

REVISED DRAFT

WATER SUPPLY ASSESSMENT

BURBANK TOWN CENTER PROJECT

CITY OF BURBANK

February 1, 2019



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1. INTRODUCTION

This Water Supply Assessment (WSA) was prepared for the Burbank Town Center Project (Project) in the City of Burbank (City) (**Figure 1**). The Project involves comprehensive redevelopment of the Burbank Town Center property that would introduce a new mix of uses intended to create an integrated urban community in downtown Burbank. The Town Center property already includes retail, restaurant, and other land uses, some of which would be retained, and some replaced. The proposed Project area has been divided into eight areas for planning purposes for a total area of 37.29 acres (**Figure 2**). Some existing uses on the Project Site would be maintained with approximately 280,000 square feet (sf) of existing structures demolished to support development of apartments, condominium residences, a hotel, offices, retail shopping, restaurants, and a community event space (ESA, 2018). There are two options for the redevelopment of Planning Area 1: Option A would include 1,165 dwelling units and 162,761 sf of new land uses (ESA, 2018). The Project includes landscaping with water-conserving plants and with irrigation systems compliant with City regulations for water efficiency. It is also designed for a LEED Silver designation.

The Project will be built in five phases. The City, through Burbank Water and Power (BWP), will provide potable and recycled water to the Project for domestic, fire and irrigation uses.

The primary purpose of this WSA is to provide an independent evaluation of the Project's water needs and impacts on City water supplies. It documents Project water demand (including the net increase in water demand) and available water supply and determines if there is sufficient water supply to meet future water demands within the City's water supply service area under normal and dry hydrologic conditions for the next 20 years.

1.1. PROPOSED PROJECT DESCRIPTION

The Project has been divided into eight planning areas (Figure 2). Table 1 lists the current and proposed land uses for these areas and includes the two options under consideration for Area 1.

The commercial uses in Areas 1, 2, and 4 (Office Depot, bakery, and former IKEA) will be demolished and replaced with residential development (up to 1,165 dwelling units). Option B will have 103,000 sf of office development and 10 dwelling units in place of the 267 Option A dwelling units. No changes are planned for Areas 3 and 7 except that Area 3 development could increase from 37,969 sf to 40,000 sf. In Area 5, some of the existing uses will be replaced with a 200-room hotel and a restaurant while some other uses will remain. The existing enclosed Burbank Town Center Mall in Area 6 will remain the same. However, portions of it could be re-utilized into 120,000 sf of office and educational/institutional uses for a total of 1,075,000 sf and an increased area of 5,108 sf. Area 8 is currently private street segments and is proposed to be used for a plaza, sidewalks, and streets.

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Planning	Existing La	nd Uses	Proposed	under Option A	Proposed under Option B				
1 2 3 4	Land Use	Floor Area	Land Use	Floor Area/Size	Land Use	Floor Area/Size			
1	Office Depot	24,000 sf	Residential	267 dwelling units	Residential	5 live/work units and 5 townhome/ condominiums			
					Office	103,000 sf			
2	Corner Bakery Café	2,920 sf	Residential	101 dwelling units	01 dwelling units Same as Option A				
3	Retail and restaurant	37,969 sf	No new uses	proposed. Total d 40,0	tal developable area assumed to be 40,000 sf.				
4	Former IKFA	239 995 sf	Residential	797 dwelling units	Same as Option A				
-		200,000 01	Commercial	37,135 sf					
5	Retail, restaurant,	96.329 sf	Hotel	200 rooms, 115,201 sf	Same as Ontion A				
	and parking	90,329 SI	Restaurant	10,425 sf	Same				
6	Retail, restaurant, theater, entertain- ment and parking	1,069,892 sf	Existing us could educatio	es would remain; be re-utilized into nal/institutional use	portions of the 120,000 sf of es for a total c	e enclosed mall office and f 1,075,000 sf			
7	Retail and restaurant	33,081 sf	No new	uses proposed. E	xisting uses v	vould remain.			
8	Private street segments		To be used	as publicly access sidewalks for circ	sible plaza, pri ulation and ev	vate streets, and ents.			
Total		Approximately 1,506,958 sf		1,165 dwelling units and 162,761 sf new construction		908 dwelling units and 265,761 sf of new uses			

 Table 1.
 Burbank Town Center Existing and Proposed Land Uses

Adapted from Preliminary Administrative DEIR for the Burbank Town Center Project (ESA, August 10. 2018).

The breakdown of residential unit types per Planning Area is shown in **Table 2**. A mix of 267 micro units, studios, and one and two-bedroom units are proposed for Planning Area 1 under Option A. Only 10 one or two-bedroom units are proposed for Area 1 under Option B. Area 2 will consist of 110 micro units and Area 4 will be a mix of 797 micro units, studios, and one, two or three-bedroom units under both Options A and B.

	neonle/		Number	of Units		Total Po	pulation
Unit Type	unit ¹	Area 1, Option A	Area 1, Option B	Area 2	Area 4	Option A	Option B
Micro unit	1.2	24	0	101	78	244	215
Studio	2.45	53	0	0	135	461	331
1 Bedroom	2.45	111	5	0	309	1,029	769
2 Bedroom	2.45	79	5	0	263	838	657
3 Bedroom	2.45	0	0	0	12	29	29
Total	-	267	10	101	797	2,601	2,001

Table 2.Population Increase Associated with Burbank Town CenterProject

Type and number of units from CC Development Partners, 2018. People per unit information from ESA (2019).

1.2. BACKGROUND

The California Water Code section 10910 (also termed Senate Bill 610 or SB610) requires that a water supply assessment (WSA) be prepared for a project that is subject to the California Environmental Quality Act (CEQA) and subject to SB610 as defined in Water Code Section 10912. The Burbank Town Center Project is subject to CEQA and SB610 because it is a development of more than 500 dwelling units. Under SB610, documentation of water supply sources, quantification of water demands, evaluation of drought impacts, and provision of a comparison of water supply and demand are required to assess water supply sufficiency. This WSA follows the guidelines set out in the Guidebook for Implementation of Senate Bill 610 and Senate Bill 221 (DWR, 2003).

A foundational document for preparation of a WSA is an Urban Water Management Plan (UWMP). BWP prepared a 2015 UWMP (BWP, 2016), incorporated herein by reference, which was adopted on June 14, 2016, and is available online at: <u>https://www.burbankwaterandpower.com/urban-water-management-plan-update</u>.

WSAs and UWMPs both require water supply reliability information to be provided for the water service area in 5-year increments over a 20-year planning horizon. Recognizing the role of the UWMP in future WSAs, BWP prepared its UWMP with water supply reliability information over a 25-year horizon. The 2015 UWMP details City water supplies and demands to 2040. Water demand projections in the 2015 UWMP were based on general expected growth in the City using projected population and urban employment growth developed by the Southern California Association of Governments (Nahhas, 2018).

The 2015 UWMP recognizes that future water demand may be impacted by large development projects and includes the Burbank Town Center Project as one of four projects which may impact the City's future water demand. UWMP demand projections did not assign specific water demands for the Project because the demand was unknown at the time of plan preparation; however, the Burbank Town Center might be considered a part of the projected growth (Nahhas, 2018). BWP has requested that the Project incorporate high efficiency plumbing fixtures and comply with the upcoming State standard of 55 gallons per capita per day indoor residential water use. They also would like recycled water to be used throughout the Project site for all approved uses including landscape irrigation and all evaporative cooling towers.

1.3. WSA PURPOSE AND ORGANIZATION

The purpose of this WSA is to document the City's existing and future water supplies for its service area and to compare them to the area's future water demand, including that of the proposed Project. This comparison, conducted for both normal and drought conditions in five-year increments over the next 20 years, is the basis for assessing water supply sufficiency in accordance with the requirements of California Water Code Section 10910 (Senate Bill 610).

The WSA incorporates current and future water supply and demand information from the City's 2015 UWMP, current water use, and estimated water use of the Project and other approved and proposed projects. The analysis extends to 2040, addresses water demands in five-year increments, and provides information consistent with SB610 WSA requirements.

While fulfilling SB610 information requirements, this WSA is organized to be easily read and understood, as follows:

- Section 1 introduces the Project and provides background.
- Section 2 focuses on the current and proposed water demands of the Project that is the subject of this WSA.
- Section 3 documents the City's existing and future demands.
- Section 4 provides a summary of the City's current and future supplies. The City's supply consists of groundwater, potable Metropolitan Water District (MWD) water, untreated MWD water for recharge or exchange, and recycled water.
- Section 5 provides a comparison of water supply and demand (in normal and drought years) that fulfills the intent of SB610.
- Section 6 summarizes the report's conclusions.

2. PROJECT WATER DEMAND

This section presents the water demands for the existing Project area and water demand estimates for the proposed development.

2.1. EXISTING WATER USE

The existing Project area land uses are shown in the left portion of **Table 1**. **Table 3** lists recent water demands associated with these land uses. Between 2014 and 2017, BWP delivered 85 to 117 acre-feet per year (AFY) (104 AFY average) of potable water and 17 to 19 AFY (18 AFY average) of recycled water to the Project area. The lower potable water usage in 2017 is a result of the IKEA store (Area 4) closing in the beginning of 2017 and moving to another location in the City. Between 2014 and 2017, the Project area's average water use rate was 3.5 AF/acre based on an average of 122 AFY of potable and recycled water delivered to about 1,500,000 sf (34.4 acres) of development.

Table 3.	Recent Water Usage on the Burbank Town Center Project
	Site (AFY)

Project	2014		2015		20	16	20	17	2014-2017	Average
Area	Potable	Recycled	Potable	Recycled	Potable	Recycled	Potable	Recycled	Potable	Recycled
1	0.77	2.33	0.13	3.21	0.18	0.49	0.14	2.55	0.30	2.15
2	2.05	0.82	2.19	1.22	2.02	1.09	2.33	0.87	2.15	1.00
3	9.68	1.83	9.19	1.17	7.73	1.39	9.91	0.91	9.13	1.33
4	13.12	3.31	16.99	3.46	16.44	4.07	3.81	3.16	12.59	3.50
5	22.14	1.83	23.44	1.72	25.36	2.01	26.92	3.50	24.46	2.27
6	54.96	4.13	62.32	6.32	55.16	7.17	39.36	4.90	52.95	5.63
7	1.99	3.00	2.37	2.30	2.86	1.61	2.85	2.04	2.52	2.23
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	104.70	17.25	116.63	19.41	109.74	17.84	85.32	17.93	104.10	18.11

Based on data provided in BWP email 11/8/18 (Lee, 2018)

2.2. ESTIMATED FUTURE WATER DEMAND

Tables 4 and **5** show projected water demands for the Project at buildout for Options A and B, respectively. Water demands are presented for each planning area for residential and for non-residential demands. An additional potable water demand component is added to account for water losses and fire protection that is not included in the water use rates.

Water use under Option A is estimated to total about 318 AFY. About 295 AFY of this will be demands for potable water while recycled water demand will be about 12 AFY (**Table 4**). An additional 11 AFY is associated with water losses and firefighting. Under Option B, potable demand will be about 276 AFY, recycled water use will be about 12 AFY, water losses and firefighting will be about 10 AFY for a total demand of about 298 AFY (**Table 5**). Option A water use is about 20 AFY greater than Option B, reflecting the greater water usage of the additional multifamily units under Option A. The recycled water demand estimates are the same for both options as they will have similar landscaping.

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Table 4. Burbank Town Center Water Demand Projections at Buildout, Option A

					Potabl	e Water De	mand				
			Residentia	I	No	on-Resident	ial	Buildout	Additional Water	Recycled	Total Water Demand (AFY)
Area	Land Use Designation	Dwelling Units	Water Use Rate ¹ (AFY/ person)	Residential Water Demand (AFY)	Non- Residential (SF or Rooms)	Water Use Rate (AFY/SF or AFY/ Room)	Non- Residential Water Demand (AFY)	Potable Water Demand (AFY)	Associated with Water Losses and Fire Fighting ¹⁰ (AFY)	Water Demand ¹¹ (AFY)	
1A	Multifamily	267	0.061	38.37	-	-	-	38.37	1.43	0.58	40.38
2	Multifamily	101	0.061	7.69	-	-	-	7.69	0.29	0.14	8.12
2	Existing Land Uses (Retail & Restaurant) ²	-	-	-	37,969	-	9.13	9.13	0.34	1 22	10.80
5	Potential Additional Retail ³	-	-	-	2,031	0.00024	0.49	0.49	0.02	1.55	0.51
	Multifamily	797	0.061	113.76	-	-	-	113.76	4.24	1 73	119.72
4	Commercial ⁴	-	-	-	37,135	0.0000896	3.33	3.33	0.12	1.72	3.45
	Existing Land Use (Retail & Restaurants) ⁵	-	-	-	-	-	24.46	24.46	0.91	0.04	25.41
5	Hotel ⁶ (200 rooms)	-	-	-	200	0.112	22.40	22.40	0.84	0.04	23.24
	Mall ⁷	-	-	-	955,000	0.0000495	52.95	52.95	1.97	E CO	60.55
в	Potential Additional Office/Educational ⁸	-	-	-	120,000	0.000168	20.16	20.16	0.75	5.03	20.91
7	Existing Land Use (Retail & Restaurants) ⁹	-	-	-	-	-	2.52	2.52	0.09	2.23	4.85
8	Public Area	-	-	-	-	-	0.00	0.00	0.00	0.09	0.09
	Total	1,165	-	159.82	-	-	135.44	295.26	11.01	11.76	318.03

1. See Table 2 for information on people per unit. Additional pool and spa water use added to subtotals: Area 1 (0.3 AFY), Area 2 (0.3 AFY), Area 4 (0.6 AFY).

2. Average of existing 2014-2017 water use (see Table 3).

3. Increased water use proportionally for additional retail [2,031 sf (40,000-37,969)]. Assume increase would be all potable water (no new irrigation). Rate based on existing use [9.13/37,969 = 0.00024 AFY/acre].

4. Commercial rate assumed to be 0.08 gpd/sf (0.000896 AFY/sf). (Retail rate in Avion Burbank WSA (Todd, 2018)).

5. Average of existing 2014-2017 water use (see Table 3). Assumes that 2 new restaurants will have similar water usage as the two demolished ones.

6. Typical hotel room water use. Incorporates water use associated with hotel pool, spa and restaurant.

7. Rate at average of existing 2014-2017 water use (see Table 3) [52.95 AF/1,069,892 sf = 0.0000495 AFY/sf]. Area is 1,075,000 sf minus Office/Educational area (120,000 sf) [1,075,000-120,000].

8. Assumes a water use rate of 0.15 gpd/sf (0.000168 AFY/sf) for potential additional office/educational space (Avion Burbank WSA (Todd, 2018)). Assume increase would be all potable water (no new irrigation).

9. Average of existing 2014-2017 water use (see Table 3).

10. Assumes that 3.73% of water use is associated with water losses and fire protection based on fire protection being 0.04% of potable water sales (Table 3-1, 2015 UWMP) and losses being 3.69% of potable water sales (Table 3-2, 2015 UWMP).

11. Irrigation needs for Planning Areas 1, 2, 4, 5, and 8 from MJS Landscape Architecture (provided to Todd Groundwater 12/12/18). Irrigation for Areas 3, 6, and 7 assumed to be same demand as existing. Totals do not include potential additional recycled water use associated with evaporative cooling towers.

Table 5. Burbank Town Center Water Demand Projections at Buildout, Option B

					Potabl	e Water De	mand				
			Residentia	1	N	on-Resident	tial	Buildout	Additional Water	Recycled	Total
Area 1B 2 3 4 5 6 7	Land Use Designation	Dwelling Units	Water Use Rate ¹ (AFY/ person)	Residential Water Demand (AFY)	Non- Residential (SF or Rooms)	Water Use Rate (AFY/SF or AFY/ Room)	Non- Residential Water Demand (AFY)	Potable Water Demand (AFY)	Associated with Water Losses and Fire Fighting ¹¹ (AFY)	Water Demand ¹² (AFY)	Demand (AFY)
10	Multifamily	10	0.061	. 1.49	-	-	-	1.49	0.06	0.59	2.13
	Office ²	-	-	-	103,000	0.000168	17.30	17.30	0.65	0.38	17.95
2	Multifamily	101	0.061	. 7.69	-	-	-	7.69	0.29	0.14	8.12
2	Existing Land Uses (Retail & Restaurant) ³	-	-	-	37,969	-	9.13	9.13	0.34	1 22	10.80
1B 2 3 4	Potential Additional Retail ⁴	-	-	-	2,031	0.00024	0.49	0.49	0.02	1.55	0.51
	Multifamily	797	0.061	. 113.76	-	-	-	113.76	4.24	1 7 2	119.72
4	Commercial ⁵	-	-	-	37,135	0.0000896	3.33	3.33	0.12	1.72	3.45
-	Existing Land Use (Retail & Restaurants) ⁶	-	-	-	-	-	24.46	24.46	0.91	0.01	25.41
5	Hotel ⁷ (200 rooms)	-	-	-	200	0.112	22.40	22.40	0.84	0.04	23.24
C.	Mall ⁸	-	-	-	955,000	0.0000495	52.95	52.95	1.97	E (2)	60.55
ø	Potential Additional Office/Educational ⁹	-	-	-	120,000	0.000168	20.16	20.16	0.75	5.03	20.91
7	Existing Land Use (Retail & Restaurants) ¹⁰	-	-	-	-	-	2.52	2.52	0.09	2.23	4.85

8 Public Area			- 0.00	0.00	0.00	0.09 0.09
Total	908 -	122.94 -	- 152.74	275.68	10.28	11.76 297.72

1. See Table 2 for information on people per unit. Additional pool and spa water use added to subtotals: Area 2 (0.3 AFY), Area 4 (0.6 AFY).

2. Assumes a water use rate of 0.15 gpd/sf (0.000168 AFY/sf) for office space (Avion Burbank WSA (Todd, 2018)).

3. Average of existing 2014-2017 water use (see Table 3).

4. Increased water use proportionally for additional retail [2,031 sf (40,000-37,969)]. Assume increase would be all potable water (no new irrigation). Rate would be 9.13/37,969 = 0.00024 AFY/acre.

5. Commercial rate assumed to be 0.08 gpd/sf (0.000896 AFY/sf). (Retail rate in Avion Burbank WSA (Todd, 2018)).

6. Average of existing 2014-2017 water use (see Table 3). Assumes that 2 new restaurants will have similar water usage as the two demolished ones.

7. Typical hotel room water use. Incorporates water use associated with pool and spa facilities as well as hotel restaurant.

8. Rate at average of existing 2014-2017 water use (see Table 3) [52.95 AF/1,069,892 sf = 0.0000495 AFY/sf]. Area is 1,075,000 sf minus Office/Educational area (120,000 sf) [1,075,000-120,000].

9. Assumes a water use rate of 0.15 gpd/sf (0.000168 AFY/sf) for potential additional office/educational space (Avion Burbank WSA (Todd, 2018)). Assume increase would be all potable water (no new irrigation). 10. Average of existing 2014-2017 water use (see Table 3).

11. Assumes that 3.73% of water use is associated with water losses and fire protection based on fire protection being 0.04% of potable water sales (Table 3-1, 2015 UWMP) and losses being 3.69% of potable water sales (Table 3-2, 2015 UWMP).

12. Irrigation needs for Planning Areas 1, 2, 4, 5, and 8 from MJS Landscape Architecture (provided to Todd Groundwater 12/12/18). Irrigation for Areas 3, 6, and 7 assumed to be same demand as existing. Totals do not include potential additional recycled water use associated with evaporative cooling towers.

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TODD GROUNDWATER

An estimate of potential cooling tower water use was not available at the time of writing of this WSA. The use of recycled water for all potential evaporative cooling towers may represent an additional recycled water demand.

Table 6 presents Project water demands in five-year increments between 2020 and 2040 for Option A and **Table 7** shows it for Option B. In 2020, Project site demands are anticipated to be comparable to existing demands because the Project will likely not have started yet. These tables conservatively assume that the Project will be completed by 2025 but Project completion will more likely occur between 2025 and 2030.

Table 6.Burbank Town Center 2020-2040 Proposed WaterDemand, Option A

				Propo	sed Wate	r Demand	(AFY)			
Area	20;	20 ¹	20:	25 ²	20	30	20	35	20	40
	Potable Water	Recycled Water								
1	0.30	2.15	39.80	0.58	39.80	0.58	39.80	0.58	39.80	0.58
2	2.15	1.00	7.98	0.14	7.98	0.14	7.98	0.14	7.98	0.14
3	9.13	1.33	9.98	1.33	9.98	1.33	9.98	1.33	9.98	1.33
4	12.59	3.50	121.45	1.72	121.45	1.72	121.45	1.72	121.45	1.72
5	24.46	2.27	48.61	0.04	48.61	0.04	48.61	0.04	48.61	0.04
6	52.95	5.63	75.84	5.63	75.84	5.63	75.84	5.63	75.84	5.63
7	2.52	2.23	2.61	2.23	2.61	2.23	2.61	2.23	2.61	2.23
8	0.00	0.00	0.00	0.09	0.00	0.09	0.00	0.09	0.00	0.09
Total	104.10	18.11	306.27	11.76	306.27	11.76	306.27	11.76	306.27	11.76

2020 water use is assumed to be the same as average of existing 2014 to 2017 water use (see Table 3).
 Construction is conservatively assumed to be completed by 2025.

Table 7.Burbank Town Center 2020-2040 Proposed WaterDemand, Option B

Area				Propo	sed Wate	r Demand	(AFY)			
	20:	20 ¹	20:	25 ²	20	30	20	35	20	40
	Potable Water	Recycled Water								
1	0.30	2.15	19.50	0.58	19.50	0.58	19.50	0.58	19.50	0.58
2	2.15	1.00	7.98	0.14	7.98	0.14	7.98	0.14	7.98	0.14
3	9.13	1.33	9.98	1.33	9.98	1.33	9.98	1.33	9.98	1.33
4	12.59	3.50	121.45	1.72	121.45	1.72	121.45	1.72	121.45	1.72
5	24.46	2.27	48.61	0.04	48.61	0.04	48.61	0.04	48.61	0.04
6	52.95	5.63	75.84	5.63	75.84	5.63	75.84	5.63	75.84	5.63
7	2.52	2.23	2.61	2.23	2.61	2.23	2.61	2.23	2.61	2.23
8	0.00	0.00	0.00	0.09	0.00	0.09	0.00	0.09	0.00	0.09
Total	104.10	18.11	285.96	11.76	285.96	11.76	285.96	11.76	285.96	11.76

1. 2020 water use is assumed to be the same as average of existing 2014 to 2017 water use (see Table 3).

2. Construction is conservatively assumed to be completed by 2025.

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3. CITY OF BURBANK WATER DEMAND

This section summarizes water demands for the City of Burbank. It includes discussion of factors that affect total water demand including climate, population, and mix of customer types such as residential, commercial, industrial, and irrigation. A comparison of Project water demand projections to 2015 UWMP demand projections occurs at the end of this section.

3.1. CLIMATE

Climate has a notable influence on water availability and demand on a seasonal and annual basis. During drought, influences include greater water demand for outdoor uses, specifically landscape irrigation, and less supply availability because of reduced precipitation and greater evaporation.

Table 8 summarizes representative climate data for the City, including average monthly and annual rainfall and evapotranspiration (ET). The City has a Mediterranean climate, characterized by dry summers and wet winters with year-round moderate-to-warm temperatures. Reflecting this pattern, water demand in the City is greater in the summer than in the winter. Average annual rainfall is about 17.5 inches. The average annual ET deficit of almost 38 inches generally represents the amount of irrigation water needed to supplement the rainfall and maintain turf areas.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Max °F	67.5	69.5	70.6	74.9	77.5	83.2	88.9	89.9	87.1	81.5	73.5	67.9	
Mean °F	54.8	56.9	58.4	62.2	65.9	70.8	75.5	76.2	73.5	67.6	59.5	54.6	
Min °F	42.0	44.3	46.2	49.5	54.2	58.3	62.1	62.4	59.9	53.6	45.4	41.3	
Precip. (in)	3.56	4.29	3.88	1.02	0.37	0.12	0.02	0.18	0.30	0.55	1.05	2.15	17.49
ET (in)	2.20	2.45	3.64	4.74	5.31	6.06	6.75	6.66	5.01	3.95	2.73	2.31	51.81
ET deficit (in)	-	-	-	3.72	4.94	5.94	6.73	6.48	4.71	3.40	1.68	0.16	37.76

Table 8. Climate Data

From 2015 UWMP Table 2-2 (BWP, 2016)

Climate change may affect future water supply availability for the City of Burbank by reducing water availability, changing local precipitation patterns, and increasing water demands. As discussed in greater detail in Section 4, the City has developed a portfolio of different water supplies, including imported water from the MWD, groundwater, and recycled water.

3.2. POPULATION

City population, a key factor in water demand, is analyzed in the 2015 UWMP. **Table 9** reproduces the UWMP population data for the City's water service area for 2015 with projections to 2040. The table also includes the projected incremental increases of population during each five-year period. Between 2015 and 2040, the City's population is anticipated to increase by about 12 percent, or a total of 12,737 persons, with the greatest increase occurring between 2015 and 2020.

Year	2015	2020	2025	2030	2035	2040
Population	106,084	112,451	113,179	114,850	115,680	118,821
Increase	-	6,367	728	1,671	830	3,141

Table 9. Population Projections

From 2015 UWMP Table 2-1 (BWP, 2016)

3.3. CURRENT AND PROJECTED WATER USE

The City's current and projected water demands are shown in **Table 10**. In 2015, total water use, including potable water, groundwater recharge, recycled water, and system losses, was 24,856 AFY. Total water use is anticipated to increase to 27,250 AFY by 2040, a 9.6 percent increase. These projections are generally based on the population projections and per capita water use rates used in the 2015 Update of the Metropolitan Water District Integrated Water Resources Plan (BWP, 2016). Note that total water use in 2020 (28,521 AF) is higher than subsequent years based on an assumption that a 2020 water use rate of 150 gallons per capita per day (gpcd) will gradually decrease to 130 gpcd by 2040 (BWP, 2016). In 2015, water usage was 127 gpcd, reflecting severe City and State water use restrictions in response to the drought. Those restrictions have been lifted.

Approximately 71 to 73 percent of the potable water is projected to be consumed by singlefamily and multi-family residential customers. Between 2015 and 2040, notable water use trends apparent in **Table 10** include an increase in water use sales between 2015 and 2020, then a decrease to 2040. Groundwater recharge decreases by about 2,000 AFY while recycled water exchange for groundwater credits with the Los Angeles Department of Water and Power (LADWP) increases by about the same amount.

Customer Tune	Current	Projected					
Customer type	2015	2020	2025	2030	2035	2040	
Single-Family Residential	6,679	8,481	8,061	7,817	7,543	7,412	
Multi-Family Residential	3,946	5,011	4,924	4,805	4,629	4,640	
Commercial/Industrial/ Institutional/Governmental	3,883	4,930	4,938	4,939	4,884	4,818	
Total Water Sales	14,508	18,422	17,923	17,561	17,056	16,870	
Groundwater Recharge	7,350	6,300	4,700	4,800	4,900	4,900	
Recycled Water	2,463	3,027	3,047	3,047	3,047	3,047	
System Losses	535	472	460	450	437	433	
Total Additional Water Uses and Losses	10,348	9,799	8,207	8,297	8,384	8,380	
Recycled Water Exchanged with LADWP for Groundwater Credits	0	300	2,000	2,000	2,000	2,000	
Total Water Use	24,856	28,521	28,130	27,858	27,440	27,250	

Table 10. City of Burbank Current and Projected Water Use (AFY)

From 2015 UWMP Tables 3-2, 3-6, 3-8, and 3-9 (BWP, 2016)

3.4. PROJECT DEMANDS COMPARED TO CITY UWMP PROJECTED DEMANDS

As mentioned previously, the 2015 UWMP did not assign any specific water demand for the Project. However the Burbank Town Center Project might be considered a part of the projected UWMP growth, provided its population growth and demands are within the UWMP projected demands. This section compares 2015 UWMP population and water demand projections to those of the Project to determine if Project demands are included in the UWMP planning projections.

The population increase associated with the Project can be estimated assuming the estimated increase in population associated with the Project (see **Table 2**). Accordingly:

- Option A (1,165 units) = 2,601 new residents
- Option B (908 units) = 2,001 new residents.

These increases (2,001 or 2,601) are well within the UWMP population increase of 7,095 anticipated to occur between 2015 and 2025 (see **Table 9**). Note that these population totals conservatively do not incorporate vacancy rates (typically five percent).

A comparison of UWMP and Project water demand increases is presented in **Table 11**. The top portion of **Table 11** shows the UWMP projected changes in demands between 2015 and 2040. As mentioned in Section 3.3, water demands are projected to increase between 2015 and 2020 (by 3,666 AFY) and then decrease between 2020 and 2040 (by 1,271 AFY) reflecting an overall decrease in per capita water use between 2020 and 2040 (BWP, 2016). The bottom portion of **Table 11** shows the projected increase in water demands (196 AFY for Option A or 176 AFY for Option B) in association with the proposed Project.

Table 11.Comparison of Demand Increase Projections - UWMP to
Project (AFY)

	2015	2020	2025	2030	2035	2040
UWMP Demand	24,855	28,521	28,130	27,858	27,440	27,250
Change	-	3,666	-391	-272	-418	-190
Existing Project Area Water Use ¹ (see Table 3)	136	122	122	122	122	122
Option A Project Demands (see Tables 4 and 6)	0	0	318	318	318	318
Option A Increase in Project Site Demands	-	-	196	196	196	196
Option B Project Demands (see Tables 5 and 7)	0	0	298	298	298	298
Option B Increase in Project Site Demands	-	-	176	176	176	176

1. Used average of 2014 to 2017 water use for 2020-2040 (see Table 3).

The UWMP and BWP identified seven major proposed projects that could impact BWP's future water demand. Water demands potentially associated with these projects is provided below.

- Avion-Burbank, 3001 North Hollywood Way. 185 AFY: from WSA (Todd, 2018) based on 1.3 million sf of offices, retail and industrial uses and a 166-room hotel.
- The Premier on First, 103 East Verdugo Avenue. 100 AFY: rough estimate based on a 14-story residential tower with a total of 154 multi-family units and 11,078 sf ground floor retail space PLUS a 14-story 230 room hotel and a 7,100-sf restaurant or a 14-story 159,000 sf office building and 14,000 sf of retail/restaurant space on the ground floor.
- **115 North Screenland Drive. 17 AFY**: rough estimate based on a 13-story mixed use project that includes 40 apartments and 3,730 sf of ground floor commercial space.
- **777 Front Street. 106 AFY**: rough estimate based on 572 residential units, 1,067 sf of commercial space, and a 317-room hotel.
- First Street Village, North First Street between Magnolia Blvd. and Palm Ave. 38 AFY: rough estimate based on 275 residential units and 18,976 sf of retail and commercial space.
- AC Hotel, 550 North Third Street. 35 AFY: rough estimate based on a 196-room hotel, a 3,800-sf restaurant and hotel amenities including a pool, spa, and fitness center.
- Airport Hotels, 2500 North Hollywood Way. 47 AFY: rough estimate based on a 200-room hotel and a 216-room hotel or 120,000 sf of office space.

This added increase of about 530 AFY plus the increased demands associated with the Burbank Town Center (196 or 176 AFY) are within the UWMP water demand projection increase of 3,666 AFY (2015 to 2020) and 2,395 AFY (2015 to 2040) (**Table 11**). Therefore, it is assumed that the Burbank Town Center Project water demands and water demands associated with these other major projects have been included in the 2015 UWMP projections.

4. CITY OF BURBANK WATER SUPPLY

Burbank Water and Power (BWP) provides potable and recycled water to the City. Potable water includes imported water from the Metropolitan Water District of Southern California (MWD) and groundwater from production wells within the City. MWD imports water from both the State Water Project and the Colorado River Aqueduct. Groundwater is extracted within the City and is treated for volatile organic compounds (VOCs) at the Burbank Operable Unit. Recycled water is produced at the Burbank Water Reclamation Plant (BWRP).

The City's 2015 UWMP indicates that the City has adequate supplies for its service area through 2040. In 2015, the City's water supply included:

- 4,765 AF of potable MWD water
- 10,277 AF of groundwater
- 7,350 AF of untreated MWD water for recharge or exchange, and
- 2,463 AF of recycled water for irrigation and industrial uses.

Table 12 lists annual groundwater, recycled water, and potable MWD water use between2008 and 2017.

Calendar Year	Groundwater Production	Recycled Water	MWD	Total
2008	6,999	2,032	14,879	23,909
2009	10,202	2,087	9,554	21,843
2010	9,917	2,016	7,852	19,785
2011	10,138	1,572	7,715	19,425
2012	10,462	1,903	8,325	20,690
2013	11,191	1,859	7,984	21,033
2014	9,511	2,394	8,915	20,820
2015	10,277	2,463	4,766	17,505
2016	9,612	2,974	5,006	17,592
2017	9,521	3,230	6,114	18,864
Average	9,783	2,253	8,111	20,147

Table 12. City of Burbank 2008 to 2017 Water Supply (AFY)

From BWP (Lee, 2018)

Water uses totals do not include the groundwater recharge components listed in Table 9

 Table 13 lists current (2015) and projected supplies to 2040.

Mator Supply Source	Current	Projected					
water Supply Source	2015	2020	2025	2030	2035	2040	
MWD Potable Supply	4,765	7,894	7,383	7,011	6,493	6,303	
Groundwater-Supplier Produced	10,277	11,000	11,000	11,000	11,000	11,000	
Potable Total	15,042	18,894	18,383	18,011	17,493	17,303	
MWD Replenishment	7,350	6,300	4,700	4,800	4,900	4,900	
Recycled Water	2,463	3,327	5,047	5,047	5,047	5,047	
Non-Potable Total	9,813	9,627	9,747	9,847	9,947	9,947	
TOTAL	24,855	28,521	28,130	27,858	27,440	27,250	

Table 13. City of Burbank Current and Projected Supply (AFY)

From 2015 UWMP Table 4-2 (BWP, 2016)

By 2040, the City anticipates the following water supply portfolio, for a total supply of 27,250 AFY in a normal year:

- 6,303 AF of potable MWD water
- 11,000 AF of groundwater
- 4,900 AF of untreated MWD water for recharge or exchange, and
- 5,047 AF of recycled water for irrigation and industrial uses.

Note that this supply reflects the amount of water used to meet demands (see **Table 10**), not the total supply available to the City in a given year. Groundwater is pumped from the San Fernando Basin, which is an adjudicated basin. The City can increase its available groundwater supply by importing and recharging water and can accumulate groundwater credits for later use. The City's imported, groundwater, and recycled water supply sources are discussed in the sections below.

4.1. IMPORTED WATER

BWP imports potable and untreated water from MWD. MWD water supply includes Colorado River water and State Water Project (SWP) water (BWP, 2016). Potable water is used for blending with groundwater and untreated water is used to increase the City's groundwater pumping rights. In 2017, Burbank obtained approximately 32 percent of its potable water from MWD. Between 2008 and 2017, potable MWD water use ranged between about 4,800 AFY (2015) and 14,900 AFY (2008). Groundwater treatment facilities built in the mid-1990s allow the City to use more groundwater, reducing its demand for treated MWD water.

4.2. GROUNDWATER

As indicated in **Tables 12** and **13**, groundwater is and will continue to be a major source of water for the City of Burbank. Groundwater is pumped from the San Fernando Valley Groundwater Basin (Basin), designated by the Department of Water Resources (DWR) as groundwater basin number 4-12 (DWR, 2003). The Basin underlies the San Fernando Valley and has been adjudicated since 1979. Groundwater pumped in Burbank is treated at the Burbank Operable Unit (BOU) for VOCs. The BOU is operated by the City of Burbank after it took over operation from Lockheed Martin in 2001. Based on the 2015 UWMP, BWP has eight production wells. As shown in **Table 12**, groundwater extraction ranged between 6,999 to 11,191 AFY over the last ten years (2008 to 2017).

The Basin was adjudicated in 1979 and the courts gave the City of Los Angeles, under its Pueblo Water Right, an exclusive right to extract and use the entire Basin's native safe yield of 43,660 AFY (ULARA Watermaster, 2017). The adjudication entitles the City of Burbank to an Import Return Credit (IRC) of 20 percent of all imported and recycled water used in Burbank. The IRC is calculated every year by the ULARA Watermaster. Burbank has the right to pump additional groundwater if it imports water for recharge; it can also purchase groundwater credits from the City of Los Angeles.

With a surface area of 226 square miles, the Basin is bounded on the north and northwest by the Santa Susana Mountains, on the north and northeast by the San Gabriel Mountains, on the east by the San Rafael Hills, on the south by the Santa Monica Mountains and Chalk Hills, and on the west by the Simi Hills. The valley is drained by the Los Angeles River and its tributaries. Groundwater in the basin is primarily unconfined.

The water bearing deposits include the lower Pleistocene Saugus Formation and the alluvium of Pleistocene and Holocene age. The Saugus Formation is composed of continental and shallow marine deposits and reaches a maximum thickness of 6,400 feet in the center of the Basin. The Holocene age alluvium is composed of coarse-grained gravel and sand and reaches a thickness of approximately 900 feet near Burbank. The Pleistocene age alluvium is dominated by unconsolidated coarse-grained deposits. Groundwater flows generally towards the center of the Basin and then beneath the Los Angeles River Narrows into the Central Subbasin of the Coastal Plain of Los Angeles Basin. Water levels have been relatively stable because the Basin has been adjudicated and pumping is managed.

4.3. RECYCLED WATER

Wastewater is treated at the Burbank Water Reclamation Plant (BWRP). The BWRP can produce up to 10,000 AFY of disinfected tertiary effluent for reuse. As presented in **Tables 10** and **14**, the City used 2,463 AFY in 2015 and its use is projected to more than double by 2025, to 5,047 AFY. Currently, recycled water is used for irrigation, power production, and evaporative cooling. As shown in **Table 14**, approximately 28 percent of the produced recycled water was used in 2015 and the remaining was discharged to the Burbank Western Channel which flows to the Los Angeles River. By 2025, it is projected that half of the recycled water produced will be used (BWP, 2016). Additional future uses could include

exchange with the City of Los Angeles for groundwater credits. LADWP may use the recycled water for groundwater replenishment and indirect potable reuse (BWP, 2016).

	2015	2020	2025	2030	2035	2040
Recycled Water Produced	8,786	10,000	10,000	10,000	10,000	10,000
Recycled Water Use	2,463	3,327	5,047	5,047	5,047	5,047
Recycled Water Discharged	6,323	6,673	4,953	4,953	4,953	4,953

Table 14. Recycled Water Use (AFY)

From 2015 UWMP Table 5-1 (BWP, 2016)

5. COMPARISON OF SUPPLY AND DEMAND

To determine water supply sufficiency, water supply assessments must include a comparison of supply and demand during normal, single dry and multiple dry years during a 20-year projection. Based on the City's 2015 UWMP, **Table 15** summarizes water supply and demand for the City in a normal year, while **Tables 16** and **17** show supply and demand in single-year and multi-year dry conditions. On an annual basis, the City has been able to provide sufficient supplies to meet demand during normal, single-dry, and multiple-dry year periods. Note that the supply totals represented in these tables is the supply that will be used to meet 2015 UWMP projected demands.

	2020	2025	2030	2035	2040
Supply Totals	28,521	28,130	27,858	27,440	27,250
Demand Totals	28,521	28,130	27,858	27,440	27,250
Difference	0	0	0	0	0

 Table 15.
 Normal Year Supply and Demand Comparison (AFY)

From 2015 UWMP Table 6-3 (BWP, 2016)

Table 16. Single Dry Year Supply and Demand Comparison (AFY)

	2020	2025	2030	2035	2040
Supply Totals	28,473	28,082	27,811	27,394	27,204
Demand Totals	28,473	28,082	27,811	27,394	27,204
Difference	0	0	0	0	0

From 2015 UWMP Table 6-4 (BWP, 2016)

|--|

	2020	2025	2030	2035	2040
Supply Totals	28,448	28,470	28,183	27,741	27,531
Demand Totals	28,448	28,470	28,183	27,741	27,531
Difference	0	0	0	0	0

From 2015 UWMP Table 6-5 (BWP, 2016)

Review of **Tables 15, 16,** and **17** shows that water supply and associated demand will remain similar in normal and drought periods. These projections are based on MWD supply projections during water shortage periods, growth in demand, local investments and changes in supply conditions, recycled water availability, and water conservation programs. **Burbank Town Center WSA City of Burbank** 17 TODD GROUNDWATER The increase of Project site water demands, 318 AFY for Option A or 298 AFY for Option B (**Tables 4** and **5**), are within the UWMP projections and thus considered to be included in the UWMP. Given that MWD expects to meet demands, and groundwater and recycled water are available in dry years, the City can expect to meet future demands for both single and multiple dry years through 2040 (BWP, 2016).

6. CONCLUSIONS

The findings of this WSA are summarized below.

- The Burbank Town Center Project will be built on a 37.29 acre site. Approximately 280,000 sf of existing structures will be demolished to support development of apartments, condominium residences, a hotel, offices, retail shopping, restaurants, and a community event space.
- The Project includes 1,163 dwelling units and 162,761 sf of new uses under Option A or 908 dwelling units and 265,761 sf of new uses under Option B.
- BWP will supply the Project with potable and recycled water.
- Current site water usage averages 122 AFY (2014-2017).
- Once completed, the Project Option A will use an estimated 318 AFY of water resulting in a net increase of water use of 196 AFY. Option B will use an estimated 298 AFY of water resulting in a net increase of water use of 176 AFY.
- Water supply needed to serve the Project's water demand (net increase of 176 or 196 AFY) can be considered as included in the 2015 UWMP projections.
- An additional future water demand of approximately 530 AFY is associated with seven other major projects in various stages of planning in the City. These demands are also considered as included in the 2015 UWMP projections.

In conclusion:

The City has adequate supply to provide a reliable long-term water supply for the Project in addition to seven other major planning-stage projects under normal and drought conditions based on the City's 2015 UWMP projections.

7. **REFERENCES**

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Figures



PLANNING AREAS



EXISTING USES

AREA 1 - OFFICE DEPOT SITE
AREA 2 - CORNER BAKERY SITE
AREA 3 - IN-N-OUT SITE
AREA 4 - IKEA SITE
AREA 5 - CHEVY'S & CPK
AREA 6 - SHOPPING MALL
AREA 7 - ASHLEY FURNITURE SITE
AREA 8 - N. SAN FERNANDO BLVD.

	December 2018	Figure 2
From: Burbank Town Center Community Presentation (City of Burbank, 2017)	TODD GROUNDWATER	Burbank Town Center Planning Areas and Existing Uses

