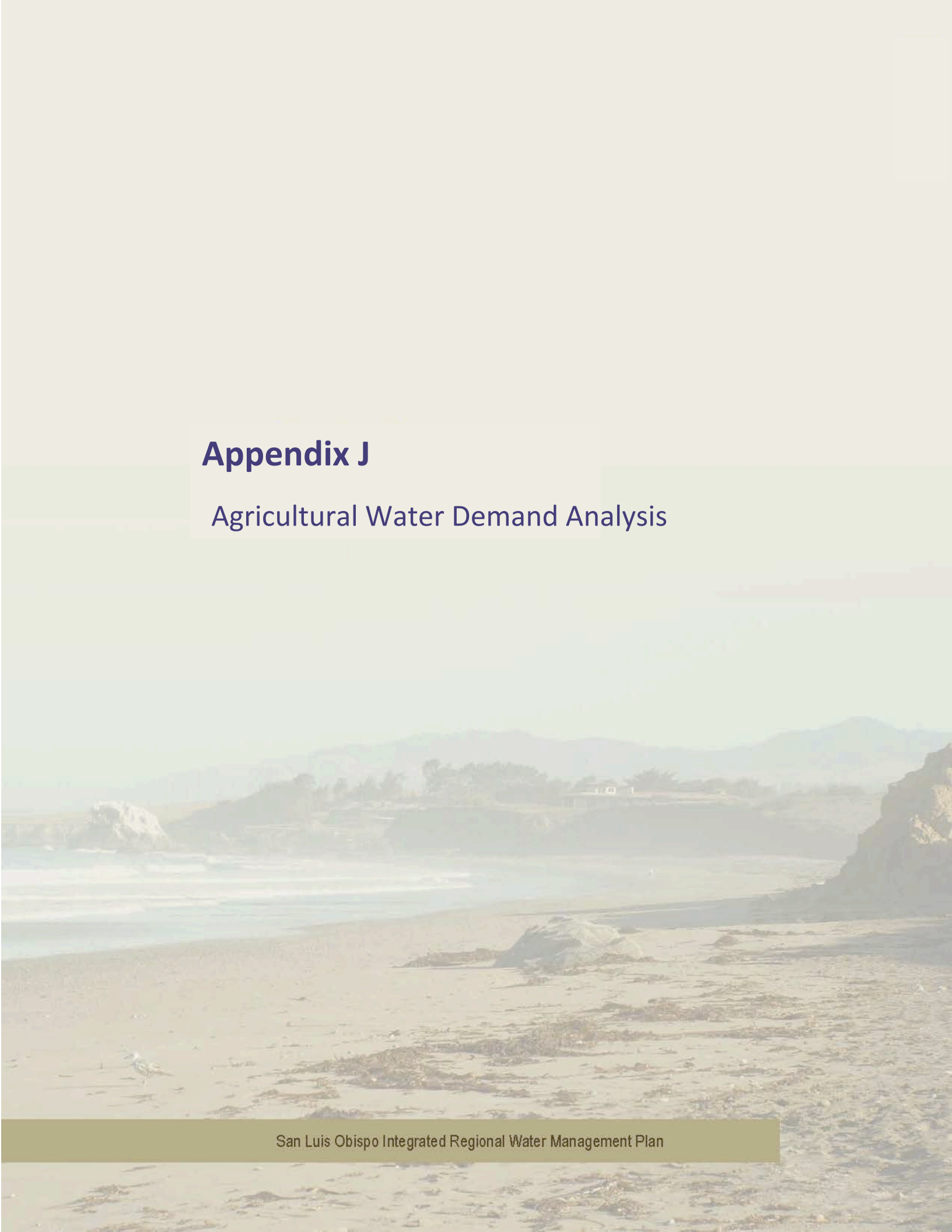
Appendix J

Agricultural Water Demand Analysis



Appendix J. Agricultural Water Demand Analysis

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Appendix J. Agricultural Water Demand Analysis

J.1 INTRODUCTION

Agricultural water demand (see **Figure J-1**) refers to the annual applied water in all irrigated agricultural areas in the IRWM planning region.

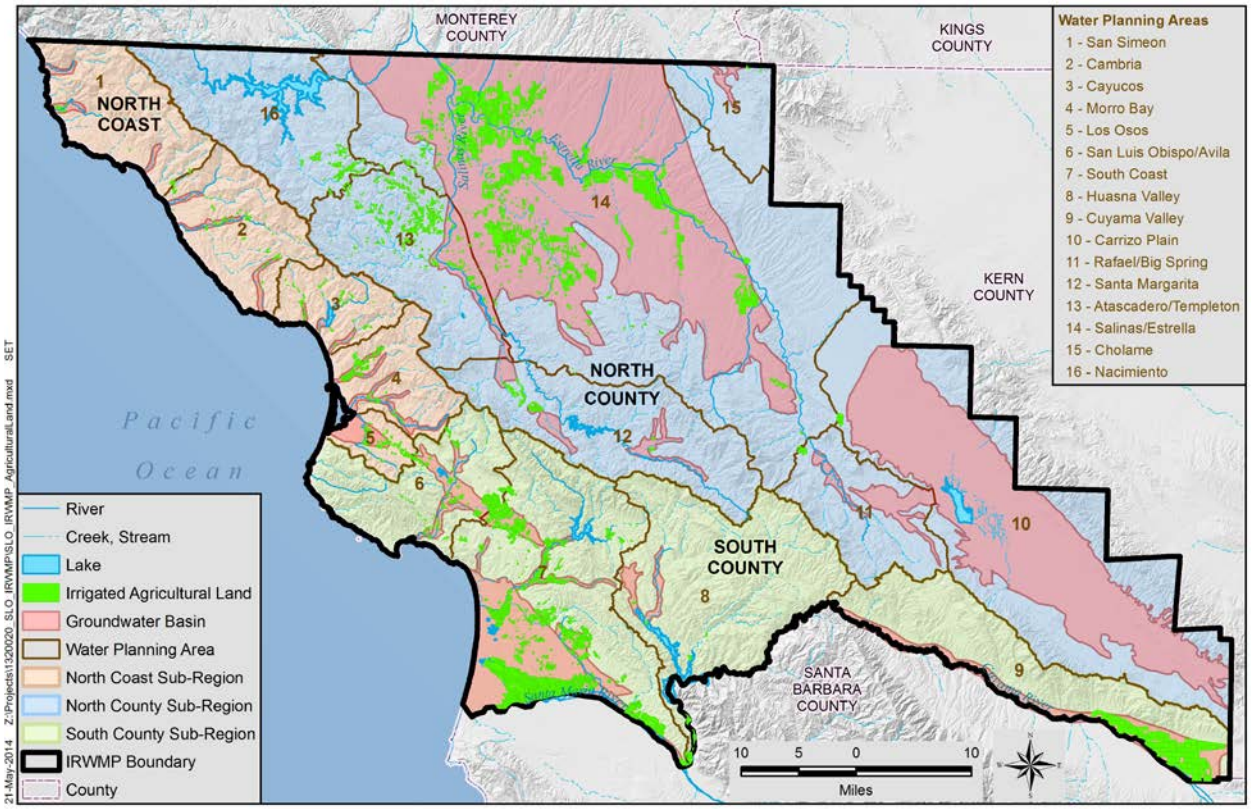

Figure J-1. Agricultural Areas

The current agricultural water demand was calculated using the same method and crop-specific applied water variables employed by the MWR, which utilized information on crop evapotranspiration, effective rainfall, leaching requirements, irrigation efficiency, deficit irrigation, and frost protection. The variables used in the 2012 MWR were reviewed and determined to be the most current values available. The Agricultural/Crop ArcGIS® layer for the San Luis Obispo County from August 2013 was provided to update the 2008 MWR agricultural water use estimates. The seven (7) crop categories presented in the IRWM represent approximately 37 crop types (or Primary Commodities, see **Table J-1**) with each category's water demand being based on a calculation of applied water using the crop-specific

evapotranspiration, contribution from rain or shallow water table, leaching requirements, irrigation efficiency, and frost protection.

Table J-1. Crop Group Primary Commodities

Seven (7) Crop Categories	Crop Types (Primary Commodities)	
Alfalfa	• Alfalfa	
Nursery	• Christmas trees • miscellaneous nursery plants	• flowers
Pasture	• miscellaneous grasses • mixed pasture	• sod/turf • sudan grass
Citrus	• Avocados • Grapefruits • Lemons	• Oranges • Olives • Kiwis • pomegranates
Deciduous	• Apples • Apricots • Berries • Peaches • Nectarines • Plum	• Figs • Pistachios • Persimmons • Pears • Quince • strawberries
Vegetables	• Artichokes • Beans • miscellaneous vegetables • Strawberries	• mushrooms • onions • peas • peppers • tomatoes
Vineyard	• wine grapes • table grapes	

For the Paso Robles groundwater basin, agricultural areas were taken from the recent groundwater modeling effort to ensure consistency of the two ongoing efforts. Replacement of the Paso Basin areas in the county data was done in GIS to create a single irrigated agricultural area layer for calculation purposes.

For details on the methodology used for deriving the crop water duty factors and calculating agricultural water demands, see Chapter 4.6.3 of the MWR.

J.1.8 *Purpose of Agricultural Demand Study*

As in all planning studies where demand projections are based on what is known today, with an eye towards the future, a number of assumptions are made in the development of the San Luis Obispo Region water demand analysis. For agriculture, the 2013 GIS analysis conducted for agricultural demands was used to extract the crop acreages for each of the Water Planning Areas (WPAs). This appendix on agricultural demands is meant to provide:

- a presentation of the unit demand factors
- the 2013 acreage of each crop category
- the estimated existing and future agricultural water demands

J.2 EXISTING (2010) VERSUS FUTURE AGRICULTURAL DEMAND FACTORS

The development of a present (or existing) and future agricultural demand is documented in the MWR by considering different hydrologic cycles, levels of potential growth or decline in the amount of agricultural lands, and changes in irrigation practices affecting unit water demand factors. The approach taken with the IRWM Plan is to pick a single baseline set of demand factors, knowing that demands change considerably between wet and dry hydrologic cycles.

The rationale behind this approach is to fully develop the need for water in terms of a quantifiable value to make direct comparisons with the amount of available supply. By reducing the "concept" of using ranges in values, the IRWM Plan creates a repeatable calculation which can be improved upon in each of the plan update iterations. The medium (or average) demand is the term used in the MWR and in this document when referring to the hydrologic conditions used for purposes of the plan.

Future average demands differ from current (or present 2013) demands because of expected changes in irrigation practices as water becomes more expensive and scarce, and technology provides a better indication of the need for applied water when water drops below the field capacity for the different crop types, including intentional deficit irrigation practices being applied in some cases. The MWR provides both existing and future demand factors to be applied to the existing and future agricultural areas. A presentation of the water demand factors is provided in **Table J-2**, **Table J-3**, and **Table J-4**.

As discussed above, the listed demand factors take into account all of the variables which go into a soil moisture accounting for each crop in each of the WPAs. The variation between WPA's is very apparent with demand factors increasing as the WPAs work their way to the north and south eastern portions of the county where there is much less rainfall and where the marine layer is not an influence on available water to meet the evapotranspiration requirements of the crops.

The negative percent differences between existing and future demand factors presented in **Table J-4** provides insight into the planned opportunities to conserve water in the future by including higher irrigation efficiencies.[1]

[1] Differences above 10% were reviewed and found to be in error in the MWR calculations and corrected.

Table J-2. Existing Unit Water Demand Factors (Average or Medium Conditions)

WPA Label	Alfalfa	Citrus	Deciduous	Nursery	Pasture	Vegetable	Vineyard	Average for WPA
1 San Simeon	1.99	0.86	1.36	1.05	2.13	1.66	0.37	1.35
2 Cambria	1.99	0.86	1.36	1.05	2.13	1.57	0.37	1.33
3 Cayucos	2.15	1.00	1.51	1.18	2.30	1.61	0.49	1.46
4 Morro Bay	2.73	1.46	1.99	1.61	2.88	1.84	0.81	1.90
5 Los Osos	2.73	1.46	1.99	1.61	2.88	1.84	0.81	1.90
6 San Luis Obispo/Avila	2.92	1.48	2.11	1.66	3.08	1.99	0.81	2.01
7 South Coast	3.34	1.84	3.26	2.00	3.52	2.12	1.04	2.45
8 Huasna Valley	5.61	2.96	4.43	3.14	5.67	2.82	2.17	3.83
9 Cuyama Valley	5.61	2.96	4.43	3.14	5.67	2.82	2.17	3.83
10 Carrizo Plain	5.90	3.21	4.69	3.37	5.96	2.92	2.39	4.06
11 Rafael/Big Spring	5.61	2.96	4.43	3.14	5.67	2.82	2.17	3.83
12 Santa Margarita	3.88	1.82	3.03	1.98	3.92	1.94	1.42	2.57
13 Atascadero/Templeton	3.88	1.82	3.03	1.98	3.92	1.94	1.42	2.57
14 Salinas/Estrella	4.52	2.30	3.55	2.46	4.56	2.29	1.73	3.06
15 Cholame	5.72	2.93	4.54	3.09	5.77	2.57	2.31	3.85
16 Nacimiento	3.88	1.82	3.03	1.98	3.92	1.94	1.42	2.57
Average for Crop Categories	**3.90**	**1.98**	**3.05**	**2.15**	**4.00**	**2.17**	**1.37**	**2.66**

Table J-3. Future Unit Water Demand Factors (Average or Medium Conditions)

WPA Label	Alfalfa	Citrus	Deciduous	Nursery	Pasture	Vegetable	Vineyard	Average for WPA
1 San Simeon	1.85	0.80	1.28	0.97	1.98	1.56	0.36	1.26
2 Cambria	1.85	0.80	1.28	0.97	1.98	1.47	0.36	1.25
3 Cayucos	2.00	0.94	1.41	1.10	2.13	1.51	0.47	1.37
4 Morro Bay	2.54	1.37	1.86	1.49	2.67	1.73	0.78	1.78
5 Los Osos	2.54	1.37	1.86	1.49	2.67	1.73	0.78	1.78
6 San Luis Obispo/Avila	2.71	1.39	1.98	1.54	2.86	1.86	0.77	1.87
7 South Coast	3.10	1.72	3.11	1.86	3.27	1.99	0.99	2.29
8 Huasna Valley	5.33	2.84	4.25	2.98	5.39	2.70	2.10	3.65
9 Cuyama Valley	5.33	2.84	4.25	2.98	5.39	2.70	2.10	3.65
10 Carrizo Plain	5.61	3.07	4.50	3.20	5.65	2.80	2.31	3.88
11 Rafael/Big Spring	5.33	2.84	4.25	2.98	5.39	2.70	2.10	3.65
12 Santa Margarita	3.69	1.74	2.91	1.88	3.72	1.86	1.37	2.45
13 Atascadero/Templeton	3.69	1.74	2.91	1.88	3.72	1.86	1.37	2.45
14 Salinas/Estrella	4.29	2.20	3.41	2.33	4.33	2.20	1.67	2.92
15 Cholame	5.43	2.80	4.35	2.93	5.48	2.46	2.23	3.67
16 Nacimiento	3.69	1.74	2.91	1.88	3.72	1.86	1.37	2.45
Average for Crop Categories	**3.69**	**1.89**	**2.91**	**2.03**	**3.77**	**2.06**	**1.32**	**2.52**

Table J-4. Percent Change in Water Demand Factors

WPA Label	Alfalfa	Citrus	Deciduous	Nursery	Pasture	Vegetable	Vineyard	Average for WPA
1 San Simeon	-7.2%	-6.4%	-6.3%	-7.3%	-7.2%	-6.2%	-2.5%	**-6.1%**
2 Cambria	-7.2%	-6.4%	-6.3%	-7.3%	-7.2%	-6.2%	-2.5%	**-6.1%**
3 Cayucos	-7.2%	-6.3%	-6.3%	-7.2%	-7.1%	-6.2%	-3.3%	**-6.2%**
4 Morro Bay	-7.1%	-6.2%	-6.2%	-7.2%	-7.1%	-6.2%	-4.4%	**-6.3%**
5 Los Osos	-7.1%	-6.2%	-6.2%	-7.2%	-7.1%	-6.2%	-4.4%	**-6.3%**
6 San Luis Obispo/Avila	-7.1%	-6.3%	-6.2%	-7.2%	-7.1%	-6.2%	-4.4%	**-6.4%**
7 South Coast	-7.1%	-6.2%	-4.7%	-7.1%	-7.1%	-6.2%	-4.8%	**-6.2%**
8 Huasna Valley	-5.0%	-4.2%	-4.0%	-5.1%	-5.1%	-4.1%	-3.5%	**-4.4%**
9 Cuyama Valley	-5.0%	-4.2%	-4.0%	-5.1%	-5.1%	-4.1%	-3.5%	**-4.4%**
10 Carrizo Plain	-5.0%	-4.2%	-4.0%	-5.1%	-5.1%	-4.1%	-3.5%	**-4.4%**
11 Rafael/Big Spring	-5.0%	-4.2%	-4.0%	-5.1%	-5.1%	-4.1%	-3.5%	**-4.4%**
12 Santa Margarita	-5.0%	-4.2%	-4.0%	-5.1%	-5.1%	-4.1%	-3.3%	**-4.4%**
13 Atascadero/Templeton	-5.0%	-4.2%	-4.0%	-5.1%	-5.1%	-4.1%	-3.3%	**-4.4%**
14 Salinas/Estrella	-5.0%	-4.2%	-4.0%	-5.1%	-5.1%	-4.1%	-3.4%	**-4.4%**
15 Cholame	-5.0%	-4.2%	-4.0%	-5.1%	-5.1%	-4.1%	-3.5%	**-4.4%**
16 Nacimiento	-5.0%	-4.2%	-4.0%	-5.1%	-5.1%	-4.1%	-3.3%	**-4.4%**
Average for Crop Categories	**-5.9%**	**-5.1%**	**-4.9%**	**-6.0%**	**-6.0%**	**-5.0%**	**-3.6%**	**-5.2%**

J.2 DEVELOPMENT OF AGRICULTURAL CROP AREAS

As mentioned in the introduction, the number of variables used in the calculation of the water supply requirements for each crop category are numerous and complex. One of the most important of these variables is the crop area within each WPA. The GIS overlay for irrigated croplands was developed by the County of San Luis Obispo, and supplemented with data from the Paso Robles Groundwater Model crop accounting (i.e., done to ensure consistency with the model). The crop areas are indicated in **Figure J-2**, **Figure J-3**, and **Figure J-4**.[2]

Knowing the crop categories and their acreages for each of the WPAs is the initial step taken in the demand calculation. The results of the GIS exercise of creating a cross-section layer with the WPA boundaries by overlaying the crop polygon boundaries were used for the existing agricultural demand. The results, in terms of areas for each Sub-Region, are shown in **Table J-5**.

Development of future agricultural demands is based on the MWR, except in cases where professional judgment is used to account for expected discrepancies between the 2013 data and the MWR data.

[2] Vegetable/strawberry crop shown on figures is lumped with the Vegetable Category in proceeding tables.

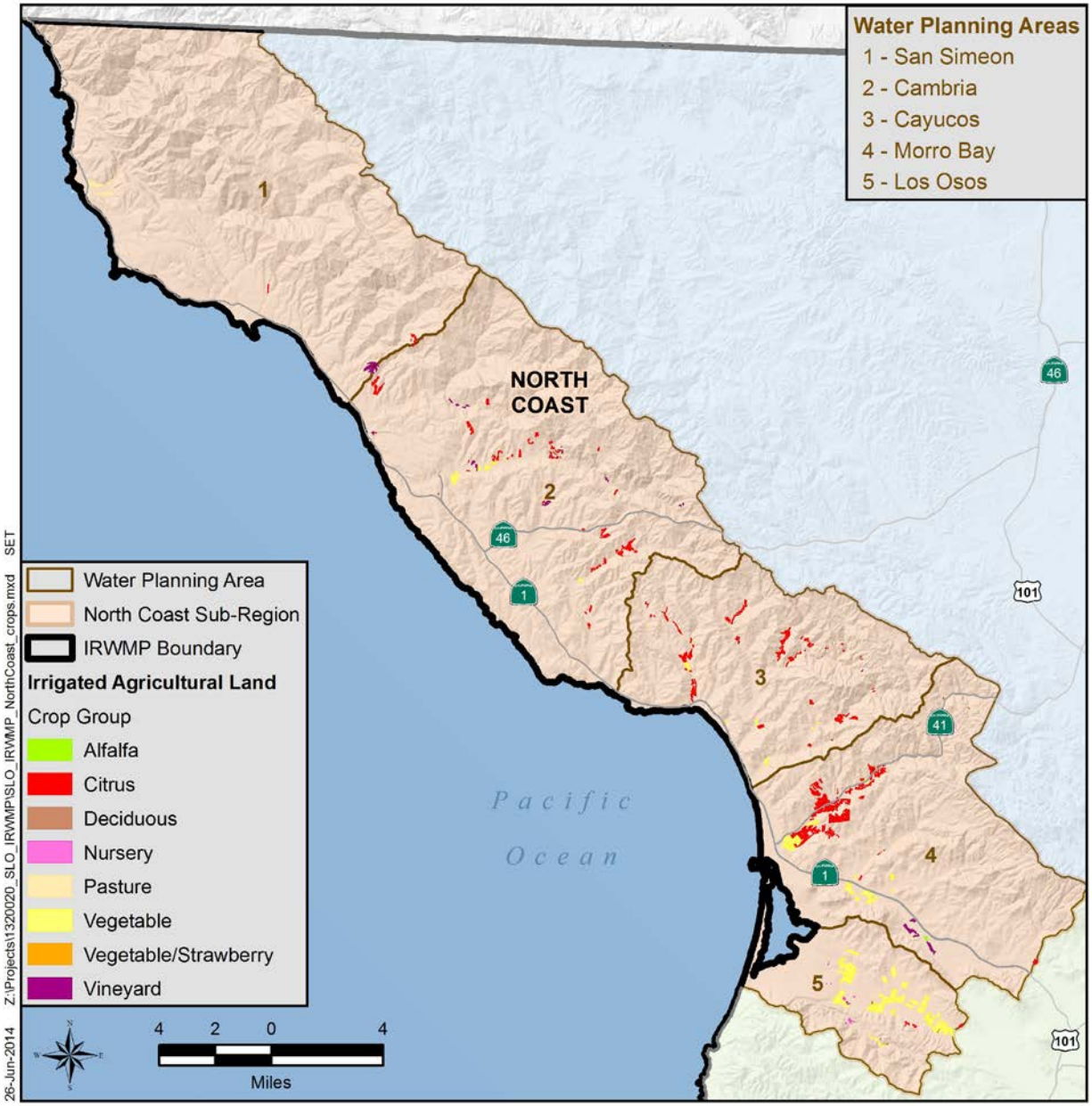

Figure J-2. North Coast Agriculture (Existing)

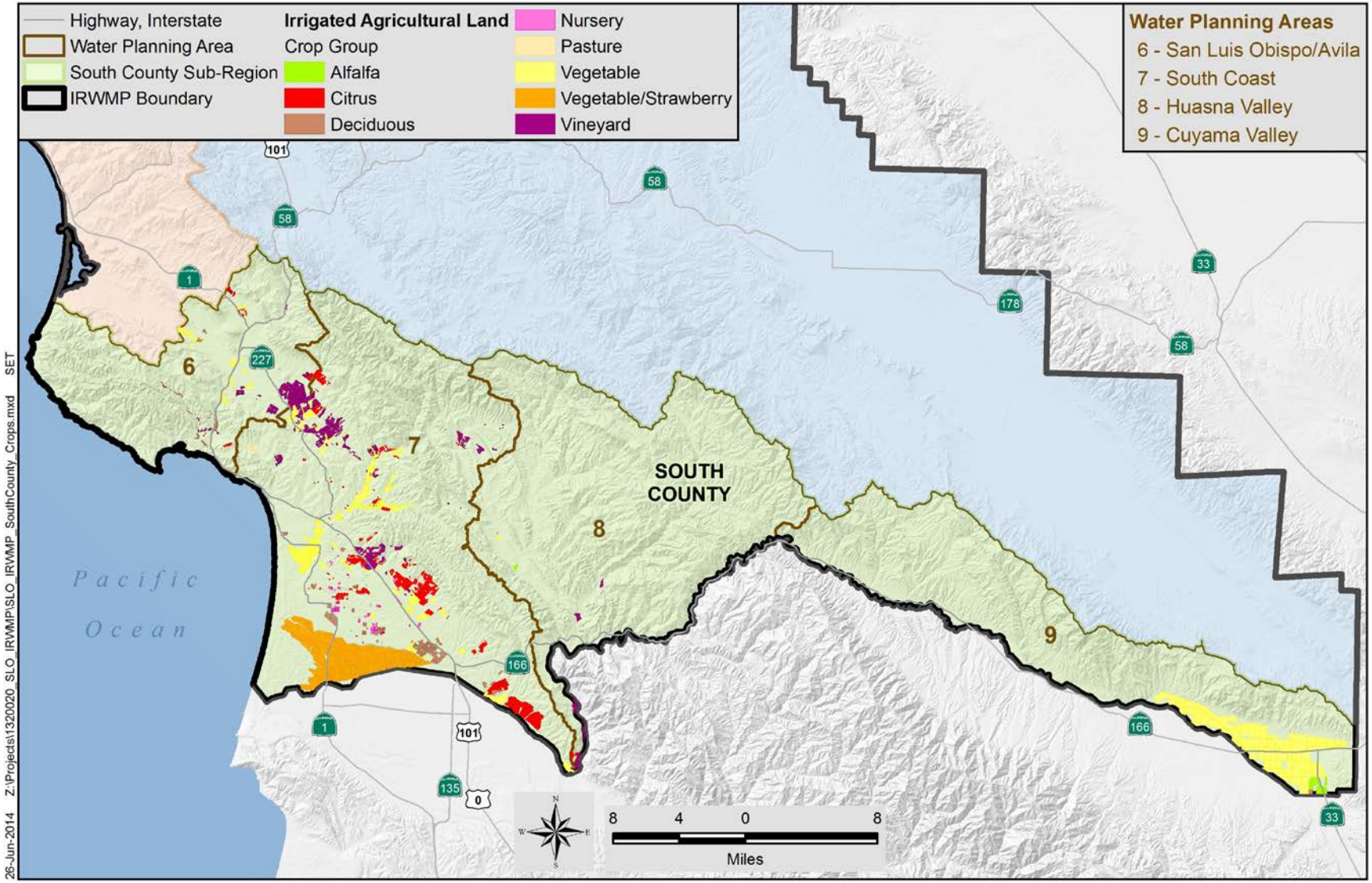

Figure J-3. South County Agriculture (Existing)

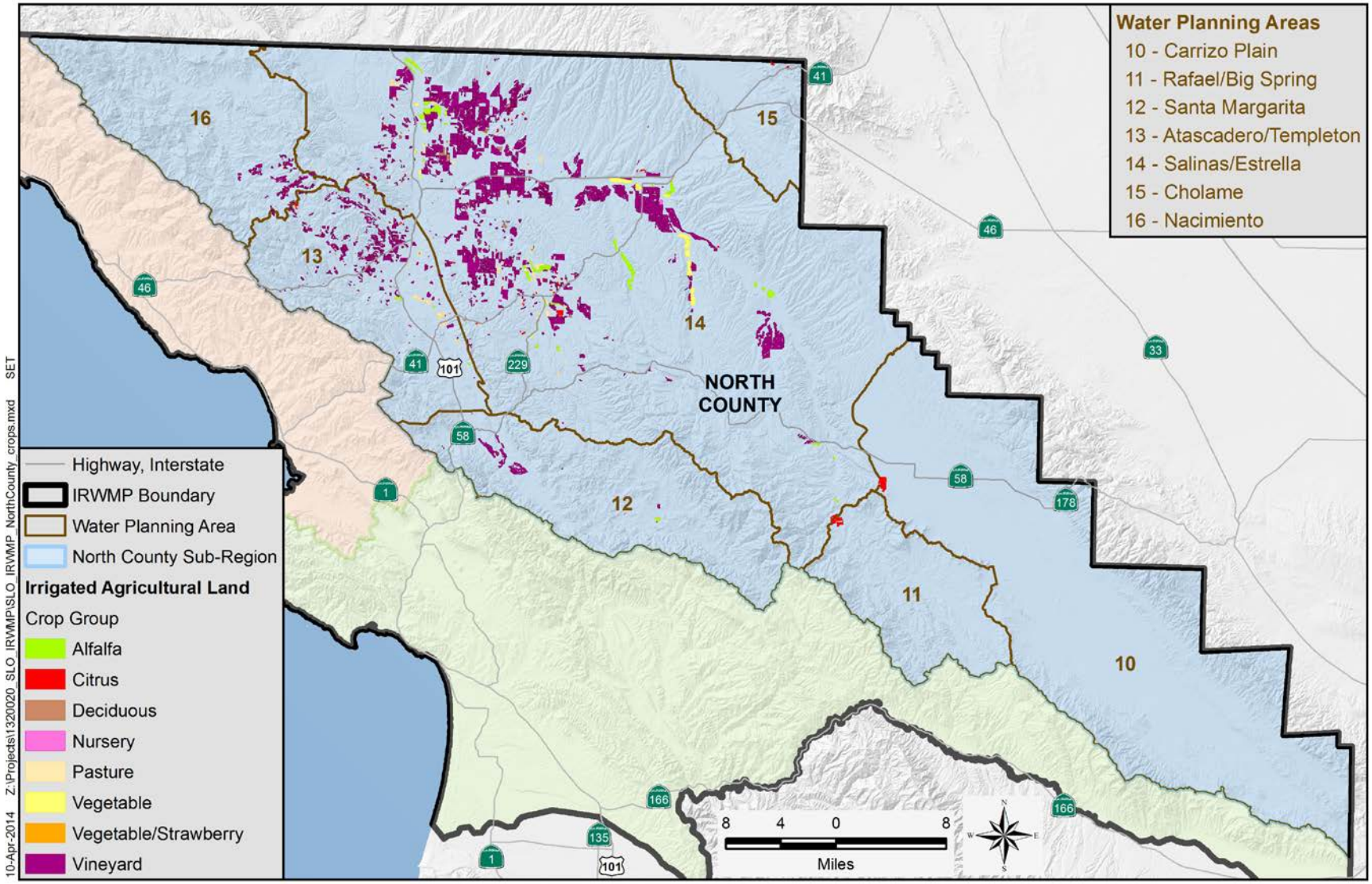

Figure J-4. North County Agriculture (Existing)

Table J-5. Existing (2013) Irrigated Acreage Totals by WPA

WPA Label	Alfalfa	Citrus	Deciduous	Nursery	Pasture	Vegetable	Vineyard	Grand Total
1 San Simeon	0	24	2	0	134	0	43	203
2 Cambria	0	362	6	0	11	94	83	556
3 Cayucos	0	440	0	0	1	63	3	508
4 Morro Bay	10	821	3	0	6	333	76	1,249
5 Los Osos	0	22	6	16	12	966	2	1,024
6 San Luis Obispo/Avila	0	242	225	0	76	560	1,248	2,352
7 South Coast	0	4,141	1,441	327	206	13,811	2,681	22,607
8 Huasna Valley	36	62	3	0	3	48	418	569
9 Cuyama Valley	433	0	39	0	0	9,986	0	10,457
10 Carrizo Plain	0	163	0	0	0	0	0	163
11 Rafael/Big Spring	0	175	0	0	0	0	0	175
12 Santa Margarita	52	0	10	0	5	0	880	946
13 Atascadero/Templeton	82	86	14	13	387	18	4,057	4,657
14 Salinas/Estrella	2,336	518	446	60	836	1,255	32,723	38,175
15 Cholame	0	37	0	0	0	0	0	37
16 Nacimiento	0	15	3	0	0	0	1,223	1,240
Total for Crop Categories	**2,949**	**7,108**	**2,196**	**416**	**1,679**	**27,134**	**43,437**	**84,919**

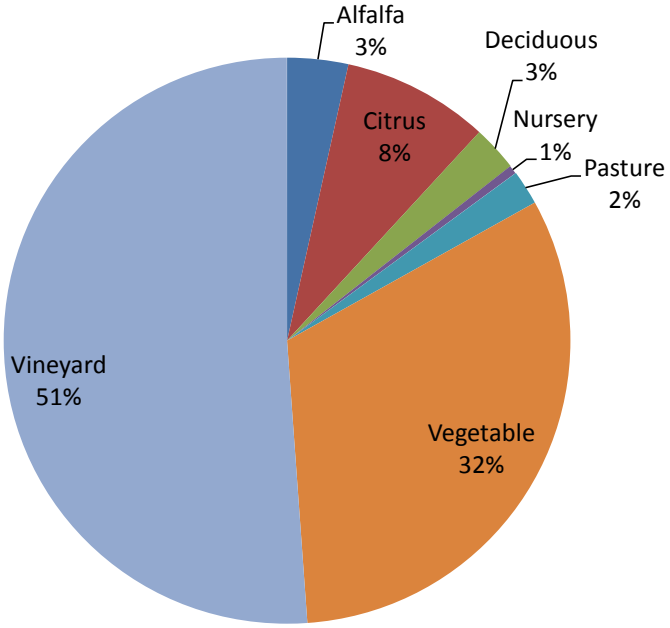

Figure J-5. Pie Chart of Crop Categories

In some areas, crop areas increase, especially as vineyards are being introduced in many areas not irrigated in the past. In other areas, a reduction in irrigated area occurs because of urban development; initially fallowing agricultural land, and then developing over time. The exact timing of both cases is not known and can only be estimated based on the current planning environment for agriculture and urban development in San Luis Obispo County.

J.3 Estimated Water Demands

The calculation of existing water demands is a matter of multiplying the above acreages by the water demand factors in **Table J-2**. This results in the demand values in **Table J-6**.

Table J-6. Existing (2013) Existing Agricultural Demands by WPA (AF/year)

WPA Label	Alfalfa	Citrus	Deciduous	Nursery	Pasture	Vegetable	Vineyard	Grand Total
1 San Simeon	0	20	2	0	286	0	16	325
2 Cambria	0	311	8	0	23	148	31	521
3 Cayucos	0	441	0	0	3	101	2	547
4 Morro Bay	27	1,196	6	0	19	613	62	1,923
5 Los Osos	0	33	11	26	35	1,781	2	1,887
6 San Luis Obispo/Avila	0	359	475	0	235	1,114	1,012	3,194
7 South Coast	0	7,614	4,701	655	725	29,263	2,788	45,746
8 Huasna Valley	202	183	13	0	18	135	907	1,457
9 Cuyama Valley	2,428	0	172	0	0	28,114	0	30,714
10 Carrizo Plain	0	523	0	0	0	0	0	523
11 Rafael/Big Spring	0	519	0	0	0	0	0	519
12 Santa Margarita	200	0	29	0	21	0	1,248	1,499
13 Atascadero/Templeton	319	156	44	25	1,518	34	5,756	7,852
14 Salinas/Estrella	10,560	1,190	1,585	147	3,815	2,878	56,464	76,640
15 Cholame	0	108	0	0	0	0	0	108
16 Nacimiento	0	27	8	0	0	0	1,735	1,769
Total for Crop Categories	**13,735**	**12,680**	**7,052**	**853**	**6,699**	**64,183**	**70,022**	**175,223**

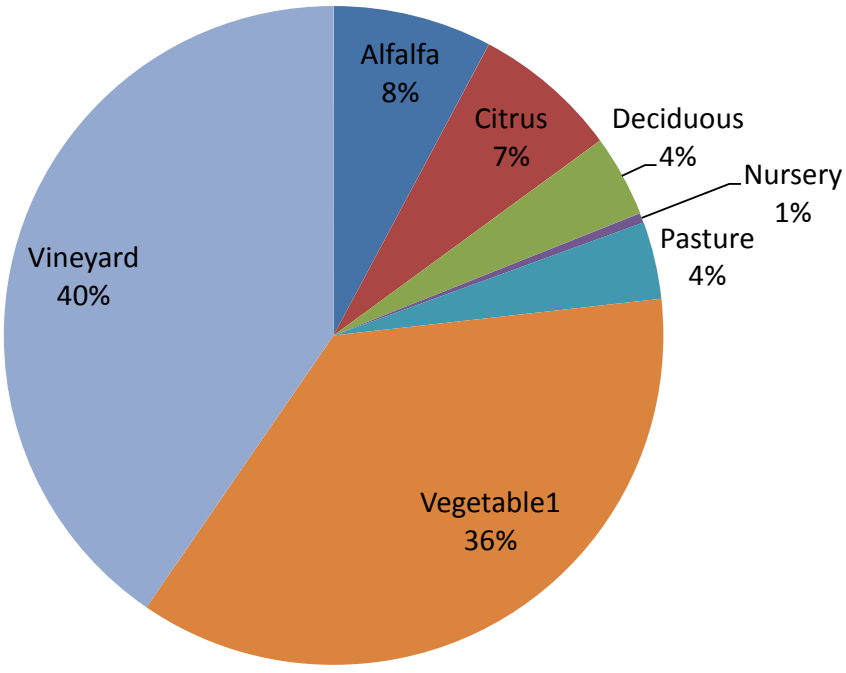

Figure J-6. Pie Chart of Existing Crop Demands

The total water demand of 175,000 AF/year is used as the total water demand and supply requirement for agriculture in the IRWM Region. In order to get to a future water demand in 5 year intervals, the demand values from the MWR are initially used and are listed in **Table J-7**.

Table J-7. Future (2035) Agricultural Demands by WPA from Master Water Report (AF/Year)

WPA Label	Alfalfa	Citrus	Deciduous	Nursery	Pasture	Vegetable	Vineyard	Grand Total
1 San Simeon	0	16	0	0	0	0	23	**39**
2 Cambria	0	329	36	1	0	582	166	**1,115**
3 Cayucos	0	448	0	0	0	163	6	**617**
4 Morro Bay	0	986	0	0	93	912	74	**2,066**
5 Los Osos	0	29	7	155	1,347	1,720	1	**3,258**
6 San Luis Obispo/Avila	0	311	361	62	598	1,715	420	**3,467**
7 South Coast	0	6,981	138	388	2,297	6,715	3,703	**20,221**
8 Huasna Valley	0	54	20	11	520	432	1,405	**2,441**
9 Cuyama Valley	0	0	2,728	0	0	25,654	441	**28,823**
10 Carrizo Plain	0	772	5	0	0	8	0	**784**
11 Rafael/Big Spring	0	0	0	0	0	0	0	**0**
12 Santa Margarita	55	7	25	0	353	0	1,762	**2,202**
13 Atascadero/Templeton	0	94	2,261	151	3,027	87	6,551	**12,170**
14 Salinas/Estrella	3,436	839	2,996	183	8,167	4,665	53,495	**73,781**
15 Cholame	0	73	0	0	0	0	0	**73**
16 Nacimiento	0	83	2,459	0	37	0	3,350	**5,928**
Total for Crop Categories	**3,491**	**11,020**	**11,033**	**951**	**16,441**	**42,652**	**71,397**	**156,985**

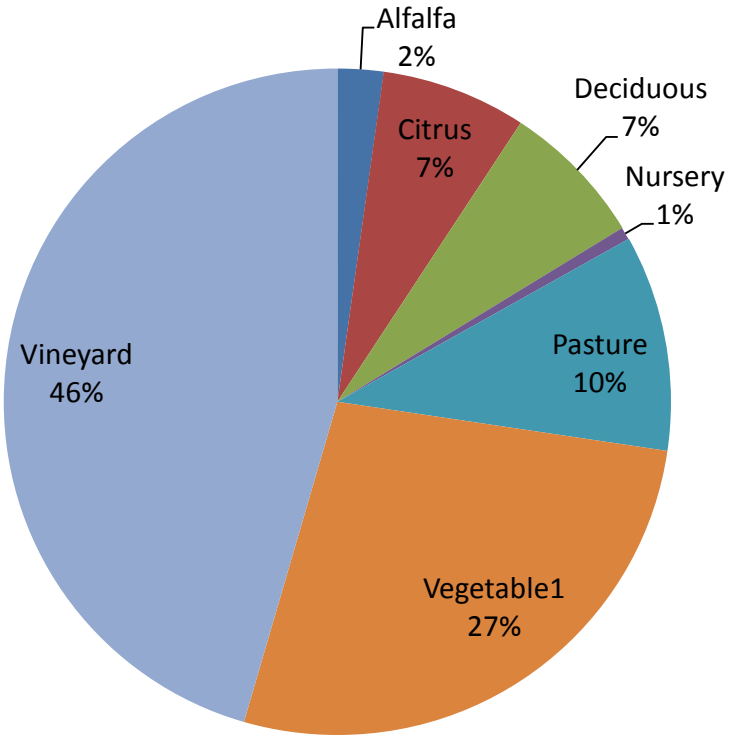

Figure J-7. Pie Chart of Future Crop Demands

The 10% reduction in agricultural water demand is shown to be a result of decreases in WPA demands for South Coast, and to a lesser extent, the Cuyama and Salinas Valleys, as illustrated in **Figure J-8**.

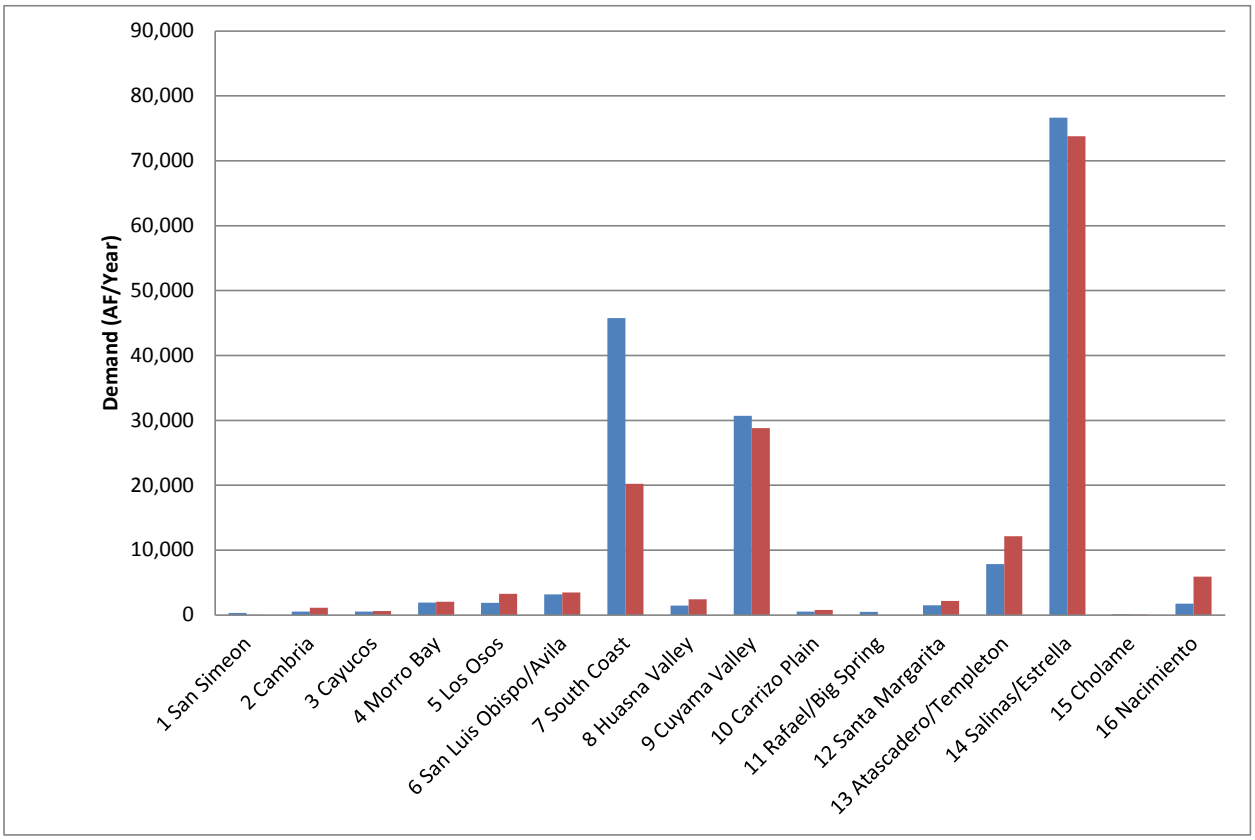

Figure J-8. Comparison Between Existing and Future Demands by WPA

Problematic to the calculation of showing changes on an individual WPA basis is the resulting discrepancies between the MWR and the updated 2013 irrigated agricultural inventory completed by the County. A good example is WPA 5 Los Osos where Pasture goes from 35 AF/year acres to 1,347 AF/year. The existing demand for Pasture in the MWR is calculated as 1,451 AF/year, making the future projected demand consistent with latter value above.

To account for the discrepancies, the rationale taken considered the overall change in demand for the WPA and adjusted the existing updated demands up (or down) by the same percentage (for each WPA's change) to result in the total future demand published in the MWR (see **Table J-8**). This approach is based on the premise that the crop categories in the MWR were likely placed in a different category, but the resulting demands were accepted by the individual stakeholders.

Table J-8. Future (2035) Agricultural Demands by WPA (AF/Year)

WPA Label	Alfalfa	Citrus	Deciduous	Nursery	Pasture	Vegetable	Vineyard	Grand Total
1 San Simeon	0	16	0	0	0	0	23	**39**
2 Cambria	0	329	36	1	0	582	166	**1,115**
3 Cayucos	0	448	0	0	0	163	6	**617**
4 Morro Bay	0	986	0	0	93	912	74	**2,066**
5 Los Osos	0	29	7	155	1,347	1,720	1	**3,258**
6 San Luis Obispo/Avila	0	311	361	62	598	1,715	420	**3,467**
7 South Coast	0	6,981	138	388	2,297	6,715	3,703	**20,221**
8 Huasna Valley	0	54	20	11	520	432	1,405	**2,441**
9 Cuyama Valley	0	0	2,728	0	0	25,654	441	**28,823**
10 Carrizo Plain	0	772	5	0	0	8	0	**784**
11 Rafael/Big Spring	0	0	0	0	0	0	0	**0**
12 Santa Margarita	55	7	25	0	353	0	1,762	**2,202**
13 Atascadero/Templeton	0	94	2,261	151	3,027	87	6,551	**12,170**
14 Salinas/Estrella	3,436	839	2,996	183	8,167	4,665	53,495	**73,781**
15 Cholame	0	73	0	0	0	0	0	**73**
16 Nacimiento	0	83	2,459	0	37	0	3,350	**5,928**
Total for Crop Categories	**3,491**	**11,020**	**11,033**	**951**	**16,441**	**42,652**	**71,397**	**156,985**

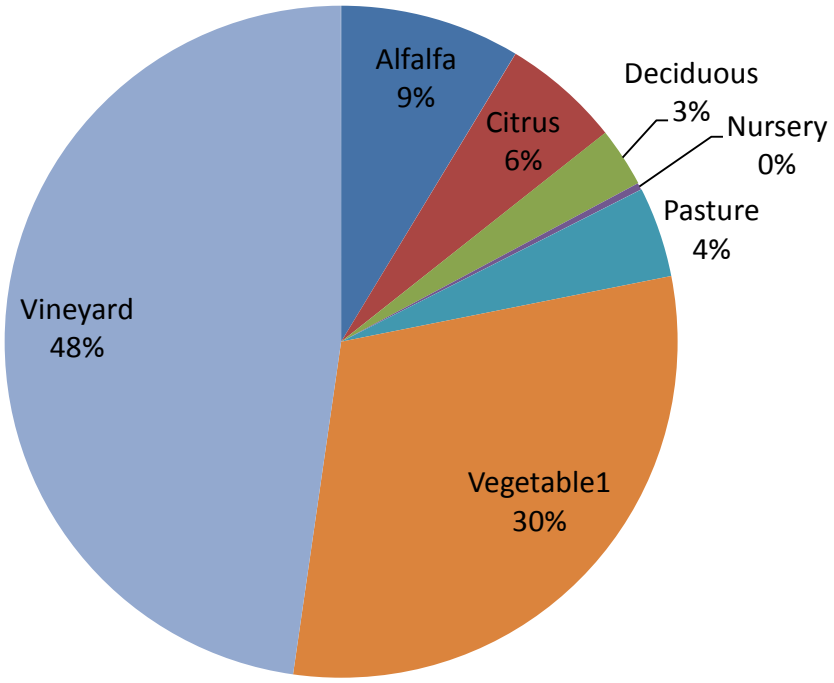

Figure J-9. Pie Chart of Adjusted Future Crop Demands

Unfortunately, the above methodology does not allow for a mapping of where the changes are (or will) be taking place, only that the demands of existing areas are going up or down based on the changes for the overall WPA. With the demand values in **Table J-8**, the next step is a straight line interpolation to transition the change in estimated demand for each crop across the period from 2010 to 2035. The year 2010 is used as a surrogate for 2013, assuming that significant agricultural changes did not occur in the intervening years.

The interpolation is provided in **Table J-9** with the totals at the bottom approximating the totals from the above tables. This table becomes the database table for use in the presentation of agricultural demands for each WPA. The graphical depiction of this data is presented in **Section D – Water Supply Demand and Budget** of the IRWM Plan.

Table J-9. Interpolation of Crop Categories for Database

WPA	Crop	2010	2015	2020	2025	2030	2035
1	Alfalfa	-	-	-	-	-	-
1	Citrus	20.43	16.83	13.23	9.63	6.04	2.44
1	Deciduous	2.38	1.96	1.54	1.12	0.70	0.28
1	Nursery	-	-	-	-	-	-
1	Pasture	286.46	236.01	185.55	135.09	84.63	34.18
1	Vegetable1	-	-	-	-	-	-
1	Vineyard	16.06	13.23	10.40	7.57	4.74	1.92
2	Alfalfa	-	-	-	-	-	-
2	Citrus	310.96	381.90	452.83	523.77	594.71	665.65
2	Deciduous	7.57	9.30	11.02	12.75	14.48	16.20
2	Nursery	-	-	-	-	-	-
2	Pasture	23.35	28.67	34.00	39.32	44.65	49.98
2	Vegetable1	148.01	181.78	215.54	249.31	283.08	316.84
2	Vineyard	30.83	37.86	44.89	51.92	58.96	65.99
3	Alfalfa	-	-	-	-	-	-
3	Citrus	441.37	452.74	464.10	475.47	486.83	498.20
3	Deciduous	-	-	-	-	-	-
3	Nursery	-	-	-	-	-	-
3	Pasture	2.58	2.64	2.71	2.78	2.84	2.91
3	Vegetable1	101.02	103.62	106.22	108.82	111.42	114.03
3	Vineyard	1.66	1.70	1.75	1.79	1.83	1.87

WPA	Crop	2010	2015	2020	2025	2030	2035
4	Alfalfa	27.32	27.72	28.13	28.53	28.94	29.34
4	Citrus	1,195.60	1,213.34	1,231.08	1,248.83	1,266.57	1,284.31
4	Deciduous	6.30	6.39	6.49	6.58	6.67	6.77
4	Nursery	-	-	-	-	-	-
4	Pasture	18.69	18.96	19.24	19.52	19.80	20.07
4	Vegetable1	613.47	622.58	631.68	640.78	649.89	658.99
4	Vineyard	61.65	62.57	63.48	64.40	65.31	66.23
5	Alfalfa	-	-	-	-	-	-
5	Citrus	32.56	37.29	42.02	46.76	51.49	56.22
5	Deciduous	11.13	12.75	14.37	15.99	17.60	19.22
5	Nursery	25.73	29.48	33.22	36.96	40.70	44.44
5	Pasture	34.73	39.78	44.83	49.87	54.92	59.97
5	Vegetable1	1,781.32	2,040.24	2,299.16	2,558.08	2,817.01	3,075.93
5	Vineyard	1.58	1.80	2.03	2.26	2.49	2.72
6	Alfalfa	-	-	-	-	-	-
6	Citrus	358.85	364.97	371.08	377.20	383.32	389.43
6	Deciduous	474.54	482.63	490.71	498.80	506.89	514.98
6	Nursery	-	-	-	-	-	-
6	Pasture	235.32	239.33	243.34	247.35	251.37	255.38
6	Vegetable1	1,113.90	1,132.88	1,151.87	1,170.85	1,189.84	1,208.83
6	Vineyard	1,011.84	1,029.09	1,046.34	1,063.58	1,080.83	1,098.08
7	Alfalfa	-	-	-	-	-	-
7	Citrus	7,614.30	6,764.61	5,914.92	5,065.23	4,215.54	3,365.84
7	Deciduous	4,700.50	4,175.96	3,651.43	3,126.89	2,602.36	2,077.82
7	Nursery	654.56	581.51	508.47	435.43	362.38	289.34
7	Pasture	725.32	644.38	563.44	482.50	401.56	320.62
7	Vegetable1	29,263.23	25,997.70	22,732.17	19,466.64	16,201.12	12,935.59
7	Vineyard	2,787.67	2,476.59	2,165.51	1,854.43	1,543.35	1,232.27
8	Alfalfa	201.87	229.15	256.43	283.70	310.98	338.26
8	Citrus	182.84	207.54	232.25	256.96	281.67	306.38
8	Deciduous	12.59	14.30	16.00	17.70	19.40	21.11

WPA	Crop	2010	2015	2020	2025	2030	2035
8	Nursery	-	-	-	-	-	-
8	Pasture	17.68	20.07	22.46	24.85	27.24	29.63
8	Vegetable1	134.54	152.72	170.90	189.09	207.27	225.45
8	Vineyard	907.13	1,029.71	1,152.30	1,274.89	1,397.47	1,520.06
9	Alfalfa	2,427.67	2,397.78	2,367.88	2,337.99	2,308.10	2,278.20
9	Citrus	-	-	-	-	-	-
9	Deciduous	171.66	169.55	167.43	165.32	163.20	161.09
9	Nursery	-	-	-	-	-	-
9	Pasture	-	-	-	-	-	-
9	Vegetable1	28,114.46	27,768.27	27,422.08	27,075.89	26,729.69	26,383.50
9	Vineyard	-	-	-	-	-	-
10	Alfalfa	-	-	-	-	-	-
10	Citrus	522.57	574.88	627.19	679.50	731.81	784.12
10	Deciduous	-	-	-	-	-	-
10	Nursery	-	-	-	-	-	-
10	Pasture	-	-	-	-	-	-
10	Vegetable1	-	-	-	-	-	-
10	Vineyard	-	-	-	-	-	-
11	Alfalfa	-	-	-	-	-	-
11	Citrus	519.26	415.41	311.55	207.70	103.85	-
11	Deciduous	-	-	-	-	-	-
11	Nursery	-	-	-	-	-	-
11	Pasture	-	-	-	-	-	-
11	Vegetable1	-	-	-	-	-	-
11	Vineyard	-	-	-	-	-	-
12	Alfalfa	200.13	218.91	237.69	256.48	275.26	294.04
12	Citrus	-	-	-	-	-	-
12	Deciduous	28.99	31.71	34.43	37.15	39.87	42.60
12	Nursery	-	-	-	-	-	-
12	Pasture	21.17	23.16	25.15	27.13	29.12	31.11
12	Vegetable1	-	-	-	-	-	-
12	Vineyard	1,248.42	1,365.59	1,482.76	1,599.94	1,717.11	1,834.28

WPA	Crop	2010	2015	2020	2025	2030	2035
13	Alfalfa	318.61	353.66	388.70	423.75	458.79	493.84
13	Citrus	155.75	172.89	190.02	207.15	224.28	241.42
13	Deciduous	43.59	48.38	53.17	57.97	62.76	67.56
13	Nursery	25.40	28.20	30.99	33.78	36.58	39.37
13	Pasture	1,518.12	1,685.11	1,852.10	2,019.08	2,186.07	2,353.06
13	Vegetable1	34.50	38.29	42.08	45.88	49.67	53.47
13	Vineyard	5,755.87	6,389.00	7,022.13	7,655.26	8,288.39	8,921.52
14	Alfalfa	10,559.68	10,480.91	10,402.13	10,323.35	10,244.58	10,165.80
14	Citrus	1,190.42	1,181.54	1,172.66	1,163.78	1,154.90	1,146.02
14	Deciduous	1,585.03	1,573.20	1,561.38	1,549.55	1,537.73	1,525.90
14	Nursery	147.07	145.98	144.88	143.78	142.68	141.59
14	Pasture	3,815.11	3,786.65	3,758.19	3,729.73	3,701.27	3,672.81
14	Vegetable1	2,878.11	2,856.64	2,835.17	2,813.70	2,792.23	2,770.76
14	Vineyard	56,464.36	56,043.13	55,621.90	55,200.67	54,779.44	54,358.21
15	Alfalfa	-	-	-	-	-	-
15	Citrus	108.36	101.27	94.18	87.08	79.99	72.90
15	Deciduous	-	-	-	-	-	-
15	Nursery	-	-	-	-	-	-
15	Pasture	-	-	-	-	-	-
15	Vegetable1	-	-	-	-	-	-
15	Vineyard	-	-	-	-	-	-
16	Alfalfa	-	-	-	-	-	-
16	Citrus	26.95	39.62	52.29	64.96	77.63	90.30
16	Deciduous	7.84	11.53	15.21	18.90	22.58	26.27
16	Nursery	-	-	-	-	-	-
16	Pasture	-	-	-	-	-	-
16	Vegetable1	-	-	-	-	-	-
16	Vineyard	1,734.62	2,550.03	3,365.45	4,180.86	4,996.27	5,811.68
Totals		**175,200.36**	**171,556.78**	**167,913.20**	**164,269.61**	**160,626.03**	**156,982.45**

San Luis Obispo Integrated Regional Water Management Plan