wholesale and conservation)	200,610	241,581	264,338	273,228	272,888
Local Water Supplies					
Recycled Water (City service area only)	13,650	13,650	13,650	13,650	13,650
Local Surface Supply	16,233	16,162	16,091	16,020	15,949
Groundwater	3,100	3,100	3,100	3,100	3,100
Sub-Total Local Supplies	32,983	32,912	32,841	32,770	32,699
Water Supply from SDCWA (purchased water)	167,627	208,669	231,469	240,457	240,189
Total City Water Supplies	200,610	241,581	264,338	273,228	272,888
Estimated Water Shortages	0	0	0	0	0
Dry Year 3 (1992) Demands/Supplies	Demand and Supplies (AFY)				
	2020	2025	2030	2035	2040
Water Demand (with wholesale and conservation)	208,665	251,402	275,139	284,412	284,058
Local Water Supplies					
Recycled Water (City service area only)	13,650	13,650	13,650	13,650	13,650
Local Surface Supply	18,962	18,879	18,796	18,714	18,631
Groundwater	3,100	3,100	3,100	3,100	3,100
Sub-Total Local Supplies	35,712	35,629	35,546	35,464	35,381
Water Supply from SDCWA (purchased water)	175,953	215,773	239,592	248,948	248,677
Total City Water Supplies	208,665	251,402	275,139	284,412	284,058
Estimated Water Shortages	0	0	0	0	0