APPENDIX E – SUPPLY AND DEMAND

E.1 INTRODUCTION

This section of the San Luis Obispo IRWM Plan provides a discussion and analysis of the current and projected water supply and demand for the San Luis Obispo IRWMP planning region. This section is limited to descriptions of supply infrastructure and demand areas addressed in **Section 3 – Region Description**.

For in depth discussion and analysis of water supply and demand for a specific area, refer to the Urban Water Management Plan (UWMP) for a specific area. **Section 12 – Relation to Local Water Planning** includes a comprehensive list of these and other planning documents.

E.1.1 Intended Use of the Supply and Demand Appendix

It's important to highlight what this appendix is and what it is not. The Master Water Report (MWR, San Luis Obispo County, 2012) is the most recent *comprehensive* analysis of supply, demand, water budgets/balances and projection. This appendix relies heavily upon the MWR and is not a replacement for that analysis.

Looking ahead, the County of San Luis Obispo and the Flood Control and Water Conservation District intend to develop a comprehensive update to the supply and demand analysis and planning of the 2012 MWR. Once completed, this document will absolutely inform and be appended to this IRWM Plan.

E.2 REGIONAL SUPPLIES

Water is drawn from a number of supply sources, both inside and outside of the County. In-county reservoirs have a significant role in water supply, drainage and flood control, potential hydro-power, and recreation for the region. Groundwater basins, while currently threatened by contamination and over-pumping, are the largest source of in-county supply currently in use. As groundwater basins are relied upon for their Perennial yield of drinking water, imported surface water from the California State Water Project helps reduce the pressure on these basins when used conjunctively, based on availability of state water and facility capacity, over hydrologic wet and dry periods.

Below are brief summaries of the current supply sources either in use or being planned for near term implementation. By establishing what is known of water supplies currently, future forecasting of supply needs can be placed in context with the constraints and costs associated with each supply source.

E.2.1 Local Surface Water

Many of the local reservoirs are multi-purpose by providing flood control, water supply, groundwater recharge, environmental, hydropower, and recreation benefits. Dams and reservoirs were constructed as the need for supplemental water supplies and flood control became apparent with growing development in the region.

Table E-1: *Local Surface Water Supplies*

Surface Water Source (Year Built)	Storage Capacity (AF)	Contracted Amount/ Average Annual Yield in SLO IRWM Region (AFY)	Primary Purpose(s)	Owner / Operator (if different)	Sub-Region(s) Supplied
Nacimiento Reservoir (1957)	377,900	15,750[(1)]	Water supply, Flood Control, Groundwater Recharge	Monterey County Water Resources Agency	North Coast, South County, North County
Whale Rock Reservoir (1961)	40,662	40,660[(2)]	Water supply	Whale Rock Commission / City of San Luis Obispo	North Coast, South County
Lopez Lake (1968)	49,388	4,530	Water supply, Flood Control	SLOCFC&WCD	South County
San Margarita Lake/ Salinas Reservoir (1941)	23,843	6,950	Water supply	U.S. Army Corps of Engineers / SLOCFC&WCD	South County, North County
Chorro Reservoir (1941)	90	140	Water supply	CA Dept of Corrections[(3)]	North Coast
Twitchell Reservoir[(4)]	224,300	0	Irrigation, Groundwater Recharge, Flood Control	Santa Maria Valley Water Conservation District	South County

Notes:

1. 17,500 AFY total, less 1,750 AFY for lakeside users 15,750 AFY available to SLO Co Nacimiento Water Project.

2. 40,660 AFY of Whale Rock Reservoir water is allocated to the joint right-holders in addition to downstream water rights, which are accounted for separately.

3. Per CA Dam Safety website inventory.

4. Straddles SLO County with the Dam located in Santa Barbara County

E.2.2 State Water Supply

Section 3.9.6 provides some details about State Water in SLO County. **Table E-2** summarizes the 2019 contracted State Water supplies for the Region.

Table E-2: *State Water Allocations*

Turnout Location	Subcontractor	Water Service Amount (AFY)	Drought Buffer (AFY)	Total (AFY)
SHANDON	CSA 16 (Shandon)	100	0	100
	Subtotal	*100*	*0*	*100*
CHORRO VALLEY	City of Morro Bay	1,313	2,290	3,603
	CMC	400	400	800
	County Ops Center	425	425	850
	Cuesta College	200	200	400
	Subtotal	*2,338*	*3,315*	*5,653*
LOPEZ	City of Pismo Beach	1,240	1,240	2,480
	Oceano CSD	750	750	1,500
	San Miguelito MWC	275	275	550
	Avila Beach CSD	100	100	200
	Avila Valley MWC	20	20	40
	San Luis Coastal USD	7	7	14
	Subtotal	*2,392*	*2,392*	*4,784*
	Total Subcontracted*	**4,830**	**5,707**	**10,537**
			"Unsubscribed" Allocation (AFY)	**14,463**
			District's Total "Table A" Allocation (AFY)	**25,000**

E.2.3 Groundwater Supplies

Groundwater is a critical supply source in San Luis Obispo County. For the latest in-depth analysis of groundwater supplies across the County, refer to the Master Water Report. **Table E-3** summarizes known safe yields of groundwater basins in the region, color-coded by sub-region. For those basins under adjudication and developing GSPs, refer to www.slocounty.ca.gov/sgma for the latest information regarding basin conditions and management actions.

Table E-3: *Groundwater Basin Yields*

Groundwater Basin Name	Estimated Perennial Yield (AFY)	WPA	Groundwater Basin Name	Estimated Perennial Yield (AFY)	WPA
Arroyo de la Cruz Valley	1,244	1	Northern Cities Management Area	Under adjudication	3
Pico Creek Valley	120	1	Nipomo Mesa Management Area	Under adjudication	3
San Carpoforo Valley	No estimates of basin yield exist.	1	Santa Maria Valley Management Area	Under adjudication	3
San Simeon Valley	1,040	1	Huasna Valley	No estimates of basin yield exist.	4
Santa Rosa Valley	2,260	1	Cuyama Valley	Pending GSP	4
Villa Valley	1,000	1	Big Spring Area	No estimates of basin yield exist.	5
Cayucos Valley	600	2	Rafael Valley	No estimates of basin yield exist.	5
Old Valley	505	2	Pozo Valley	1,000	5
Toro Valley	532	2	Rinconada Valley	No estimates of basin yield exist.	5
Chorro Valley	2,210	2	Santa Margarita Valley	No estimates of basin yield exist.	5
Morro Valley	1,500	2	Cholame Valley	No estimates of basin yield exist.	5
Los Osos Valley	Under adjudication	2	Salinas Valley - Atascadero Area	Pending GSP	5
San Luis Valley	Pending GSP	3	Salinas Valley - Paso Robles Area	Pending GSP	5
Arroyo Grande Valley Sub-basin	Pending GSP	3	Carrizo Plain	8,000 - 11,000	6

E.3 Regional Demand

This section extends the Demand analysis performed within the Master Water Report (MWR, San Luis Obispo County, 2012). The MWR is a land-use based, comprehensive supply and demand analysis. The extension of these calculations extends the planning horizon of the demand to 2040.

E.3.1 WPA 1

WPA 1 consists of the urban communities of Cambria and San Simeon who are served by their respective CSD's. **Table E-4** presents both the 2015 and projected water usage for the two urban communities along with the rural and agricultural water usage of the WPA.

Table E-4: *WPA 1 Regional Demand*

Water Usage Type	Water Usage (AFY)		Projection Year	Water Purveyors	Source
	2015	Projected			
Urban	555	877	-		
Cambria	467	789	2040	Cambria CSD	UWMP
San Simeon	88	88	2050	San Simeon CSD	Water usage forms; SLOCOG projections
Rural	147	282	2040		2014 IRWM Plan (WPAs 1 & 2); Linear regression
Agricultural	908	1,234	2040		2014 IRWM Plan (WPAs 1 & 2); Linear regression

E.3.2 WPA 2

WPA 2 consists of the urban communities of Cayucos, Chorro Valley, Los Osos, and Morro Bay. **Table E-5** presents both the 2015 and projected water usage for the four urban communities along with the rural and agricultural water usage of the WPA.

Table E-5: *WPA 2 Regional Demand*

Water Usage Type	Water Usage (AFY)		Projection Year	Water Purveyors	Source
	2015	Projected			
Urban	3,783	4,928	-		
Cayucos	309	607	2045	Morro Rock MWC, Cayucos Beach MWC, CSA 10A	Water usage forms

Chorro Valley	1,440	1,447	2040	California Men's Colony, Camp SLO, Cuest College, County Op. Center	Cuesta College article; MWR
Los Osos	960	1,437	2040	Los Osos CSD, S&T MWC, GSWC	UWMP
Morro Bay	1,074	1,437	2050	City of Morro Bay	Water usage forms; SLOCOG projections
Rural	248	388	2040		2014 IRWM Plan (WPAs 3-5); Linear regression
Agricultural	4,675	6,257	2040		2014 IRWM Plan (WPAs 3-5); Linear regression

E.3.3 WPA 3

WPA 3 consists of the urban communities of Arroyo Grande, Avila, Cal Poly, Conoco Phillips Co., Edna Valley, Grover Beach, Nipomo, Oceano, Pismo Beach, San Luis Obispo, and Woodlands Village. **Table E-6** presents both the 2015 and projected water usage for the urban communities and rural and agricultural communities within the WPA.

Table E-6: *WPA 3 Regional Demand*

Water Usage Type	Water Usage (AFY)		Projection Year	Water Purveyors	Source
	2015	Projected			
Urban	16,720	22,991	-		
Arroyo Grande	2,106	3,239	2040	City of Arroyo Grande	UWMP; Linear regression
Avila	344	715	2045	Avila CSD, Avila Valley MWC, CSA 12, San Miguelito MWC, Port San Luis	Water usage forms
Cal Poly	974		2040	Cal Poly	https://afd.calpoly.edu/sustainability/campus_resources/water
Conoco Phillips Co.	1,100	1,100	2040	Conoco Phillips Co.	NMMA Annual Report
Edna Valley	198	269	2050	GSWC - Edna	Water usage forms; SLOCOG projections

Grover Beach	1,781	2,422	2040	City of Grover Beach	2010 UWMP; Linear regression
Nipomo	2,508	2,703	2050	Nipomo CSD, GSWC - Nipomo	Water usage forms; SLOCOG projections
Oceano	667	776	2050	Oceano CSD, Halcyon Water Co.	Water usage forms; SLOCOG projections
Pismo Beach	1,632	2,135	2040	City of Pismo Beach	UWMP; Linear regression
San Luis Obispo	4,722	8,294	2040	City of San Luis Obispo	UWMP; Linear regression
Woodlands Village	688	1,339	2050	Woodlands MWC	Water usage forms; SLOCOG projections
Rural	4,400	6,770	2040		2014 IRWM Plan (WPAs 6 & 7); Linear regression
Agricultural	43,891	18,637	2040		2014 IRWM Plan (WPAs 6 & 7); Linear regression

E.3.4 WPA 4

WPA 4 has no urban communities, the 2015 water usage numbers and future predictions consist of rural and agricultural water usage.

Table E-7: *WPA 4 Regional Demand*

Water Usage Type	Water Usage (AFY)		Projection Year	Source
	2015	Projected		
Rural	197	682	2040	2014 IRWM Plan (WPAs 8 & 9); Linear regression
Agricultural	31,990	31,081	2040	2014 IRWM Plan (WPAs 8 & 9); Linear regression

E.3.5 WPA 5

WPA 5 represents the most urban communities including Atascadero, Camp Roberts, Garden Farms, Heritage Ranch, Oak Shores, Paso Robles, San Miguel, Santa Margarita, Shandon, Spanish Lakes, Templeton, and Whitley Gardens. Table E-8 presents 2015 water usage and projected water usage for the WPA.

Table E-8: *WPA 5 Regional Demand*

Water Usage Type	Water Usage (AFY)		Projection Year	Water Purveyors	Source
	2015	Projected			
Urban	21,591	30,582	-		
Atascadero	5,139	7,485	2040	Atascadero MWC	UWMP
Camp Roberts	190	190	2040	Camp Roberts	MWR
Garden Farms	38	46	2075	Garden Farms Community Water District	Water usage forms; SLOCOG projections
Heritage Ranch	424	513	2070	Heritage Ranch CSD	Water usage forms; SLOCOG projections
Oak Shores	39	47	2050	Nacimiento Water Company	Water usage forms; SLOCOG projections
Paso Robles	5,153	9,032	2040	City of Paso Robles	UWMP
San Miguel	299	340	2050	San Miguel CSD	Water usage forms; SLOCOG projections
Santa Margarita	107	110	2050	CSA 23	Water usage forms; SLOCOG projections
Shandon	92	116	2050	CSA 16	Water usage forms; SLOCOG projections
Spanish Lakes	51			Spanish Lakes MWC	Water usage forms
Templeton	1,030	1,348	2050	Templeton CSD, Los Robles Mobile Estates	Water usage forms; SLOCOG projections
Whitley Gardens	82	91	2050	Green River MWC	Water usage forms (2013-14); SLOCOG projections
Rural	8,947	11,264	2040		2014 IRWM Plan (WPAs 10-16); Linear regression
Agricultural	90,117	95,413	2040		2014 IRWM Plan (WPAs 10-16); Linear regression

E.3.6 WPA 6

Demand projections for WPA 6 are not available. In evaluating the Land-used based approach for demand projections in WPA 6, there is a major disparity between the planned growth and

the actual growth. Such a disparity exists that projects based on the 2012 MWR are unreasonable. A discussion of the issues facing California Valley, the main community of WPA 6, is included in the forthcoming Disadvantaged Community Needs Assessment, which will be added to this plan **as Appendix K** when completed. Additionally, WPA 6's Land-use based approach will be re-evaluated as part of the District's planned in-depth supply and demand analysis to be undertaken in 2020 and 2021.