2

Demand Estimates and Projections

This chapter summarizes the water demand estimates and projections for the Lower West Coast (LWC) Planning Area of the South Florida Water Management District (SFWMD or District) through the planning horizon (2020 to 2045). Estimates and projections are presented by water use category and were developed in coordination with various stakeholder groups, including agriculture, utilities, industry, local and tribal governments, and other interested parties. A detailed discussion of the data collection and analysis methodology is provided in **Appendix A**.

TOPICS

- Water Demand
- Water Use Categories
- Population Estimates and Projections
- Public Supply
- Domestic Self-Supply
- Agriculture
- Commercial/Industrial/ Institutional
- Landscape/Recreational
- Power Generation
- Summary of Demand Estimates
- Demand Projections in Perspective

Water demands in the LWC Planning Area are driven by agricultural irrigation, followed by irrigation for landscape and recreation, and then potable water use provided by utilities. Irrigated agricultural acreage and production are projected to remain relatively stable with a slight increase. Citrus and sugarcane continue to be the two largest commodities. Acreages of all crops are projected to have small increases with the exception of sugarcane, sod, and potatoes. Starting in early 2020, the COVID-19 pandemic has had significant impacts on the economy, particularly on businesses and tourism. However, residential development has expanded at a robust rate in Collier and Lee counties.

WATER DEMAND

Water demands can be described and analyzed in two ways: gross demand and net demand. Gross demand is the volume of water withdrawn or diverted from a groundwater or surface water source. This definition serves as the basis for water allocations established through water use permits issued by the SFWMD. Further information on water use permitting is provided in the *Support Document for the 2021-2024 Water Supply Plan Updates* (2021-2024 Support Document; SFWMD 2021). Net demand refers to the volume of water delivered to end users after accounting for treatment losses and delivery system inefficiencies. For Public Supply (PS) and Domestic Self-Supply (DSS), demands commonly are referred to as raw and finished demands rather than gross and net demands, respectively. In this *2022 Lower West Coast Water Supply Plan Update* (2022 LWC Plan Update), gross demand is equal to net demand for all water use categories except PS.

This 2022 LWC Plan Update presents demands for average rainfall and 1-in-10-year drought conditions (**Appendix A**). Section 373.709, Florida Statutes (F.S.), states the level-of-certainty planning goal associated with identifying water demands contained in water supply plans shall be based on meeting demands during 1-in-10-year drought conditions for at least a 20-year period. Although not quantified in this plan, environmental demands are addressed through resource protection criteria (**Chapter 4**).

INFO ⓘ

Average Rainfall and 1-in-10-Year Drought

An **average rainfall year** is defined as a year with a rainfall amount that has a 50% probability of being exceeded in any other year.

A **1-in-10-year drought** is defined as a year in which below normal rainfall occurs, with a 90% probability of being exceeded in any other year. It has an expected return frequency of once in 10 years.

WATER USE CATEGORIES

Water demands for this 2022 LWC Plan Update are estimated in 5-year increments for the six water use categories listed below, which were established by the Florida Department of Environmental Protection (FDEP) in coordination with the state's water management districts. The water use category names and acronyms have been updated for this plan to align with other water supply planning efforts across the state.

- **Public Supply (PS)** – Potable water supplied by water treatment plants with a current allocation of 0.10 million gallons per day (mgd) or greater.
- **Domestic Self-Supply (DSS)** – Potable water used by households served by small utilities (less than 0.10 mgd) or self-supplied by private wells.
- **Agriculture (AG)** – Self-supplied water used for commercial crop irrigation, greenhouses, nurseries, livestock watering, pasture irrigation, and aquaculture.
- **Commercial/Industrial/Institutional (CII)** – Self-supplied water associated with the production of goods or provision of services by commercial, industrial, or institutional establishments.

- **Landscape/Recreational (L/R)** – Self-supplied and reclaimed water used to irrigate golf courses, sports fields, parks, cemeteries, and large common areas such as land managed by homeowners' associations and commercial developments.
- **Power Generation (PG)** – Self-supplied and reclaimed water used for cooling, potable, and process water by power generation facilities.

Table 2-1 presents estimated (2020) and projected (2045) average gross water demands, by water use category, in the LWC Planning Area for this water supply plan update. AG accounts for the majority of current and projected demands, followed by PS, L/R, CII, DSS, and PG. An overall increase in total demand is projected through the planning horizon.

Table 2-1. Estimated (2020) and projected (2045) average gross water demands (in mgd) for the LWC Planning Area, by use category.

Water Use Category	2020	2045
Public Supply	138.46	186.04
Domestic Self-Supply	24.55	33.98
Agriculture	592.02	621.40
Commercial/Industrial/Institutional	37.73	48.23
Landscape/Recreational	219.17	268.04
Power Generation	1.54	2.03
LWC Planning Area Total	**1,013.47**	**1,159.72**

LWC = Lower West Coast; mgd = million gallons per day.

POPULATION ESTIMATES AND PROJECTIONS

Population estimates and projections were used to develop demands for all water use categories except AG and PG. Developing population estimates and projections required multiple sources of information, including county-level data from the University of Florida's Bureau of Economic and Business Research (BEBR; Rayer and Wang 2021), consistent with Section 373.709(2)(a), F.S., data from the 2020 Decennial Census (United States Census Bureau 2020), and data from local government Comprehensive Plans. **Appendix A** provides further details on the development of population estimates and projections. Draft results were presented to the region's larger PS utilities to ensure accuracy and obtain agreement with final 2045 population projections in the plan update.

NOTE

All population estimates and projections are for permanent residents, as defined by the United States Census Bureau. However, the per capita use rate, which is used to calculate water demands, reflects use by seasonal residents as well.

In 2020, the estimated population within the LWC Planning Area was 1,188,599 permanent residents (**Table 2-2**). BEBR projections indicate the LWC Planning Area population will grow to 1,617,071 permanent residents in 2045, an increase of approximately 36%. Nearly two-thirds of the LWC Planning Area population resides in Lee County, while Collier County accounts for approximately one-third, and this trend is expected to continue. As explained in **Appendix A**, BEBR medium projections were used for all counties to develop detailed population projections for PS utilities and county DSS areas (Rayer and Wang 2021).

Table 2-2. Permanent resident population served by PS and DSS in the LWC Planning Area in 2020 and 2045.

County	2020 Population			2045 Population		
	PS	DSS	**Total**	PS	DSS	**Total**
Charlotte*	2,506	3,131	**5,637**	2,875	4,400	**7,275**
Collier[1]	313,797	73,653	**387,450**	415,201	103,799	**519,000**
Glades*	4,906	4,484	**9,390**	5,942	5,029	**10,971**
Hendry*	27,551	8,078	**35,629**	28,934	12,391	**41,325**
Lee	645,114	105,379	**750,493**	894,720	143,780	**1,038,500**
LWC Planning Area Total	**993,874**	**194,725**	**1,188,599**	**1,346,672**	**269,399**	**1,617,071**

DSS = Domestic Self-Supply; LWC = Lower West Coast; PS = Public Supply.

* Values listed are only for the area within the LWC Planning Area boundary.

[1] The Seminole Tribe of Florida is a sovereign Indian Tribe and an independent Tribal Government separate from Collier County. However, for discussion purposes, information relating to the Seminole Tribe of Florida Immokalee Reservation is included in the calculations for Collier County.

PUBLIC SUPPLY

The PS category includes potable water supplied by water treatment plants with a current allocation of 0.10 mgd or greater and is the third largest water use category in the LWC Planning Area. Developing PS demand projections was a multistep process that included updating PS utility service areas and estimating DSS populations, calculating per capita use rates (PCURs), and projecting future water needs.

NOTE

Perceived discrepancies in table totals are due to rounding.

Per Capita Use Rates

For each PS utility, a net (finished) water PCUR was developed using past population estimates and finished water data reported to the FDEP. The PCUR for each utility is a 5-year (2016 through 2020) average, calculated by dividing annual net (finished) water volume by the corresponding service area population for each year. For PS demand projections, PCURs were assumed to remain constant through 2045. To calculate projected gross (raw) demands, the treatment efficiency for each utility, based on treatment process type(s) expected in 2045, was applied as a raw-to-finished ratio. Any demand reductions due to historical conservation practices were implicitly factored into the projections by using the 5-year average PCUR. Future water conservation savings (**Chapter 3**) were not factored into the demand projections used in this plan update due to water savings uncertainties. PS service area and water treatment plant maps are provided in **Appendix A**. Utility profiles containing population and finished water use data and projections as well as permitted allocations are provided in **Appendix B**.

PS Demand Estimates and Projections

Tables 2-3 and **2-4** present PS gross (raw) and net (finished) water demands, respectively, in 5-year increments by county. The results indicate PS gross (raw) water demands will increase approximately 34%, from 138.46 mgd in 2020 to 186.04 mgd in 2045 under average rainfall conditions. Calculation of 1-in-10-year demand increase is based only on the outdoor portion of PS use, and the methodology is explained in **Appendix A**.

Table 2-3. PS gross (raw) water demands in the LWC Planning Area, by county.

County	Gross (Raw) Demand – Average Rainfall Conditions (mgd)						2045 1-in-10-Year Demand
	2020	2025	2030	2035	2040	2045	
Charlotte*	0.25	0.26	0.27	0.28	0.29	0.30	0.31
Collier[1]	58.50	62.73	66.84	70.60	73.90	76.85	82.63
Glades*	0.82	0.87	0.91	0.94	0.97	0.99	1.05
Hendry*	3.67	3.78	3.82	3.85	3.87	3.89	4.13
Lee	75.22	81.17	87.38	91.91	96.73	104.00	109.20
LWC Planning Area Total	**138.46**	**148.81**	**159.22**	**167.58**	**175.78**	**186.04**	**197.32**

LWC = Lower West Coast; mgd = million gallons per day; PS = Public Supply.
* Values listed are only for the area within the LWC Planning Area boundary.
[1] The Seminole Tribe of Florida is a sovereign Indian Tribe and an independent Tribal Government separate from Collier County. However, for discussion purposes, information relating to the Seminole Tribe of Florida Immokalee Reservation is included in the calculations for Collier County.

Table 2-4. PS net (finished) water demands in the LWC Planning Area, by county.

County	Net (Finished) Demand – Average Rainfall Conditions (mgd)						2045 1-in-10-Year Demand
	2020	2025	2030	2035	2040	2045	
Charlotte*	0.21	0.22	0.23	0.24	0.25	0.25	0.26
Collier[1]	52.27	56.00	59.68	63.03	65.97	68.60	74.08
Glades*	0.69	0.72	0.76	0.78	0.81	0.83	0.88
Hendry*	2.62	2.70	2.73	2.75	2.77	2.79	2.96
Lee	65.08	70.40	75.88	79.86	84.04	90.42	94.95
LWC Planning Area Total	**120.87**	**130.05**	**139.28**	**146.66**	**153.84**	**162.89**	**173.13**

LWC = Lower West Coast; mgd = million gallons per day; PS = Public Supply.
* Values listed are only for the area within the LWC Planning Area boundary.
[1] The Seminole Tribe of Florida is a sovereign Indian Tribe and an independent Tribal Government separate from Collier County. However, for discussion purposes, information relating to the Seminole Tribe of Florida Immokalee Reservation is included in the calculations for Collier County.

DOMESTIC SELF-SUPPLY

The DSS category includes potable water used by households that are served by small utilities with current allocations less than 0.10 mgd or that are self-supplied by private wells. Permanent resident populations within DSS areas were developed simultaneously with the PS population estimates and projections. All permanent residents outside of PS utility service area boundaries were considered DSS population. Population projection methodology and results are further described in **Appendix A**.

Table 2-5 contains the LWC Planning Area's DSS demand estimates and projections under average rainfall conditions. The average PCUR of PS utilities in the county were used to calculate demands. For DSS demands, the raw to finished water ratio is assumed to be 1.00. Therefore, no distinction is made between gross (raw) and net (finished) water demands. Average DSS demands in 2020 were 24.55 mgd for 194,735 permanent residents (**Table 2-2**). DSS demands are expected to increase 38%, to 33.98 mgd for 269,399 residents in 2045. This increase can be attributed to high anticipated growth in DSS areas without expansion of PS utility service within those areas.

Table 2-5. DSS gross (raw) water demands in the LWC Planning Area, by county.

County	Gross (Raw) Demand – Average Rainfall Conditions (mgd)						2045 1-in-10-Year Demand
	2020	2025	2030	2035	2040	2045	
Charlotte*	0.27	0.30	0.32	0.34	0.36	0.37	0.39
Collier[1]	12.23	14.11	15.15	15.91	16.58	17.23	18.61
Glades*	0.61	0.64	0.66	0.67	0.68	0.69	0.73
Hendry*	0.80	0.88	0.97	1.05	1.11	1.17	1.24
Lee	10.64	13.14	13.81	15.09	15.38	14.52	15.25
LWC Planning Area Total	**24.55**	**29.06**	**30.91**	**33.06**	**34.10**	**33.98**	**36.22**

DSS = Domestic Self-Supply; LWC = Lower West Coast; mgd = million gallons per day.

* Values listed are only for the area within the LWC Planning Area boundary.

[1] The Seminole Tribe of Florida is a sovereign Indian Tribe and an independent Tribal Government separate from Collier County. However, for discussion purposes, information relating to the Seminole Tribe of Florida Immokalee Reservation is included in the calculations for Collier County.

AGRICULTURE

The AG category includes self-supplied water used for commercial crop irrigation, greenhouses, nurseries, livestock watering, pasture irrigation, and aquaculture. AG is the largest water use category in the LWC Planning Area, accounting for over 60% of the region's total estimated water demand in 2020. Agricultural production in the LWC Planning Area is of regional significance, with 291,765 acres under irrigation (**Figure 2-1**).

Agricultural acreage data published by the Florida Department of Agriculture and Consumer Services (FDACS 2021) were used to determine water demands for this 2022 LWC Plan Update. Pursuant to Section 373.709(2)(a), F.S., water management districts are required to consider FDACS water demand projections. Any adjustments or deviations from the projections published by FDACS, "…must be fully described, and the original data must be presented along with the adjusted data." A detailed description of the analyses and adjustments is provided in **Appendix A**.

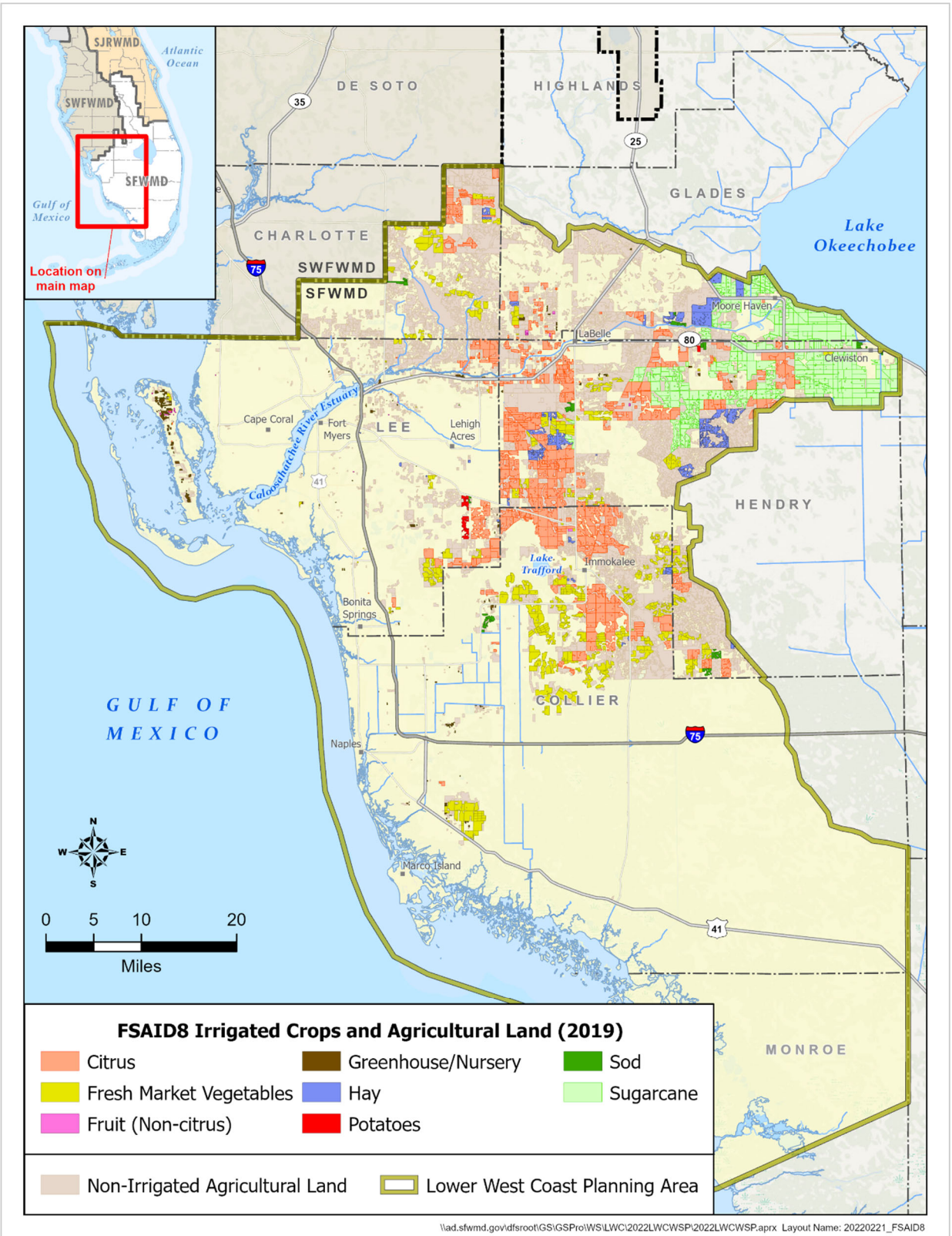

Figure 2-1. Agricultural irrigated land in the LWC Planning Area (Data from FDACS 2021).

Agricultural water demand was determined using the Agricultural Field-Scale Irrigation Requirements Simulation (AFSIRS) model (Smajstrla 1990). No distinction was made between gross and net water demands. The FDACS irrigated crop acres, soil types, growing seasons, and irrigation methods were used as input data for the AFSIRS model. AG demand estimates and projections are based on the commercially grown crop categories in **Table 2-6**, as generally developed by the FDEP and water management districts for use in water supply plans. Citrus and sugarcane are the predominant irrigated crops in the LWC Planning Area, currently encompassing 206,687 acres. Together, these two crop types account for more than half of the irrigated acreage and demand under average rainfall conditions. Irrigated fresh market vegetables, hay, greenhouse/nurseries, and sod are the next largest AG crop categories, with a combined 83,042 acres.

Table 2-6. AG irrigated acres and gross water demands (in mgd) in the LWC Planning Area, by crop type.

Crop	2020			2045		
	Acres	Average Demand	1-in-10-Year Demand	Acres	Average Demand	1-in-10-Year Demand
Citrus	118,047	189.07	236.69	124,820	198.45	244.72
Sugarcane	88,640	224.19	236.79	86,706	219.22	247.17
Fresh Market Vegetables	60,251	122.06	143.24	62,961	128.83	150.87
Hay/Pasture	16,223	34.03	40.53	16,806	35.34	41.84
Greenhouse/Nursery	3,239	7.86	8.54	5,239	12.76	16.37
Sod	3,328	9.20	11.29	3,287	8.99	11.08
Potatoes	1,279	2.73	3.18	1,199	2.43	2.88
Field Crops	188	0.50	0.89	4,244	10.96	11.03
Fruits (Non-Citrus)	570	0.81	1.81	1,800	2.85	3.89
Total	**291,765**	**590.45**	**693.06**	**307,062**	**619.83**	**729.85**

LWC = Lower West Coast; mgd = million gallons per day.

Total irrigated acres in the LWC Planning Area are projected to increase 5% by 2045. The majority of crops are projected to increase in acreage over the planning horizon, except for sugarcane, sod, and potatoes. The largest change in irrigated acreage and demand is expected to occur in the citrus industry. By 2045, sugarcane is expected to decrease by 1,934 acres, and average demands are projected to decrease by 4.97 mgd.

Gross AG demands under average rainfall conditions in the LWC Planning Area are projected to increase from 592.02 mgd in 2020 to 621.40 mgd in 2045 (**Table 2-7**). These totals include demands from livestock and aquaculture in addition to the demands for crop irrigation shown in **Table 2-6**. Demands for livestock and aquaculture in the LWC Planning Area in 2020 are estimated to be 1.13 mgd and 0.44 mgd, respectively, with demands remaining constant over the planning horizon.

INFO ⓘ

Examples of crop categories used in this report include the following:

Fresh Market Vegetables:
- Tomatoes
- Green beans
- Peppers
- Melons

Fruits (Non-Citrus):
- Mangoes
- Strawberries
- Blueberries
- Grapes

Field Crops:
- Corn
- Corn silage

Table 2-7. AG gross water demands for all agricultural acreage, livestock, and aquaculture in the LWC Planning Area, by county.

County	Gross Demand– Average Rainfall Conditions (mgd)						2045 1-in-10-Year Demand
	2020	2025	2030	2035	2040	2045	
Charlotte*	31.88	31.88	32.06	32.48	32.75	33.07	39.68
Collier	133.13	131.33	130.57	128.66	127.95	126.39	150.46
Glades*	98.95	95.87	100.14	107.75	113.97	120.49	141.88
Hendry*	294.54	295.40	296.18	299.36	304.14	311.02	360.25
Lee	33.52	33.14	32.76	32.18	31.23	30.43	39.16
LWC Planning Area Total	**592.02**	**587.62**	**591.72**	**600.44**	**610.04**	**621.40**	**731.42**

AG = Agriculture; LWC = Lower West Coast; mgd = million gallons per day.
* Values listed are only for the area within the LWC Planning Area boundary.

COMMERCIAL/INDUSTRIAL/INSTITUTIONAL

The CII water use category includes water demands associated with commercial and industrial operations for processing, manufacturing, and technical needs such as concrete, citrus processing, and mining operations. CII demands only include self-supplied users and do not include commercial or industrial users that receive water from PS utilities; those users are included in the PS category. All CII demand estimates and projections are presumed to be the same for average rainfall and 1-in-10-year drought conditions, and withdrawal demand is assumed to be equal to user demand. Therefore, no distinction is made between gross and net water demands. Growth within the CII category is expected to be driven by regional population growth. Estimated CII demands for 2020 were 37.73 mgd, with projected growth resulting in demands of 48.23 mgd in 2045 (**Table 2-8**).

Table 2-8. CII gross water demands in the LWC Planning Area, by county.

County	Gross Demand (mgd)					
	2020	2025	2030	2035	2040	2045
Charlotte*	0.07	0.08	0.08	0.09	0.09	0.09
Collier	7.52	8.19	8.76	9.29	9.75	10.14
Glades*	13.76	14.45	15.03	15.48	15.94	16.26
Hendry*	4.59	4.82	5.02	5.17	5.27	5.38
Lee	11.79	13.09	14.14	14.98	15.73	16.36
LWC Planning Area Total	**37.73**	**40.63**	**43.03**	**45.01**	**46.78**	**48.23**

CII = Commercial/Industrial/Institutional; LWC = Lower West Coast; mgd = million gallons per day.
* Values listed are only for the area within the LWC Planning Area boundary.

LANDSCAPE/RECREATIONAL

L/R is the second largest water use category in the LWC Planning Area, encompassing irrigation of golf courses and other landscaped areas such as parks, sports fields, and common areas of residential developments. L/R demands are met with the use of groundwater, surface water, and reclaimed water. L/R acreages reflect only the acres under water use permits and do not include acres irrigated solely with reclaimed water that do not have a water use permit

for a supplemental or back-up supply. Details regarding development of the L/R demands are provided in **Appendix A**.

Within the L/R category, 22,476 permitted acres were attributed to landscape irrigation. These landscaped areas are expected to grow 35% to 30,378 acres by 2045, which is approximately the same growth rate as the local population through 2045. In 2020, there were 128 golf courses irrigating 13,367 acres under water use permits in the LWC Planning Area (SFWMD 2022), and this is projected to decrease by 197 acres by 2045.

Under average rainfall conditions, total estimated L/R gross water demands are projected to increase from 219.17 mgd in 2020 to 268.04 mgd in 2045 (**Table 2-9**). Groundwater and surface water supply sources met approximately 64% of the 2020 L/R water demands, with reclaimed water supplementing the remaining 36%. The ratio of reclaimed water to groundwater/surface water used to meet future landscape demands is assumed to remain constant. Golf course acreage is projected to remain relatively stable over the planning period and, as a result, water demand for golf is held relatively constant over the planning horizon, with a slight increase in Charlotte County and a slight decrease in Collier County. See **Chapter 5** for a discussion of reclaimed water as an alternative water supply source.

Table 2-9. L/R gross irrigation demands under average rainfall conditions in the LWC Planning Area (including reclaimed water).

Land Use	Demand – Average Rainfall Conditions (mgd)						2045 1-in-10-Year Demand
	2020	2025	2030	2035	2040	2045	
Charlotte County*							
Landscape	2.24	2.39	2.51	2.62	2.71	2.80	3.53
Golf	0.44	0.44	0.49	0.49	0.49	0.49	0.64
Charlotte County Total	**2.68**	**2.83**	**3.00**	**3.11**	**3.20**	**3.29**	**4.17**
Collier County							
Landscape	44.34	46.66	48.61	51.01	52.59	53.92	67.94
Golf	40.46	40.46	40.46	39.86	39.86	39.86	51.82
Collier County Total	**84.80**	**87.12**	**89.07**	**90.87**	**92.45**	**93.78**	**119.76**
Glades County*							
Landscape	0.13	0.14	0.15	0.15	0.15	0.15	0.19
Golf	0.05	0.05	0.05	0.05	0.05	0.05	0.07
Glades County Total	**0.18**	**0.19**	**0.20**	**0.20**	**0.20**	**0.20**	**0.25**
Hendry County*							
Landscape	0.64	0.67	0.70	0.72	0.73	0.74	0.93
Golf	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hendry County Total	**0.64**	**0.67**	**0.70**	**0.72**	**0.73**	**0.74**	**0.93**
Lee County							
Landscape	100.75	112.55	120.87	128.13	134.53	139.91	176.29
Golf	30.12	30.12	30.12	30.12	30.12	30.12	39.16
Lee County Total	**130.87**	**142.67**	**150.99**	**158.25**	**164.65**	**170.03**	**215.44**
LWC Planning Area							
Landscape	148.10	162.41	172.84	182.63	190.71	197.52	248.88
Golf	71.07	71.07	71.12	70.52	70.52	70.52	91.68
LWC Planning Area Total	**219.17**	**233.48**	**243.96**	**253.15**	**261.23**	**268.04**	**340.55**

L/R = Landscape Recreational; LWC = Lower West Coast; mgd = million gallons per day.
* Values listed are only for the area within the LWC Planning Area boundary.

POWER GENERATION

Demands under the PG category include use of groundwater, fresh surface water, or reclaimed water by thermoelectric power generation facilities. PG demands do not include the use of brackish surface water and cooling water returned to its withdrawal source, or seawater. Demands under average rainfall and 1-in-10-year drought conditions are assumed to be equal in the PG category; no distinction is made between gross and net water demands.

There are two power generation plants currently operating in the LWC Planning Area that are addressed in this plan update: Florida Power & Light (FPL) Fort Myers facility and the Lee County Solid Waste Energy Recovery Facility. In addition, FPL continues to expand its solar facilities throughout the LWC Planning Area; however, these facilities are photovoltaic systems and do not use water.

The FPL Fort Myers facility mainly uses brackish surface water from the Caloosahatchee River Estuary for its cooling tower technology as a one-time pass-through and is returned to the river. As a result, this is not considered as part of the demands, only the groundwater portion is considered. Groundwater is used for make-up water for steam generators, inlet spray coolers, and other industrial uses. For the planning period 2020 to 2045, the FPL Fort Myers facility is estimated to have a constant PG demand of 0.53 mgd. This demand is based on the average daily use in 2020 from groundwater sources.

The Lee County Solid Waste Energy Recovery Facility relies entirely on reclaimed water provided by the City of Fort Myers and is anticipated to continue relying on reclaimed water through the planning horizon. In 2020, 1.01 mgd of reclaimed water was supplied to this facility and demands are anticipated to increase to 1.50 mgd by 2045. PG demands are expected to increase slightly from 2020 to 2045 (**Table 2-10**). More information on the development of PG estimates and projections is provided in **Appendix A**.

Table 2-10. Average gross water demands for PG in the LWC Planning Area between 2020 and 2045.

Facilities	Gross Water Demand (mgd)					
	2020	2025	2030	2035	2040	2045
FPL – Fort Myers	0.53	0.53	0.53	0.53	0.53	0.53
Lee County Solid Waste	1.01	1.08	1.16	1.50	1.50	1.50
LWC Planning Area Total	**1.54**	**1.61**	**1.69**	**2.03**	**2.03**	**2.03**

LWC = Lower West Coast; mgd = million gallons per day; PG = Power Generation.

SUMMARY OF DEMAND ESTIMATES

Total gross water demands under average rainfall conditions in the LWC Planning Area are projected to be 1,159.72 mgd by 2045, a 14% increase from 2020 demands (1,013.47 mgd). Demands under 1-in-10-year drought conditions are approximately 16% higher than those for average rainfall conditions in 2045.

Table 2-11 provides 5-year incremental summaries of gross demands for all water use categories in the LWC Planning Area under average rainfall and 1-in-10-year drought conditions. Gross demands under average rainfall conditions are used to demonstrate projected trends, including the following key highlights:

- PS and DSS gross demands combined are expected to increase 35%, from 163.01 mgd in 2020 to 220.02 mgd in 2045. PS will remain the third largest water use category in the LWC Planning Area.
- AG gross demands are projected to increase modestly from 592.02 mgd in 2020 to 621.40 mgd in 2045. AG will remain the largest water use category in the LWC Planning Area.
- CII gross demands are projected to increase 10.50 mgd over the planning period. The projected demand growth is related to regional population growth.
- L/R gross demands are projected to increase by 48.87 mgd by 2045. L/R will remain the second largest water use category in the LWC Planning Area.
- PG gross demands are projected to experience a slight increase over the planning period with 2.03 mgd expected in 2045.

Table 2-11. Summary of gross water demands under average rainfall and 1-in-10-year drought conditions in the LWC Planning Area, by water use category.

Water Use Category	2020	2025	2030	2035	2040	2045
Demand – Average Rainfall Conditions (mgd)						
PS	138.46	148.81	159.22	167.58	175.78	186.04
DSS	24.55	29.06	30.91	33.06	34.10	33.98
AG	592.02	587.62	591.72	600.44	610.05	621.40
CII	37.73	40.63	43.03	45.01	46.78	48.23
L/R	219.17	233.48	243.96	253.15	261.23	268.04
PG	1.54	1.61	1.69	2.03	2.03	2.03
Total	**1,013.47**	**1,041.21**	**1,070.53**	**1,101.27**	**1,129.97**	**1,159.72**
Demand – 1-in-10-Year Drought Conditions (mgd)						
PS	146.97	157.92	168.94	177.81	186.49	197.32
DSS	26.16	30.95	32.92	35.20	36.32	36.22
AG	700.18	694.63	701.90	714.11	723.30	731.42
CII	37.73	40.63	43.03	45.01	46.78	48.23
L/R	279.00	297.03	310.23	321.79	331.97	340.55
PG	1.54	1.61	1.69	2.03	2.03	2.03
Total	**1,191.58**	**1,222.77**	**1,258.71**	**1,295.95**	**1,326.89**	**1,355.77**

AG = Agriculture; CII = Commercial/Industrial/Institutional; DSS = Domestic Self-Supply; L/R = Landscape Recreational; LWC = Lower West Coast; mgd = million gallons per day; PG = Power Generation; PS = Public Supply.

DEMAND PROJECTIONS IN PERSPECTIVE

Demand projections presented in this 2022 LWC Plan Update are based on the best available information. **Table 2-12** shows the 2040 average gross demands projected in the previous 2017 LWC Plan Update compared to the 2045 demands projected in this 2022 LWC Plan Update. The projections reflect trends, economic circumstances, and industry intentions that change over time, including a revised methodology of projection computations. Like any predictive tool based on past assumptions, there is uncertainty and a margin for error. The total demand projection for 2045 in this 2022 LWC Plan Update is 4% lower than the estimated 2040 demand projected in the 2017 LWC Plan Update.

Table 2-12. Comparison of gross water demands under average rainfall conditions at the end of respective planning horizons in the 2017 LWC Plan Update and this 2022 LWC Plan Update.

Water Use Category	2017 LWC Plan Update 2040 Demand (mgd)	2022 LWC Plan Update 2045 Demand (mgd)	Percent Difference
Public Supply	199.88	186.04	-7%
Domestic Self-Supply	33.18	33.98	2%
Agriculture	678.83	621.40	-8%
Commercial/Industrial/Institutional	29.07	48.23	66%
Landscape/Recreational	254.32	268.04	5%
Power Generation	15.40	2.03	-86%
Total	**1,210.68**	**1,159.72**	**-4%**

LWC = Lower West Coast; mgd = million gallons per day.

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