Demand Projections for Agriculture

Introduction

Every five years, the Southwest Florida Water Management District (District) develops a Regional Water Supply Plan (RWSP) in accordance with statutory requirements. A key component of this plan is a quantification of the water supply needs for all existing and future reasonable-beneficial uses within the 20-year planning horizon. Agricultural water use is the second largest water use sector in the District, and developing agricultural water use projections is an important step in assessing regional water supply needs. This appendix summarizes the methods used to develop the agricultural water use projections for the 2025 RWSP and the projection results.

The District also participated in the development of the 2025 Central Florida Water Initiative (CFWI) RWSP in conjunction with representatives from the Florida Department of Environmental Protection (FDEP), major public supply stakeholders, and the South Florida and St. John's River water management districts. The CFWI Planning Area includes portions of Lake and Polk counties which are under District jurisdiction. Consequently, the projected agricultural water use projections for Lake and Polk counties were developed on a different basis than the rest of the District and are detailed in the 2025 CFWI RWSP (CFWI, 2025).

Purpose

This memo explains the assumptions, methodologies, and sources used to develop the agricultural water use projections for the District's 2025 RWSP. This information includes:

- Projected irrigated agricultural acreages by crop type.
- Projected water demands for irrigated agriculture.
- Projected water demands for livestock and aquaculture.
- The spatial distribution of agricultural water use projections within the District.

Statutory Guidance

Section 373.709, Florida Statutes (F.S.) sets forth the requirement for regional water supply planning. Under these provisions, the Governing Board of each water management district shall develop a RWSP for regions within the district where existing sources of water are not adequate to supply water for all existing and future reasonable-beneficial uses and to sustain the water resources and related natural systems for the 20-year planning period. This must include a water supply development component which includes a quantification of the water supply needs for all existing and future reasonable-beneficial uses within the planning horizon.

Section 373.709(2)(a)1.b F.S. further states that:

Agricultural demand projections used for determining the needs of agricultural self-suppliers must be based upon the best available data. In determining the best available data for agricultural self-supplied water needs, the district shall consider the data indicative of future water supply demands provided by the Department of Agriculture and Consumer Services pursuant to s. 570.93 and agricultural demand projection data and analysis submitted by a local government

pursuant to the public workshop described in subsection (1), if the data and analysis support the local government's comprehensive plan. Any adjustment of or deviation from the data provided by the Department of Agriculture and Consumer Services must be fully described, and the original data must be presented along with the adjusted data.

Data and Information Sources

The two primary sources of data used to develop the agricultural water use projections were the District's Estimated Water Use Reports (EWURs) (2017-2021) and the Florida Department of Agriculture and Consumer Services (FDACS) Florida Statewide Irrigation Demand (FSAID) 10 Report, published June 30, 2023 (SWFWMD, 2017-2021; The Balmoral Group, 2023). This included the use of the FSAID 10 agricultural water use geodatabases associated with the FDACS report. The District also used permit-level data from the District's Water Management Information System (WMIS). For Polk and Lake counties, the 2025 CFWI RWSP projections (FSAID 9) were used to remain consistent across the two plans. The EWUR data used for the 5-year average historical water use (2017-2021) corresponds to the base year (2021) in the FSAID 10 projections for consistency.

Methodology

The process of developing the 2025 agricultural water use projections was generally divided into two parts: (1) a review of the FSAID 10 in comparison to existing historical water use data, and (2) the development of an adjusted FSAID 10 which more closely reflects historical water use patterns, by crop type and county, in the District. This adjustment was made for each of the three general categories of water use in the FSAID 10: irrigated crops, livestock, and aquaculture. The review of the FSAID 10 and the subsequent adjustments to each category are discussed in this section.

FSAID 10 Review

The FSAID 10 water use projection methodology is fully described in FDACS' technical report. A high-level summary of FSAID development can generally be described in 5 key steps:

1) Water Use Data: FDACS collects annual water use data at the permit level from each water management district. This is water use data collected for metered agricultural water use permits (WUP) by each district's water use permitting program.

2) Baseline Irrigated Acreage Map: FDACS creates a baseline map (2021 in this case) of actively irrigated areas within each district.

3) Develop an Econometric Water Use Model, and Model 2021 Water Demands: After mapping 2021 baseline irrigated areas, FDACS joins the districts' water use data to this coverage for individual permitted operations. Using FDACS irrigated acreages and district water use data, FDACS develops a database of irrigation application rates and uses this data to calibrate an econometric model to predict per acre water use for various crop categories. This model is then run to create a modeled estimated water demand coverage for the FSAID 10.

4) Project Future Irrigated Acreages: To assess the projected change in irrigated acreage, FDACS uses a statistical regression based on the historical trends in irrigated acreage in each county. Using this trend, FDACS projects future total irrigated acreage for each

   county. FDACS then uses a GIS model to produce a map of projected irrigated acreage and crop types in each county out to 2045.

5) Project Future Irrigation Demands: After the projected irrigated acreage coverage is complete, FDACS uses the econometric model to simulate future irrigation demands at the parcel level based on specific crop types. The econometric model assigns a per acre water use to each irrigated parcel based on crop type and projected crop price. Crop price is one of the key changing variables in the econometric model between the 2021 baseline and 2045 projected water use simulations.

Once the projected 2045 acreages, crop mix, and application rates are modeled at the parcel level, FDACS compiles this data into a geodatabase for publication and summarizes the results in the final FSAID report. District staff reviewed the published report and particularly examined the 2021 baseline water use estimates, the 2021 irrigated acreage coverage, the 2045 acreage projections and crop mix, and the 2045 projected water use.

Adjusted FSAID Projections to Reflect Historical Water Use Patterns

In general, although the District found the acreage data to be satisfactory for planning, the District identified several items relating to the water use baseline and projections that required modification of the projections for inclusion in the RWSP. These items are as follows:

1) The District's organization of crop types, as detailed in the EWUR (Table 4, Summary of Metered & Estimated Annual Average Agricultural Water Withdrawals [mgd] by County and Water Source) does not match up exactly with the crop categories used in the FSAID 10 geodatabase. To amend this, the following EWUR crop categories (WMIS crop codes) are reorganized to accurately reflect categories used in the FSAID 10 projections. Most notably, historic uses for potatoes were tallied within the Vegetables category of the EWUR and had to be removed from those totals and added to its own category. At first glance, melons would seem to be categorized within the Fruit Non-Citrus category but are listed within the FSAID 10 data as Vegetables (Fresh Market). The rationale behind these crop type categorizations involves grouping similar crop irrigation patterns and requirements together for consistent demand projections.

Estimated Water Use Report Crop Category	WMIS Crop Code(s)	FSAID 10 Crop Category
Blueberries, Strawberries, Other Fruit Trees	A410, A535, A445	Fruit Non-Citrus
Citrus	A415	Citrus
Field Crop	A485	Field Crop
Melon, Tomatoes, Vegetables (minus potatoes)	A470, A56F/A56S, A57H	Vegetables (Fresh Market)
Nursery	A480, A487	Greenhouse/ Nursery

Pasture	A490	Hay
Potatoes	A515	Potatoes
Sod	A525	Sod

Estimated Water Use Report Non-Agriculture Category	WMIS Crop Code(s)	FSAID 10 Crop Category
Aquaculture	L630 - L633, L660- L661, L662, L663	Aquaculture
Improved Pastures	L610	
Animal, Dairy, Livestock Feeding Operations	L600 - L606, L610, L615, L620, L625, L635, L640, L650, L655, L700, L705, L710, L730, L735, L745	Livestock

2) The baseline year (2021) FSAID 10 Irrigation Lands Geodatabase (ILG) water demand estimates for the District were slightly higher than the District's historic water use estimates (2017-2021 average). Overall, the 2021 modeled water use in the FSAID 10 ILG for the District was 336.64 million gallons per day (mgd), and the EWUR five-year average value for FSAID crop categories was 323.39 mgd. This inflated baseline compared to recent historical water use data created the potential for over-projection of future demands. The higher baseline demand would also be challenging for use in groundwater modeling for regional water supply planning, as use of these values would create an increase in pumpage in the regions of the District's groundwater models, as compared to historical water use estimates based on metered data. The over-estimation trend for baseline 2021 water demands was particularly apparent in counties in the Southern Water Use Caution Area (SWUCA), posing a challenge for future Minimum Flows and Levels (MFLs) and SWUCA recovery assessments.

3) The use of the FSAID econometric model to synthesize typical 2021 water demands for permits where historical, user-reported metered data is available was also problematic from a planning perspective. Using the FSAID econometric model to predict baseline water demands, rather than metered data, not only created potential for under- and over-estimation of demands at the permit level but also altered the spatial distribution of water use within counties, even where the FSAID predicted county totals may align with District estimates. Altering the spatial distribution of baseline water use can be particularly problematic in MFL assessments. Using modeled water demands where metered data is available can also have the effect of obscuring the benefits of individual grower's water conservation practices or the benefits of growers who have implemented alternative water supply and conservation projects through the District's Facilitating Agricultural Resource Management Systems (FARMS) cost-share program. For these reasons, the District required baseline water demand data to be more reflective of historical metered water use at the permit withdrawal level.

4) It appeared that some of the large discrepancies in FSAID modeled water use compared to historical, metered data were a result of over-estimation of irrigated acreages within permits. This was observed particularly for crops where agricultural land use or irrigated acreage can rapidly change, such as seasonal vegetable operations in Manatee County, strawberry operations in Hillsborough County which can rotate with other agricultural land

uses each year, and citrus, where citrus greening has caused rapid changes in acreages due to grove abandonments or conversions to other annual crop types such as sod.

5) District staff also found that when comparing final FSAID values to multi-year averages of water use at the permit scale, the FSAID model appeared to systematically overestimate water use for the District's permit population. Staff compared metered data to FSAID estimates and conducted a preliminary assessment of residuals and found evidence of over-estimation trends. Part of this trend seems to stem from the use of asymmetrical screening thresholds in the calibration of the econometric model. When applying District-supplied metered data to the estimated acreage of FSAID parcels, FDACS screened out the lower 25% of per acre water use rates but only screened out the upper 10% of per acre water use rates. This dataset was then used for calibration of the econometric water use model. Screening out 15% more low water use values than high water use values prior to calibrating the econometric model creates a condition where statistical bias is introduced to the model towards the higher limits. Models calibrated to an asymmetrical subset of an original data set will be unable to predict the characteristics of the overall observed projected data set. Although it is necessary to screen and provide quality assurance and control to the data used for model calibration, it seems unlikely that water use data for the lowest 25 percent of water users in the District should be thrown out as outliers while only the top 10 percent of data should be removed, most notably for crops located within water use caution areas where the use of agricultural conservation credits allow a buffer to exceeding the permitted quantities equally to water saved below the permitted 5-in-10 annual average. Additionally, since the FSAID projected demands are based on application rates (metered data divided by FSAID-estimated acreage), over-estimation of irrigated acreage (observed in other analysis) in conjunction with various crop type changes in both seasonal and annual crops would increase the likelihood of statistical outliers. In summary, this method of asymmetrical screening of water use data appeared to have introduced bias into the econometric model, resulting in overestimation of baseline agricultural water use and projected future demands in the District.

In summary, the baseline water demands and the 2045 projected agricultural water demands presented in the FSAID 10 report deviated slightly from historical metered water use in the District at the regional, county, and permit levels and required adjustment to incorporate into the RWSP. It was particularly important to ensure that groundwater modeling exercises for the RWSP were reflective of existing metered water use to coincide with current water use caution area recovery efforts. Additionally, the FSAID 10 projections assumed all future field acreage will be planted, whereas the historical metered water use more accurately represents the actual acreage planted each year.

FSAID 10 Agricultural Water Demand Adjustments

To ensure that the FSAID 10 ILG irrigation demands were consistent with permittee-reported historical water use data, District staff used metered water use data where available to adjust the FSAID 10 projected demands. This allowed the District to incorporate the most recent, best available data into the projections.

Acreage

As the District does not directly track total permit-level irrigated acreage on an annual or seasonal basis, the FSAID 10 ILG irrigated acreage coverage was considered the best available acreage

data for this RWSP. The use of the FSAID 10 acreage projections also included the added benefits of consistent statewide crop categories and the recent incorporation of irrigated areas field verification efforts by FDACS in some District counties. A summary of FSAID 10 irrigated acreage projections for the District by crop type are provided below.

FSAID 10 Irrigated Acreage Projections for the District

Crop Type	2020 Acreage	2045 Acreage
Citrus	240,171	226,395
Greenhouse/Nursery	7,903	6,822
Hay	9,024	8,616
Sod	8,096	7,363
Vegetables (Fresh Market)	50,006	47,460
Field Crop	13,184	13,165
Fruit (non-citrus)	20,781	16,537
Potatoes	2,425	2,456
Grand Total*	**351,590**	**328,813**

*Polk and Lake counties use FSAID 9 per the 2025 CFWI RWSP.

Typical Year Water Use Projections

District staff used the FSAID 10 ILG, Aquaculture, and Livestock coverage to develop a metered baseline adjusted FSAID 10 water use projection. All adjustments were made at the county and crop level using the FSAID 10 compound 5-year growth rates calculated from FDACS FSAID 10 published data. The adjustments described below were conducted for all counties in the District for consistency except for Pinellas County, where due to significant urbanization, the District developed an alternative method of projection using the minimal amount of existing agriculture acreage as the baseline. A Geographic Information System (GIS) analysis was conducted to determine the permitted acreage, crop types, and 5-year average demands. After adjustments to the FSAID 10 projections were complete, the agricultural projections for the District's portion of Polk and Lake counties were replaced by the projections developed for the 2025 CFWI RWSP, as Polk and Lake counties are within the CFWI Planning Area, and FSAID 9 was used for the projections in this region.

1) Metered and Unmetered Irrigation Permits by County and Crop Type: Staff compiled EWUR data for all metered agricultural permits for 2017-2021. Staff then prepared the FSAID 10 ILG into a spreadsheet that included acreage and crop data. Once the FSAID 10 data were tabulated, staff used the 2017-2021 EWUR data to calculate a 5-year average and used that for 2020 baseline historical water use value by county and crop type, from which the adjustment projections were calculated. The five-year compound growth rates were then determined from the FSAID 10 block projections and were applied to the 2020 5-year average EWUR baseline totals. This created a new projected water use projection (in mgd) for each permit based on future projected growth and current application rates. In no case did FDACS forecast a change in crop type for an individual permit, so existing application rates remained reasonable for the projected future crop type. There were a few of the FSAID permit-level projections where the crop type wasn't listed for the entire 2020-2045 projection timespan. These permit-level projections were determined by FDACS to be potential future crops where the specifics of the acreage (e.g., soil characteristics, rainfall, evapotranspiration) and market prices determined what future crop would be planted.

2) Aquaculture: FDACS held aquaculture water use constant over the 2020-2045 planning period but at a value that was higher than historic would suggest. District staff examined the FSAID 10 aquaculture coverage to identify where these differences were occurring. Since projected water use values for each of these permits were higher than what historic pumpage was, the District made the decision to use the historic 5-year aquaculture water use averages for the projected demands. The aquaculture demands were held to a constant of 5.785 mgd from 2020 to 2045.

3) Livestock: FDACS held livestock water use constant over the 2020-2045 planning period. These projections were developed using statewide livestock inventory and typical water use per animal demand benchmarks. The overall FSAID livestock GIS coverage identified 7.05 mgd of livestock demands Districtwide at the 2021 baseline. As many of the District's agricultural permits include multiple water use types (such as livestock and an irrigated crop), staff incorporated historic water use data from the 2017-2021 EWURs (Table 4 Summary of Metered & Unmetered Annual Average Agricultural Water Withdrawals [mgd] by County and Water Source) to differentiate between traditional agricultural water use and aquaculture/livestock uses. District staff followed FDACS forecasted trends and held livestock use constant at 1.558 mgd from 2020 to 2045.

1-in-10 Dry Year Projections

Upon completion of all FSAID adjustments for typical year ILG demands, staff scaled the adjusted ILG average year demands to 1-in-10 demands. This was done using the scaling rations developed by FDACS in the FSAID 10 Geodatabase 1-in-10 drought projections (MGDDRY). Projected ILG demands for 2020 to 2045 were scaled up at the permit level using the crop-specific scaling factors used in FSAID 10 Table E-8 Dry to Average Year Ration for each crop type by water management district. Aquaculture and livestock demands were identified to be the same for a typical year and a 1-in-10 event in the FSAID 10 report. Thus, 1-in-10 aquaculture and livestock demands were the same as the 5-in-10 values.

Benefits of Adjustments to FSAID 10 Demands

There are several benefits to the use of the FSAID 10 projections with the District's modifications. Firstly, using FSAID 10 acreages allows the District to use an updated statewide dataset for agricultural acreage with common statewide crop categories. These active acreages are updated annually, in many cases including field verification. The use of grower-provided, metered water use data for water use projections greatly increased the utility of the FSAID 10 acreage projections. Using permit-level water use data allows the District to maintain grower-level water use patterns while scaling up water use based on projected acreage growth. The grower provided water use data represents the best available data for local agricultural water use patterns and is reflective of regional efforts to improve water use efficiency through the SWUCA Recovery Strategy and the investments of the FARMS Program as well as other best management practice incorporation. Using metered data as a projection baseline also ensures that water use is not redistributed for future modeling efforts and maintains local high and low water use centers in each county, providing for more accurate assessment of water resources and MFLs.

Stakeholder Input on Projection Methods

The adjusted FSAID methodology developed by the District was approved by the Agricultural and Green Industry Advisory Committee as part of the 2020 RWSP stakeholder review process. This methodology was carried forward for use in this 2025 RWSP. In addition to the outreach efforts that are ongoing as part of the overall development of the 2025 RWSP, District staff met with the FDACS Office of Agricultural Water Policy, the publisher of the FSAID to provide updates on the technical challenges of incorporating the unadjusted FSAID 10 into the RWSP, discuss the methodology being carried forward for use in this 2025 RWSP, and provide summary data. District staff also solicited feedback on the draft AG demand projections from the District's Agricultural and Green Advisory Committee and FDACS staff. The District believes that the use of FSAID 10 acreage projections and District metered water use data utilizes the best available data for this regional effort.

References

Central Florida Water Initiative (CFWI), 2025. *2025 Central Florida Water Initiative Regional Water Supply Plan*.

Southwest Florida Water Management District (SWFWMD), 2017-2021. *Estimated Water Use Reports (for the years 2017-2021).* Brooksville, FL.

The Balmoral Group, 2022. *Florida Statewide Agricultural Irrigation Demand 9*. Prepared for the Florida Department of Agriculture and Consumer Services.

The Balmoral Group, 2023. *Florida Statewide Agricultural Irrigation Demand 10*. Prepared for the Florida Department of Agriculture and Consumer Services.

Districtwide 2025 Agricultural Water Use Projections:

Table 1. *Total adjusted agricultural, aquaculture, and livestock water use projections (5-in-10 water demands, mgd)*

County	Adjusted 2020	Adjusted 2025	Adjusted 2030	Adjusted 2035	Adjusted 2040	Adjusted 2045
Charlotte	8.964	9.102	9.165	9.168	9.205	9.180
Citrus	1.659	1.797	1.795	1.803	1.805	1.805
DeSoto	54.510	55.751	56.134	55.812	55.498	55.033
Hardee	36.754	37.898	38.258	37.933	37.607	37.165
Hernando	1.686	1.682	1.747	1.751	1.756	1.756
Highlands	39.205	39.971	40.089	38.921	37.569	36.321
Hillsborough	43.319	41.691	40.451	38.654	37.060	35.558
Lake*	0.568	0.578	0.588	0.598	0.488	0.428
Levy	8.734	8.893	9.027	9.250	9.808	10.272
Manatee	50.933	50.594	50.368	49.688	49.039	48.514
Marion	3.159	3.131	2.945	2.758	2.711	2.710
Pasco	5.782	4.430	3.719	3.098	2.650	1.702
Pinellas	0.030	0.030	0.030	0.030	0.030	0.030
Polk*	65.617	66.387	68.207	67.497	66.657	65.837
Sarasota	3.214	3.228	3.235	3.257	3.255	3.267
Sumter	6.650	6.287	5.963	5.891	5.761	5.410
Grand Total	**330.785**	**331.449**	**331.721**	**326.109**	**320.900**	**314.989**

*Polk and Lake totals are based on FSAID 9 values as in the 2025 CFWI RWSP projections.

Table 2. *Irrigated crop water use projections (5-in-10 water demands, mgd)*

County	2020 Baseline	Projected 2025	Projected 2030	Projected 2035	Projected 2040	Projected 2045
Charlotte	8.959	9.097	9.160	9.163	9.200	9.175
Citrus	1.654	1.792	1.790	1.798	1.800	1.800
DeSoto	53.915	55.156	55.539	55.217	54.903	54.438
Hardee	36.326	37.470	37.830	37.505	37.179	36.737
Hernando	1.605	1.601	1.666	1.669	1.675	1.675
Highlands	39.022	39.787	39.905	38.737	37.385	36.138
Hillsborough	40.702	39.073	37.833	36.036	34.443	32.940
Lake*	0.550	0.560	0.570	0.580	0.470	0.410
Levy	8.733	8.893	9.027	9.249	9.808	10.272
Manatee	50.434	50.095	49.869	40.869	48.540	48.015
Marion	3.124	3.096	2.910	2.723	2.677	2.675
Pasco	5.694	4.343	3.632	3.011	2.563	1.615
Pinellas	0.030	0.030	0.030	0.300	0.030	0.030
Polk*	64.620	65.390	67.210	66.500	65.660	64.840
Sarasota	3.156	3.170	3.177	3.200	3.197	3.209
Sumter	4.867	4.503	4.179	4.108	3.978	3.627
Grand Total	**323.392**	**324.056**	**324.328**	**318.717**	**313.507**	**307.596**

*Polk and Lake totals are based on FSAID 9 values as in the 2025 CFWI RWSP projections.

Table 3. *Irrigated crop acreage projections by crop type*

Crop Type	2020	2025	2030	2035	2040	2045
Citrus	240,171	237,994	235,630	232,710	229,420	226,395
Greenhouse/Nursery	7,903	7,457	7,151	6,994	6,959	6,822
Hay	9,024	9,094	8,909	8,796	8,866	8,616
Sod	8,096	8,073	8,025	7,766	7,412	7,363
Vegetables (Fresh Market)	50,006	49,633	49,031	48,594	47,951	47,460
Field Crops	13,184	13,160	13,151	13,080	13,173	13,165
Fruit (Non-Citrus)	20,781	19,849	19,002	18,130	17,335	16,537
Potatoes	2,425	2,425	2,425	2,425	2,415	2,456
Grand Total	351,590	347,685	343,326	338,496	333,532	328,813

**Acreage values provided are FSAID 10 values (2021 base year acreages), except for Polk and Lake counties. Acreages provided for Polk and Lake counties are FSAID 9 values (2020 base year acreages), consistent with the 2025 CFWI RWSP. Base year acreages were used with 2017-2021 water use data to develop an estimated 2020 water demand baseline. Pinellas County includes 9.18 field crop acres.

Table 4. *Livestock water use projections (5-in-10 water demands, mgd)*

County	2020 Baseline	Projected 2025	Projected 2030	Projected 2035	Projected 2040	Projected 2045
Charlotte	0.005	0.005	0.005	0.005	0.005	0.005
Citrus	0.003	0.003	0.003	0.003	0.003	0.003
DeSoto	0.1152	0.1152	0.1152	0.1152	0.1152	0.1152
Hardee	0.428	0.428	0.428	0.428	0.428	0.428
Hernando	0.0812	0.0812	0.0812	0.0812	0.0812	0.0812
Highlands	0.1838	0.1838	0.1838	0.1838	0.1838	0.1838
Hillsborough	0.0488	0.0488	0.0488	0.0488	0.0488	0.0488
Lake*	0.001	0.001	0.001	0.001	0.001	0.001
Levy	0.0004	0.0004	0.0004	0.0004	0.0004	0.0004
Manatee	0.4302	0.4302	0.4302	0.4302	0.4302	0.4302
Marion	0.0346	0.0346	0.0346	0.0346	0.0346	0.0346
Pasco	0.0872	0.0872	0.0872	0.0872	0.0872	0.0872
Pinellas	0	0	0	0	0	0
Polk*	0.0792	0.0792	0.0792	0.0792	0.0792	0.0792
Sarasota	0.048	0.048	0.048	0.048	0.048	0.048
Sumter	0.0626	0.0626	0.0626	0.0626	0.0626	0.0626
Grand Total	**1.6082**	**1.6082**	**1.6082**	**1.6082**	**1.6082**	**1.6082**

*Polk and Lake totals are based on FSAID 9 values as in the 2025 CFWI RWSP projections.

Table 5. *Aquaculture water use projections (5-in-10 water demands, mgd)*

County	2020 Baseline	Projected 2025	Projected 2030	Projected 2035	Projected 2040	Projected 2045
Charlotte	0.000	0.000	0.000	0.000	0.000	0.000
Citrus	0.002	0.002	0.002	0.002	0.002	0.002
DeSoto	0.480	0.480	0.480	0.480	0.480	0.480
Hardee	0.000	0.000	0.000	0.000	0.000	0.000
Hernando	0.000	0.000	0.000	0.000	0.000	0.000
Highlands	0.000	0.000	0.000	0.000	0.000	0.000
Hillsborough	2.569	2.569	2.569	2.569	2.569	2.569
Lake*	0.017	0.017	0.017	0.017	0.017	0.017
Levy	0.000	0.000	0.000	0.000	0.000	0.000
Manatee	0.069	0.069	0.069	0.069	0.069	0.069
Marion	0.000	0.000	0.000	0.000	0.000	0.000
Pasco	0.000	0.000	0.000	0.000	0.000	0.000
Pinellas	0.000	0.000	0.000	0.000	0.000	0.000
Polk*	0.918	0.918	0.918	0.918	0.918	0.918
Sarasota	0.010	0.010	0.010	0.010	0.010	0.010
Sumter	1.721	1.721	1.721	1.721	1.721	1.721
Grand Total	**5.785**	**5.785**	**5.785**	**5.785**	**5.785**	**5.785**

*Polk and Lake totals are based on FSAID 9 values as in the 2025 CFWI RWSP projections.

Table 6. *Total agriculture – irrigated crop water use projections (1-in-10 dry year water demands, mgd)*

County	2020 Baseline	Projected 2025	Projected 2030	Projected 2035	Projected 2040	Projected 2045
Charlotte	12.240	12.441	12.534	12.539	12.582	12.549
Citrus	2.156	2.146	2.145	2.156	2.156	2.162
DeSoto	78.394	80.269	80.850	80.385	79.898	79.192
Hardee	52.464	54.188	54.728	54.312	53.814	53.216
Hernando	2.133	2.118	2.123	2.124	2.127	2.124
Highlands	57.996	59.126	59.300	57.590	55.602	53.746
Hillsborough	52.465	50.833	49.968	47.969	46.519	44.862
Lake*	0.770	0.770	0.770	0.790	0.630	0.550
Levy	10.963	11.474	11.854	12.239	13.147	14.160
Manatee	65.937	66.139	66.277	65.789	65.635	65.498
Marion	3.932	3.890	3.643	3.527	3.433	3.434
Pasco	7.988	6.053	5.103	4.169	3.530	2.145
Pinellas	0.033	0.033	0.033	0.033	0.033	0.033
Polk*	94.080	95.400	98.120	97.070	95.870	94.620
Sarasota	3.982	4.017	4.028	4.031	4.041	4.041
Sumter	5.967	5.516	5.132	5.100	4.928	4.505
Grand Total	**451.499**	**454.414**	**456.607**	**449.824**	**443.946**	**436.837**

*Polk and Lake totals are based on FSAID 9 values as in the 2025 CFWI RWSP projections. Excludes Aquaculture and Livestock quantities.

Table 7. *Unadjusted FSAID 10 total agricultural – irrigated crop, aquaculture and livestock water use projections (5-in-10 water demands, mgd)*

County	2021	2025	2030	2035	2040	2045
Charlotte	11.94	12.14	12.24	12.25	12.26	12.26
Citrus	1.66	1.62	1.62	1.62	1.63	1.62
DeSoto	69.5	70.88	71.39	70.99	70.58	70.2
Hardee	49.02	50.1	50.48	50.08	49.68	49.11
Hernando	1.98	1.97	1.97	1.98	1.98	1.98
Highlands	30.07	30.44	30.5	29.67	28.7	27.72
Hillsborough	39.8	38.44	37.08	35.45	33.8	32.23
Lake*	0.56	0.56	0.57	0.57	0.57	0.54
Levy	11.55	11.82	12.11	12.48	13.16	13.78
Manatee	55.64	55.38	55.18	54.68	54	53.47
Marion	3.18	3.15	3.02	2.84	2.8	2.8
Pasco	2.94	2.53	2.08	1.78	1.48	1.14
Pinellas	0.00	0.00	0.00	0.00	0.00	0.00
Polk*	58.69	60.72	61.4	60.58	59.71	58.8
Sarasota	4.38	4.41	4.44	4.44	4.44	4.44
Sumter	6.39	6.24	6.06	5.88	5.68	5.57
Grand Total	**347.32**	**350.43**	**350.15**	**345.31**	**340.51**	**335.67**

*Unadjusted FSAID 9 Polk County totals are 63.58 mgd in 2020 and 63.78 mgd in 2045. Unadjusted FSAID 9 Lake County totals are 0.56 mgd in 2020 and 0.40 mgd in 2045.

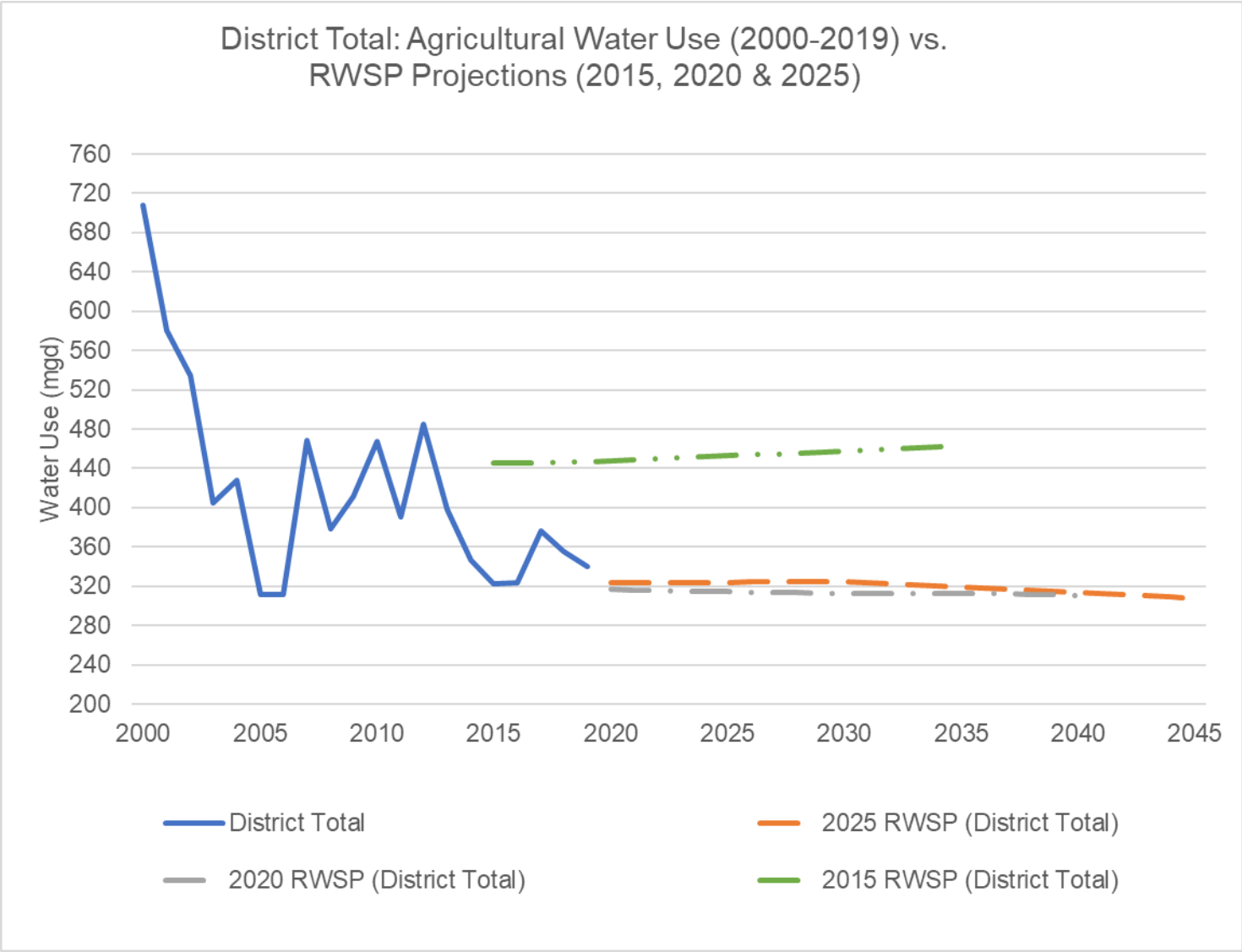

Figure 1. *Total agricultural – irrigated crop water use projections (5-in-10 water demands, mgd) and historical water use (2000 – 2021)*

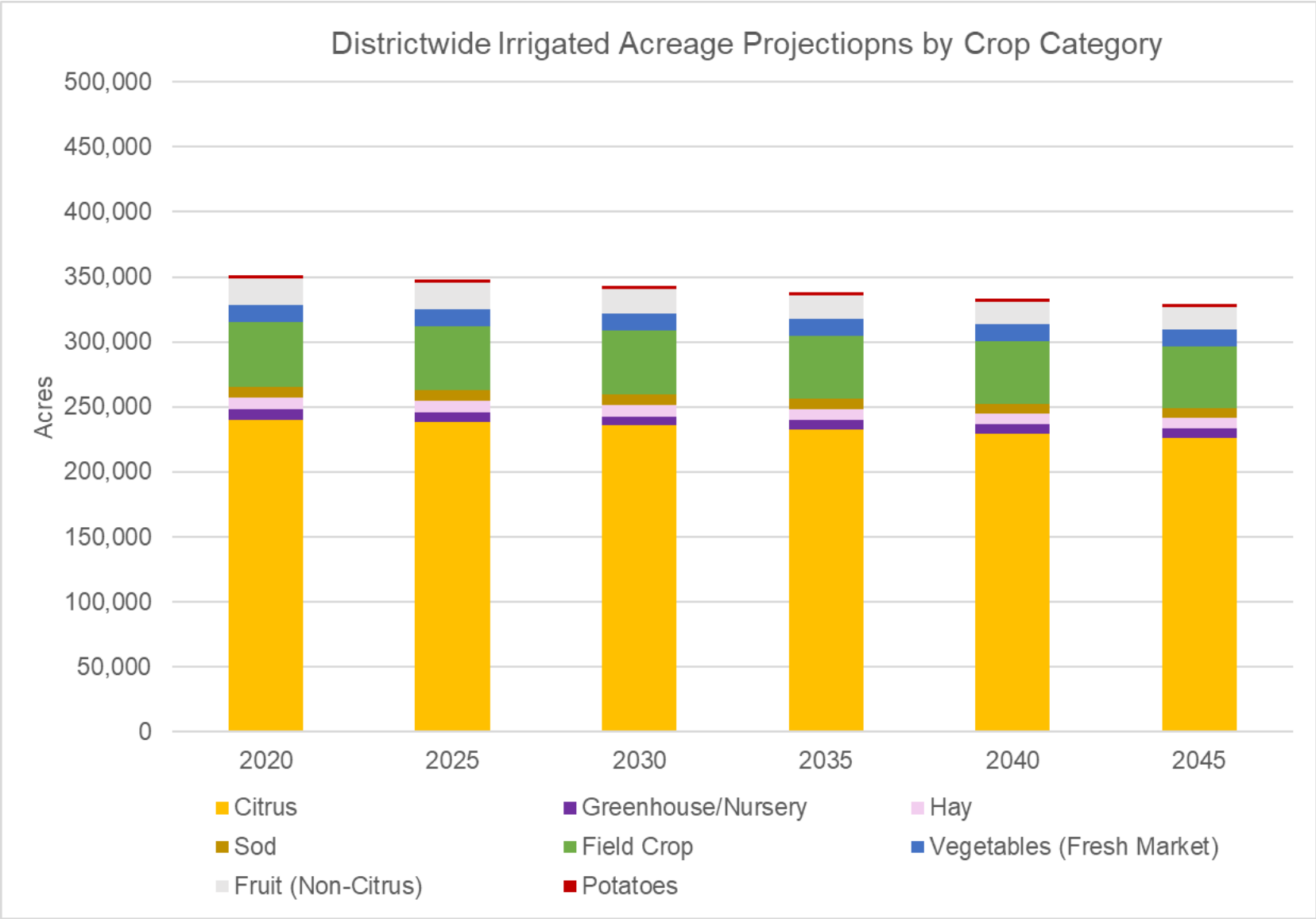

Figure 2. *Districtwide irrigated acreage projections by crop category*