

# DEXTER WILSON ENGINEERING, INC.

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# WATER SUPPLY ASSESSMENT FOR THE PALOMAR HEIGHTS PROJECT

February 20, 2020

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Prepared for:

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#### REFERENCES AND WORKS CITED

Atkins. (April 2012). City of Escondido, Escondido General Plan Update, Downtown Specific Plan Update, and Climate Action Plan Environmental Impact Report.

City of Escondido. (August 2013). Escondido Downtown Specific Plan.

City of Escondido. (August 2013). Board Resolution 2013-85.

City of Escondido. (June 2016). 2015 Urban Water Management Plan. Retrieved from https://www.escondido.org/urban-water-management-plans.aspx

San Diego County Water Authority. (June 2016). Final 2015 Urban Water Management Plan. Retrieved from http://www.sdcwa.org/sites/default/files/files/water-management/water\_resources /2015%20UWMP%20Final%2006222016.pdf

Dexter Wilson Engineering, Inc. (February 20, 2020). Water Study for the Palomar Heights Project in the City of Escondido.

#### ATTACHMENT

ATTACHMENT A DOWNTOWN DISTRICT FIGURE

#### **ABBREVIATIONS**

ac, acre
af, acre feet
afy, acre-feet per year
edu, equivalent dwelling unit
gpcd, gallons per capita per day
gpd, gallons per day
gpm, gallons per minute
mgd, million gallons per day

#### **PURPOSE**

On January 1, 2002, Senate Bill 610 (SB 610) and Senate Bill 221 (SB 221) took effect. The intent of SB 610 and SB 221 was to improve the link between information on water supply availability and certain land-use decisions made by cities and counties.

#### SB221 - Water Supply Verification

Under SB 221, approval by a city or county of certain residential subdivisions requires an affirmative written verification of sufficient water supply or Water Supply Verification (WSV). SB 221 is intended as a mechanism to ensure that collaboration occurs between land use agencies, water purveyors, and land development to demonstrate that adequate water supplies will be available to serve new large subdivisions before construction begins.

To comply with SB211, the City will place a condition on the project's tentative map to the effect of, "Prior to recordation of a final map, a "written verification" and supporting documents from the City Utilities Department indicating the availability of a "sufficient water supply" as required by section 66473.7 of the Subdivision Map Act (SB 221) shall be provided to the satisfaction of City Community Development Department." Thus, the verification will be completed at a future date prior to recordation of the final map.

#### SB610 - Water Supply Assessment

SB 610, which has been codified in the Water Code beginning at Section 10910, requires the preparation of a Water Supply Assessment (WSA) for projects within cities and counties that propose to construct 500 or more residential units. In addition, under SB 610, the assessment must be furnished to cities and counties for inclusion in any environmental documentation for projects subject to the California Environmental Quality Act (CEQA). The Palomar Heights project is proposing to build 510 dwelling units and other facilities. A more detailed description of the project is provided in Chapter 3.

At this phase of the project, the City Community Development Department requested that the Water Division of the City Utilities Department prepare this Water Supply Assessment (WSA) as required by SB610 as part of the project approval process for the Palomar Heights Project (which is proposing to build 510 multi-family residential units and 12,000 square feet of commercial space). This WSA will be approved by City Council as a supporting document to the CEQA documentation being prepared for the project.

This WSA evaluates water supplies that are or will be available during normal, single-dry year, and multiple-dry water years during a 20-year projection to meet existing demands, existing plus projected demands of the proposed project, and future water demands served by the City. A foundational document for the assessment is the Urban Water Management Plan (UWMP) for the City of Escondido (City) which is titled, "2015 Urban Water Management Plan." It was prepared by RMC, is dated June 2016, and is referred to throughout this report as the City 2015 UWMP.

#### **FINDINGS**

The Palomar Heights project is within the limits of the City of Escondido and its water service area. In addition, it is within the San Diego County Water Authority (SDCWA) and the Metropolitan Water District (MWD) service areas.

All water demand will be met with potable water as recycled water is not available in the project vicinity.

The project site has had a historical annual average water demand of 117 acre-feet per year (afy) or 104,708 gallons per day (gpd).

This WSA Report finds that the estimated annual water demand of the Palomar Heights project is 188 afy or 167,774 gpd; a net increase of 71 afy or 63,066 gpd above the historical annual average.

This WSA Report finds that development of the Palomar Heights project is within the scope and scale of projects included in the City's Downtown Specific Plan Area.

This WSA Report finds that the Palomar Heights project's water demand (net increase demand above historical demand, as well as total estimated demand) is included in the City 2015 UWMP, dated June 2016, as the Palomar Heights project is within the scope and scale of projects included in the City's Downtown Specific Plan Area.

This WSA Report finds that the Palomar Heights project's water demand is included in the San Diego County Water Authority's Final 2015 Urban Water Management Plan dated June 2016 (SDCWA 2015 UWMP).

This WSA Report finds that the water supplies necessary to serve the demands of the proposed project, along with existing and other projected future users, as well as the actions necessary to develop these supplies, have been identified in the City 2015 UWMP.

This WSA Report demonstrates that with development of the resources and programs identified, there will be sufficient water supplies over a 20-year planning horizon to meet the projected demand of the proposed project and the existing and other planned development projects within the City service area during normal, single-dry, and multiple-dry water years.

The following chapters present the support for these findings.

#### PROJECT DESCRIPTION

The Palomar Heights project is south of E. Valley Parkway, north of E. Grand Avenue, and west of N. Fig Street. The site was formerly the location of the Palomar Medical Center.

The proposed project land use will consist of a total of 510 multi-family residential dwelling units including 258 apartments, 162 townhomes, and 90 senior living apartments, 12,000 square feet of commercial space, and 4.71 acres of landscaped area. The commercial space is divided into a 2,000 square foot retail space, a 3,000 square foot office space, a 2,000 square foot café, and a 3,000 square foot bar/restaurant, and a 2,000 square foot gym for residents. A summary of the proposed land uses is provided in Table 3-1.

TABLE 3-1 LAND USE SUMMARY					
Land Use	Units	Net Area, ac			
Multi-family Residential	510 units	5.3			
Commercial	12,000 sf	0.16			
Landscaped Area		4.71			
Private Drive and Parking		3.6			
TOTAL		13.8			

Source: Water Study for the Palomar Heights Project dated February 20, 2020 by Dexter Wilson Engineering, Inc.

#### PROJECT WATER DEMANDS

The Palomar Heights project will utilize potable water as recycled water is not available in the project vicinity at this time. Water demands were developed in accordance with the City of Escondido Design Standards. Multi-family residential water demand is estimated based on a unit water demand of 300 gpd/DU. The commercial area water demand is estimated using a unit water demand of 2,300 gpd/acre. The landscaped area water demand is estimated using a unit water demand of 3,000 gpd/acre. The total water demands for the Palomar Heights project are summarized in Table 3-2.

TABLE 3-2 PROJECTED WATER DEMANDS							
Development Type	Net Area, ac	Dwelling Units	Water Demand	Average Water Demand, gpd			
Multi-family Residential	5.3	510	300 gpd/EDU	153,000			
Landscaped Area	4.71	•	3,000 gpd/acre	14,130			
Commercial	0.28	•	2,300 gpd/acre	644			
Private Drive and Parking	3.6	•	(i)				
TOTAL	13.9	510		167,774 (117 gpm)			

Source: Water Study for the Palomar Heights Project dated February 20, 2020 by Dexter Wilson Engineering, Inc.

#### HISTORICAL WATER DEMANDS

The site for the Palomar Heights project was formerly the Palomar Medical Center and therefore the site has a historical water demand. The Palomar Heights project also includes the property at 624 E. Grand Avenue which was not a part of the hospital site. The City analyzed the historical usage of the existing Palomar Medical Center meters and equated the previous demand of the hospital to 348.54 multi-family dwelling units. With the addition of the property at 624 E. Grand Avenue, the total historical demand of the site equates to 349.03 multi-family dwelling units. At 300 gpd/DU for multi-family units the average daily demand of the site was 104,708 gpd or 72.71 gpm.

#### NET INCREASE OVER HISTORICAL DEMANDS

In comparison to the historical average daily demand, the increased demand anticipated from the project is 63,066 gpd or 44 gpm. At 300 gpd/DU this increase in demand is equivalent to 210.22 multi-family units. This calculation in summarized in Table 3-3 below.

TABLE 3-3 NET WATER DEMAND INCREASE						
Use	Water Demand, gpd	Equivalent Units *				
Historical	104,708	349.03				
Projected	167,774	559.25				
Net Increase	63,066	210.22				

<sup>\*</sup> Equivalency based on 300 gpd per multi-family unit.

#### DOWNTOWN SPECIFIC PLAN

On August 7, 2013, the City of Escondido adopted a comprehensive update to the Downtown Specific Plan (2013 Downtown Specific Plan Update) to provide "a comprehensive plan for land use, development regulations, development incentives, design guidelines, pedestrian and mobility improvements, and other related actions aimed at implementing the strategic goals for Downtown Escondido as set forth in the General Plan Goals and Policies." The Downtown Specific Plan Area encompasses approximately 500 acres and is divided into seven districts. The Palomar Heights project is within the Historic Downtown District as shown on the markup of the Downtown Specific Plan Area Figure II-1 in Attachment A.

The 2013 Downtown Specific Plan Update identifies an overall cap to the number of new housing units. Development of the Palomar Heights project is within the scope and scale of projects included in the City's Downtown Specific Plan Area. Moreover, the Draft EIR for the Palomar Heights project contains the list of cumulative projects (prior and pending) within the Downtown Specific Plan and within the cap.

Adoption of the 2013 Downtown Specific Plan Update (City Council Resolution 2013-85) also included recertification of the previously adopted April 23, 2012 Escondido General Plan Update, Downtown Specific Plan Update, and Climate Action Plan Environmental Impact

*Report.* This same EIR also covered the City's 2012 General Plan Update (adopted by City Council Resolution 2012-52) and Climate Action Plan (adopted by City Council Resolution 2013-153).

#### RELEVANT URBAN WATER MANAGEMENT PLANS

The Palomar Heights project is within the Downtown Specific Plan area of the City and the service areas of the City of Escondido, the San Diego County Water Authority (SDCWA) and the Metropolitan Water District (MWD). The following sections describe the planning documented in each agency's UWMP.

#### City of Escondido 2015 UWMP

On June 15, 2016, the City 2015 UWMP was presented to the City Council, and subsequently approved and adopted by Resolution No. 2016-90.

The City 2015 UWMP relies on the San Diego Association of Governments (SANDAG) Series 13 Growth Forecast model, "...which incorporates projected land uses as well as local and regional planning documents...to estimate populations" (City 2015 UWMP, page 2-4).

The City's General Plan and Downtown Specific Plan, which are incorporated into the City 2015 UWMP as foundational land planning documents for the City, contemplate growth and redevelopment within the Downtown Specific Plan Area. The size and scope of the Palomar Heights project falls within that projected growth of the Downtown Specific Plan Area. As such, the water demand anticipated by the Palomar Heights project is included in the City 2015 UWMP.

City planning staff closely track growth within the Downtown Specific Plan Area.

Within the City 2015 UWMP, the document presents a comparison of projected water supplies to water demands during normal, single-dry, and multiple-dry water years. This comparison is described in greater detail in Chapters 4 through 6.

## SDCWA 2015 UWMP

On June 23, 2016, the SDCWA Board of Directors adopted Resolution No. 2016-11, approving the SDCWA 2015 UWMP.

Within the SDCWA 2015 UWMP, the document presents a comparison of projected water supplies to water demands during normal, single-dry, and multiple-dry water years. The SDCWA 2015 UWMP also relies on the SANDAG Series 13 Growth Forecasts and coordination with member agencies to develop demands for its water service area (which includes the City's water service area as a member agency).

#### CITY WATER DEMANDS

The City's water service area covers approximately 20,000 acres (which does not align with the City's incorporated boundary). Water use types in the City water service area include Residential, Commercial/Industrial/Institutional (CII), Agricultural, and Irrigation. Additionally, the City provides water to select customers in the neighboring Rincon del Diablo Municipal Water District. Finally, City water demands consider water losses.

#### **Historic and Current Potable Water Demand**

Tables 4-1 and 4-2 present the City's historic water service area population and demand, respectively, as presented in the City 2015 UWMP. This information formed the basis for determining the City's Interim and Confirmed Target Gallon Per Capita Per Day (GPCD) SBX7-7 conservation projections which are summarized in Table 4-3. The Interim 2015 GPCD Target was determined to be 204 GPCD and the Confirmed 2020 GPCD Target was determined to be 182 GPCD. Table 4-4 presents the actual population numbers and potable water demands since development of the City 2015 UWMP.

TABLE 4-1 1995-2010 CITY OF ESCONDIDO WATER SERVICE AREA POPULATION				
Year	Population			
1995	108,884			
1996	110,879			
1997	112,911			
1998	114,980			
1999	117,087			
2000	117,654			
2001	120,432			
2002	121,433			
2003	123,025			
2004	125,135			

#### **TABLE 4-1** 1995-2010 CITY OF ESCONDIDO WATER SERVICE AREA POPULATION Population Year 2005 125,647 2006 126,451 2007 128,203 2008 128,7682009 129,035 2010 129,350

Source: City 2015 UWMP

TABLE 4-2 10-YEAR BASELINE				
ross Potable ater Use, af	GPCD			
28,752	219			
31,489	239			
30,417	225			
33,304	245			
31,387	228			
35,171	251			
29,503	210			
31,495	222			
32,578	227			
29,339	203			
)	29,339			

Source: City 2015 UWMP

GPCD, Gallon per Capita per Day

# TABLE 4-3 POTABLE BASELINES AND TARGETS SUMMARY

Baseline Period	Start Year	End Year	Average Baseline, GPCD	2015 Interim Target, GPCD	Confirmed 2020 Target, GPCD
10 Year	1999	2008	227	204	182

Source: City 2015 UWMP

GPCD, Gallon per Capita per Day

TABLE 4-4 POPULATION AND POTABLE WATER DEMANDS SINCE DEVELOPMENT OF THE CITY 2015 UWMF					
Fiscal Year	Population	Demand, af			
2015	137,941	21,879			
2016	139,888	18,962			
2017	140,251	18,917			

141,471

Not Available

21,791

19,824

Source: City Staff, February 13, 2020.

2018

2019

## **Projected Potable Water Demand**

The City 2015 UWMP calculated projected water demands based on land use projection data from SANDAG's Series 13 Growth Forecast for most of the land use categories. To develop the projections, water use factors were established for each land use type using data from 2012. This year was selected because acreage data was available from SANDAG and water use was near average levels. Additionally, in using the "...water use from the year 2012, the demand projections take into account active and passive conservation measures that were being implemented in that year, and assume that conservation would remain relatively constant through 2040 in normal hydrologic years" (City 2015 UWMP, Page 3-5). For agricultural water use, sales to Rincon customers, and accounting for water loss, other more appropriate methodologies were used which are detailed in Section 3 of the City 2015 UWMP.

Table 4-5 summarizes the resulting projected potable water demands through 2040. These potable demands include the Downtown Specific Plan, of which the Palomar Heights project is a part.

TABLE 4-5 PROJECTED POTABLE WATER DEMANDS							
Year	2020	2025	2030	2035	2040		
Projected Potable Water Demand, af	21,903	21,769	21,440	21,699	21,928		

Source: Table 3-6, City 2015 UWMP.

# Current and Projected Recycled Water Demand

The City projected recycled water demands are provided in Table 4-6 as provided in the City 2015 UWMP. Table 4-7 presents the actual recycled water demands since development of the City 2015 UWMP.

TABLE 4-6 PROJECTED RECYCLED WATER DEMANDS							
Year	2015	2020	2025	2030	2035	2040	
Projected Recycled Water Demand, af	576	3,000	3,650	4,400	4,400	4,400	

Source: Table 5-4, City 2015 UWMP.

TABLE 4-7 ACTUAL RECYCLED WATER DEMANDS						
Year	2015	2016	2017	2018	2019	
Actual Recycled Water Demand, af	3,715	3,254	3,121	3,317	2,270	

Source: City Staff, February 11, 2020.

# **Combined Projected Water Demands**

Combined, the projected potable and recycled demands during a normal water year are shown in Table 4-8. These demands include water conservation as discussed in detail in Chapter 3 of the City UWMP. For comparison, actual water demands are provided in Table 4-9.

TABLE 4-8 PROJECTED NORMAL YEAR WATER DEMANDS							
Year	2020	2025	2030	2035	2040		
Projected Demand, af	24,903	25,419	25,840	26,099	26,328		

Source: Table 6-2, City 2015 UWMP.

TABLE 4-9 ACTUAL, TOTAL WATER DEMANDS							
Year	2015	2016	2017	2018	2019		
Actual Water Demand, af	25,594	22,216	22,038	25,108	22,094		

Potable plus recycled water demands.

Source: Table 4-4 and 4-7

Single-dry year and multiple-dry year demand estimates are provided in Table 4-10 and Table 4-11, respectively.

TABLE 4-10 PROJECTED SINGLE-DRY YEAR WATER DEMANDS							
				TARREST TO STATE OF			
Year	2020	2025	2030	2035	2040		

Source: Table 6-3, City 2015 UWMP.

# TABLE 4-11 PROJECTED MULTIPLE-DRY YEAR WATER DEMANDS

Year	2020	2025	2030	2035	2040
First Dry Year Demand, af	26,647	27,199	27,649	27,926	28,171
Second Dry Year Demand, af	27,642	28,215	28,682	28,970	29,224
Third Dry Year Demand, af	24,473	25,445	26,435	26,621	26,790

Source: Table 6-4, City 2015 UWMP.

#### EXISTING AND PROJECTED SUPPLIES

# **Existing Water Supplies**

The City presently purchases the majority of its water from SDCWA, which in large part is imported to the San Diego region by SDCWA and MWD. Sources include a percentage of local surface water. Additionally, the City owns and operates the Hale Avenue Resource Recovery Facility (HARRF) which is permitted to produce 9.0 mgd of tertiary treated recycled water for landscape and industrial use. Table 5-1 summaries the City supplies in 2015. No significant changes have been made in the City's actual water supplies since preparation of the City 2015 UWMP.

TABLE 5-1 WATER SUPPLIES – ACTUAL (2015)					
Water Supply	Actual Volume, af	Water Quality			
Purchased or Imported Water	21,253	Drinking Water			
Surface Water	626	Drinking Water			
Recycled Water	576	Recycled Water			
TOTAL	22,455				

Source: Table 5-8, City 2015 UWMP

# **Future Water Supplies**

Projections of supply for future, normal, water year conditions are presented in Table 5-2. Each of the supply sources are discussed further below.

TABLE 5-2						
WATER SUPPLIES - PROJECTED						

0 1	Projected Water Supply, af							
Supply	2020	2025	2030	2035	2040			
Purchased or Imported Water	14,643	14,509	10,180	9,439	9,668			
Surface Water	7,260	7,260	7,260	7,260	7,260			
Recycled Water	3,000	3,650	4,400	4,400	4,400			
Potable Reuse	0	0	4,000	5,000	5,000			
TOTAL	24,903	25,419	25,840	26,099	26,328			

Source: Table 5-9, City 2015 UWMP

## **Purchased or Imported Water**

Historically, the City purchases approximately 80% of its water from SDCWA, which is largely imported to the region by SDCWA and MWD. As one of SDCWA's 24 member agencies, the City is entitled to directly purchase water from SDCWA on a wholesale basis. The City also looks to SDCWA to ensure, to the best of its ability, that adequate amounts of water will be available for purchase to satisfy future potable water requirements. SDCWA discusses its water supplies and management programs in detail in the SDCWA 2015 UWMP.

#### **Surface Water**

As described in the City 2015 UWMP Section 5.1.2, the City is entitled to all local water in Lake Dixon, a portion of the water from Lake Henshaw, and all of the water derived from runoff in Lake Wohlford. Local surface water is delivered to the City via the Escondido Canal, the Bear Valley Hydroelectric plant, and associated pipelines to be treated at the Escondido-Vista Water Treatment Plant along with water from all other sources. Local surface water accounts for approximately 20% of the City's average water demand. However, the amount of available local water varies year to year with hydrologic patterns; in wet years, local surface water can provide up to 30% of the City's total supplies. Long-term projections of normal water year surface water supply of 7,260 af are based on the 25-year average.

# **Recycled Water**

The City began delivering recycled water in 2004. Recycled water is used for irrigation at local golf courses, schools, parks, median strips, shopping areas, HOA common areas, and industrial parks. Recycled water master planning has demonstrated that there is sufficient demand for all the tertiary water that can be produced from the Hale Avenue Resources Recovery Facility (HARRF), which is planned to expand to meet demands. Use of the recycled water within the service area will help offset the need for additional potable water supplies. The City is actively promoting its planned recycled water use expansion. Specific methods the City is using to encourage the expansion are provided in Table 5-3.

TABLE 5-3 METHODS TO EXPAND FUTURE RECYCLED WATER USE						
Name of Action	Planned Implementation Year	Expected Increase in Recycled Water Use, af				
Financial Incentives	Ongoing	2,200				
Assist with Onsite Retrofits	Ongoing	550				
Provide Ongoing Technical Assistance to Recycled Water Customers at No Charge	Ongoing	550				
Ensure Recycled Water Supply Reliability Even During Shortages and Planned Outages (Excluding Disaster Conditions)	Ongoing	550				
Continue Proactive Public Education Campaign Regarding Safety and Reliability of Recycled Water	Ongoing	550				
	Total	4,400				

Source: Table 5-6, City 2015 UWMP

#### **Potable Reuse**

The City recently completed a Feasibility Study for its Potable Reuse Program to outline a path to deliver treated wastewater via indirect potable reuse and/or direct potable reuse. The City is working closely with SDCWA, the San Diego Regional Water Quality Control Board, the State Water Resources Control Board, and the County Department of Health Services to develop the potable reuse program. The City intends to pursue potable reuse as a future water supply.

#### AVAILABILITY OF SUFFICIENT SUPPLIES

# Purchased or Imported Water

Historically, the City purchases approximately 80% of its water from SDCWA, which is largely imported to the region by SDCWA and MWD. As one of SDCWA's 24 member agencies, the City is entitled to directly purchase water from SDCWA on a wholesale basis. The City also looks to SDCWA to ensure, to the best of its ability, that adequate amounts of water will be available for purchase to satisfy future portable water requirements. SDCWA discusses its water supplies and management programs in detail in the SDCWA 2015 UWMP. In particular, SDCWA has been working with its member agencies to diversify its water supply with alternative sources to increase supply reliability, which lessens the impact of decline in availability in any one particular supply source. The figure below highlights SDCWA's continued diversification goals.

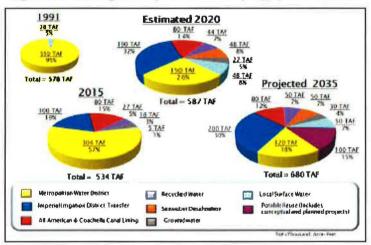


Figure 5-1: San Diego County Water Authority Supply Diversification

### Local Supply Reliability

The City's local supplies include local surface water and recycled water. Local surface water supplies are impacted by seasonal and climate changes. With above average precipitation,

local surface water can provide the City with approximately 30% of its total supplies. Under a multiple-dry year scenario, surface water storage can decrease, which places a constraint on local supplies. The availability of surface water in future supply projections is based on a 25 year historical average. Recycled water supplies are anticipated to remain constant. The City's future implementation of potable reuse will further insure water supply reliability.

#### **DEMONSTRATION OF SUFFICIENT SUPPLIES**

Tables 6-1 through 6-3 are the results of the City's water supply reliability analysis in the City 2015 UWMP, comparing projected demands and supplies in normal, single-dry, and multiple-dry water years.

In normal water years and single-dry water years, sufficient supplies will be available to meet demands.

For the multiple-dry year scenario, in the first two years, supplies are anticipated to meet demands. For the third year in the multiple-dry year scenario, demands are anticipated to increase at a greater rate than regional local supply development, which may lead to a shortage in purchased water availability from the SDCWA. The potential shortage would be approximately 9% according to the SDCWA 2015 UWMP. The City 2015 UWMP (and SDCWA 2015 UWMP) assumes the shortfall would be met by implementing local conservation measures such that the third-year demands would equal the available supply. As such, the City anticipates sufficient water will be available during the multiple-dry year scenario.

The City's voluntary and mandatory water use restrictions are detailed in Chapter 7 of the City 2015 UWMP, which describes the City's Water Shortage Contingency Plan and Water Conservation Plan. For example, as a result of the 2014 state-wide drought, the City water service area met its March 1, 2016 state-mandated conservation standard of 12%.

#### TABLE 6-1 NORMAL YEAR SUPPLY AND DEMAND COMPARISON 2020 2025 2030 2035 2040 Purchased Water 14,643 14,509 10,180 9,439 9,668 Surface Water 7,260 7,260 7,260 7,260 7,260 Recycled Water 3,000 3,650 4,400 4,400 4,400 Potable Reuse 0 0 4,000 5,000 5,000 Supply Total (AF) 24,903 25,419 25,840 26,099 26,328 Demand Total (AF) 24,903 25,419 25,840 26,099 26,328 Difference 0 0 0 0

Source: Table 6-2, City 2015 UWMP

TABLE 6-2 SINGLE-DRY YEAR SUPPLY AND DEMAND COMPARISON							
	2020	2025	2030	2035	2040		
Purchased Water	23,273	23,186	18,894	18,177	18,426		
Surface Water	871	871	871	871	871		
Recycled Water	3,000	3,650	4,400	4,400	4,400		
Potable Reuse	0	0	4,000	5,000	5,000		
Supply Total (AF)	27,144	27,707	28,165	28,448	28,697		
Demand Total (AF)	27,144	27,707	28,165	28,448	28,697		
Difference	0	0	0	0	0		

Source: Table 6-3, City 2015 UWMP

TABLE 6-3 MULTIPLE-DRY YEAR SUPPLY AND DEMAND COMPARISON

		2020	2025	2030	2035	2040
	Purchased Water	21,759	21,661	17,361	16,638	16,883
	Surface Water	1,888	1,888	1,888	1,888	1,888
SHEET, THE	Recycled Water	3,000	3,650	4,400	4,400	4,400
First Year	Potable Reuse	0	0	4,000	5,000	5,000
Tear	Supply Total (AF)	26,647	27,199	27,649	27,926	28,171
	Demand Total (AF)	26,647	27,199	27,649	27,926	28,171
	Difference	0	0	0	16,638 1,888 4,400 5,000 27,926 27,926 0 18,118 1,452 4,400 5,000 28,970 0 16,640 581 4,400 5,000 26,621 2,633 26,621	0
	Purchased Water	23,190	23,113	18,830	18,118	18,372
	Surface Water	1,452	1,452	1,452	1,452	1,452
	Recycled Water	3,000	3,650	4,400	4,400	4,400
Second Year	Potable Reuse	0	0	4,000	5,000	5,000
Tear	Supply Total (AF)	27,642	28,215	28,682	28,970	29,224
	Demand Total (AF)	27,642	28,215	28,682	28,970	29,224
	Difference	0	0	0	0	0
	Purchased Water	20,892	21,214	17,454	16,640	16,809
	Surface Water	581	581	581	581	581
	Recycled Water	3,000	3,650	4,400	4,400	4,400
Third	Potable Reuse	0	0	4,000	5,000	5,000
Year	Supply Total (AF)	24,473	25,445	26,435	26,621	26,790
	Additional Conservation	2,420	2,516	2,614	2,633	2,650
	Demand Total (AF)	24,473	25,445	26,435	26,621	26,790
	Difference	0	0	0	0	0

Source: Table 6-4, City 2015 UWMP

# ATTACHMENT A

# DOWNTOWN DISTRICT FIGURE

