Sponsored by: Williams

CITY OF MARATHON, FLORIDA
RESOLUTION 2026-48

A RESOLUTION OF THE CITY COUNCIL OF MARATHON, FLORIDA, ADOPTING THE CITY OF MARATHON 10-YEAR WATER SUPPLY FACILITIES WORK PLAN; PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, the City of Marathon has adopted and maintains a Water Supply Facilities Work Plan (the "Work Plan") to identify and plan for the water supply sources and facilities needed to serve existing and new development within Marathon's jurisdiction; and

WHEREAS, Chapter 163, Part II, F.S., requires local governments to prepare and adopt Work Plans into their comprehensive plans within 18 months after the water management district approves a regional water supply plan or its update; and

WHEREAS, the Lower East Coast Water Supply Plan Update was approved by the South Florida Water Management District (SFWMD) Board of Governors on September 4, 2024; and

WHEREAS, The City of Marathon's Work Plan references the data, projected supply and demand numbers, conservation initiatives and capital improvements already identified in the FKAA 20-Year Water System Capital Improvement Master Plan (the "Master Plan") since Marathon is a retail buyer and the FKAA is the sole provider of water to the City; and

WHEREAS, According to state guidelines, the Work Plan and the comprehensive plan amendments must address the development of traditional and alternative water supplies, bulk sales agreements, conservation and reuse programs and concurrency issues that are necessary to serve existing and new development for at least a 10-year planning period; and

WHEREAS, the amended Marathon Work Plan addresses a 10-year planning period and identifies projects from the FKAA Work Plan consistent with this planning period; and

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF MARATHON, FLORIDA, that:

Section 1. The above recitals are true and correct and are incorporated herein.

Section 2. The City of Marathon 10-Year Water Supply Facilities Work Plan is

hereby adopted.

Section 3. This resolution shall take effect immediately upon its adoption.

PASSED AND APPROVED BY THE CITY COUNCIL OF THE CITY OF MARATHON, FLORIDA, THIS 9TH DAY OF JUNE, 2026.

THE CITY OF MARATHON, FLORIDA

_____
Lynny Del Gaizo, Mayor

AYES:
NOES:
ABSENT:
ABSTAIN:

ATTEST:

_____
Diane Clavier
City Clerk

(City Seal)

APPROVED AS TO FORM AND LEGALITY FOR THE USE AND RELIANCE OF THE CITY OF MARATHON, FLORIDA ONLY:

_____
Steve Williams, City Attorney

CITY OF MARATHON, FLORIDA

10-YEAR WATER SUPPLY FACILITIES WORK PLAN

Prepared By:

City of Marathon Planning Department

~~**March 2024**~~ **June 2026**

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1.0 INTRODUCTION

The purpose of the City of Marathon Water Supply Facilities Work Plan (the "Work Plan") is to identify and plan for the water supply sources and facilities needed to serve existing and new development within Marathon's jurisdiction. Chapter 163, Part II, F.S., requires local governments to prepare and adopt Work Plans into their comprehensive plans within 18 months after the water management district approves a regional water supply plan or its update. The *Lower East Coast Water Supply Plan Update* was approved by the South Florida Water Management District (SFWMD) Board of Governors on September 4, 2024 ~~November 8, 2018~~.

Residents of the City of Marathon obtain their water directly from the Florida Keys Aqueduct Authority (FKAA), which is responsible for ensuring that enough capacity is available for existing and future customers.

The City of Marathon's Work Plan will reference the data, projected supply and demand numbers, conservation initiatives and capital improvements already identified in the FKAA 20-Year Water System Capital Improvement Master Plan (the "Master Plan") since Marathon is a retail buyer and the FKAA is the sole provider of water to the City. According to state guidelines, the Work Plan and the comprehensive plan amendments must address the development of traditional and alternative water supplies, bulk sales agreements, conservation and reuse programs and concurrency issues that are necessary to serve existing and new development for at least a 10-year planning period. The Marathon Work Plan will address a 10-year planning period and identify projects from the FKAA Work Plan consistent with this planning period.

The City's Work Plan is divided into six sections:

Section 1 – Introduction
Section 2 – Background Information
Section 3 – Data and Analysis
Section 4 – Work Plan Projects/Capital Improvement Element/Schedule (FKAA)
Section 5 – Goals, Objectives, and Policies
Section 6 – Regional Issues Identified in Regional Water Supply Plans

1.1 Statutory History

The Florida Legislature has enacted bills in the 2002, 2004, 2005, 2011, 2012, 2015, and 2016 sessions to address the state's water supply needs. These bills, especially Senate Bills 360 and 444 (2005 legislative session), significantly changed Chapter 163 and 373 Florida Statutes (F.S.) by strengthening the statutory links between the regional water supply plans prepared by the water management districts and the comprehensive plans prepared by local governments. In addition, these bills established the basis for improving coordination between the local land

use planning and water supply planning.

1.2 Statutory Requirements

Each local government must comply with the following requirements:

1. Coordinate appropriate aspects of its comprehensive plan with the SFWMD's *Lower East Coast Water Supply Plan, [163.3177(4)(a),* F.S.]
2. Ensure that the Comprehensive Plan is based upon availability of adequate water supplies and public facilities and services [s.163.3177(6)(a), F.S., effective July 1, 2005]. Data and analysis demonstrating that adequate water supplies and associated public facilities will be available to meet projected growth demands must accompany all proposed Future Land Use Map amendments submitted to the Department for review. The submitted package must also include an amendment to the Capital Improvements Element, if necessary, to demonstrate that adequate public facilities will be available to serve the proposed Future Land Use Map modification.
3. Ensure that adequate water supplies and facilities are available to serve new development no later than the date on which the City of Marathon anticipates issuing a certificate of occupancy and consult with the applicable water supplier prior to approving building permits, to determine whether adequate water supplies will be available to serve the development by the anticipated issuance date of the certificate of occupancy [s.163.3180 (2)(a), F.S., effective July 1, 2005].
4. For local governments subject to a regional water supply plan, revise the General Sanitary Sewer, Solid Waste, Drainage, Potable Water, and Natural Groundwater Aquifer Recharge Element (the "Infrastructure Element"), within 18 months after the water management district approves an updated regional water supply plan, to:
    a. Identify and incorporate the alternative water supply project(s) selected by the local government from projects identified in the updated regional water supply plan, or the alternative project proposed by the local government under s. 373.0361(7), F.S. [s. 163.3177(6)(c), F.S.];
    b. Identify the traditional and alternative water supply projects, bulk sales agreements, and the conservation and reuse programs necessary to meet current and future water use demands within the local government's jurisdiction [s. 163.3177(6)(c), F.S.]; and
    c. Include a water supply facility work plan for at least a 10-year planning period for constructing the public, private, and regional water supply facilities identified in the element as necessary to serve existing and new development. [s. 163.3177(6)(c), F.S.] Amendments to incorporate the water supply facilities work plan into the comprehensive plan are exempt from the twice-a-year amendment limitation. [s. 163.3177(6)(c), F.S.]

5. Revise the Five-Year Schedule of Capital Improvements to include any water supply, reuse, and conservation projects and programs to be implemented during the five-year period.
6. To the extent necessary to maintain internal consistency after making changes described in Paragraph 1 through 5 above, revise the Conservation Element to assess projected water needs and sources for at least a 10-year planning period, considering the SFWMD's *Lower East Coast Water Supply Plan,* as well as the Florida Keys Aqueduct Authority's consumptive use permit. [s.163.3177 (6)(d), F.S.]

   If the established planning period of a comprehensive plan is greater than ten years, the plan must address the water supply sources necessary to meet and achieve the existing and projected water use demand for established planning period, considering the appropriate regional water supply plan. [s.163.3167 (13), F.S.]
7. To the extent necessary to maintain internal consistency after making changes described in Paragraphs 1 through 5 above, revise the Intergovernmental Coordination Element to ensure coordination of the comprehensive plan with applicable regional water supply plans and regional water supply authorities' plans. [s.163.3177(6)(h)1., F.S.]
8. Address in the Evaluation and Appraisal Report the extent to which the local government has implemented the 10-year water supply facilities work plan, including the development of alternative water supplies, and determine whether the identified alternative water supply projects, traditional water supply projects, bulk sales agreements, and conservation and reuse programs are meeting local water use demands. [s.163.3191 (2)(1), F.S.]

2.0 BACKGROUND INFORMATION

2.1 Overview

The City of Marathon was incorporated in 1999, making it the fifth municipality established in Monroe County. The islands of Marathon are Boot Key, Knight Key, Hog Key, Vaca Key, Stirrup Key, Crawl and Little Crawl Key, East and West Sister's Island, Deer Key and Fat Deer Key, Long Point Key and Grassy Key. The current permanent population estimate is 8,297 residents based on the Census 2010 data. The 2020 estimate from the Bureau of Economic and Business Research (BEBR) is a population of 9,097 residents. The City of Marathon has a significant "seasonal visitor population", with the Comprehensive Plan estimating 5,386 seasonal visitors for 2020. All of these population segments will utilize the City's potable water resources. The combined amount of all population segments represents the "functional population" of the City that will create a demand for water usage. For this Plan, the functional population value is used in all per capita calculations and estimates.

The City of Marathon has a Building Permit Allocation System (BPAS) that limits new residential growth to 30 new units per year. The potential expansion of the

City's current boundaries through annexations is possible, but not likely.

Tables 1, 2 and 3 show the City's permanent, seasonal, and functional population projections through 2020.

TABLE 1:

Population Estimates and Projections, 2000 – 2020

Year	*Total Units*	Occupied Units	Persons Per Occupied Unit	Population
2000	6,791	4,597	2.19	10,067
2005	6,941	4,692	2.19	10,275
2010	6,187	3,718	2.23	8,297
2015	6,311	3,850	2.20	8,463
2020	6,437	3,927	2.20	8,632

Source: City of Marathon Comprehensive Plan Data, Inventory, and Analysis; Census 2010

TABLE 2:

Seasonal Visitor Population Projections, 2000 - 2020

Year	*Units*	Occupancy Rate	*Person/Unit*	*Population*
2000	2,829	59.7%	2.92	4,931
2005	2,829	59.7%	2.92	4,931
2010	2,913	59.7%	2.92	5,078
2015	3,000	59.7%	2.92	5,229
2020	3,090	59.7%	2.92	5,386

Source: City of Marathon Comprehensive Plan Data, Inventory, and Analysis; Monroe County Tourism Development Council

TABLE 3:

Functional Population of City and Service Area

Year	*Functional Population City*	*Functional Population Service Area*
2000	14,998	153,080
2005	13,541	155,438

2010	13,375	146,581
2015	13,541	148,043
2020	13,861	149,504

Source: City of Marathon Comprehensive Plan Data, Inventory, and Analysis; FKAA Master Plan; Census 2010

Existing Land Use Profile

The City has no current plans to acquire additional lands through annexation or purchase. Given the geographical constraint of a municipality composed of islands with finite room to accommodate growth, at some point the City will reach build out and the permanent population will cease to show any significant fluctuation. The seasonal population may continue to fluctuate in the future due to economic forces such as the cost of gasoline, airfare, and the ability to maintain a second or third home. The functional population, dependent on the seasonal population will continue to exhibit some change from year to year but will not continue to expand. The existing land use profile below indicates the land use categories and the percentage of gross acreage they utilize.

Existing Land Use Profile

PC Code	Description	Area (Square Feet)	Area (Acres)	Units	Building Size (Square Feet)	Density (DU/Acre)	FAR (SF/SF)
Single-Family							
01	Single-Family	28,616,961	657.0	2,332	n/a	3.5	n/a
Mobile Homes							
02	Mobile Homes	2,920,737	67.1	501	n/a	7.5	n/a
Multi-Family							
03	Multi-family (10 units or more)	649,260	14.9	5	n/a	0.3	n/a
04	Condominium	3,977,718	91.3	1268	n/a	13.9	n/a
05	Timeshare	490,939	11.3	6	n/a	0.5	n/a
08	Multi-family (less than 10 units)	8,752,444	200.9	481	n/a	2.4	n/a
	Subtotal	***45,408,059***	***1042.5***	***4593***	***n/a***	***4.7***	***n/a***
General Commercial							
11	Stores, One Story	1,102,215	25.3	n/a	228,050	n/a	0.2069
12	Mixed Use - Residential / Commercial	1,735,231	39.8	n/a	291,578	n/a	0.1680

13	Department Store	444,312	10.2	n/a	91,738	n/a	0.2065
14	Supermarket	4,951	0.1	n/a	1,704	n/a	0.3441
16	Community Shopping Center	938,120	21.5	n/a	385,075	n/a	0.4105
17	Office Building, One Story	795,035	18.3	n/a	85,322	n/a	0.1073
18	Office Building, Multi Story	124,145	2.8	n/a	34,848	n/a	0.2807
19	Professional Services Building	112,907	2.6	n/a	16,405	n/a	0.1453
21	Restaurant or Cafeteria	511,287	11.7	n/a	61,342	n/a	0.1200
22	Fast Food Drive Thru Restaurant	230,581	5.3	n/a	10,882	n/a	0.0472
23	Financial Institution	516,968	11.9	n/a	49,047	n/a	0.0949
25	Repair Shop (Not Automotive)	153,915	3.5	n/a	28,148	n/a	0.1829
26	Gas Station / Convenience Store	306,193	7.0	n/a	28,076	n/a	0.0917
27	Marinas	2,496,192	57.3	n/a	215,307	n/a	0.0863
29	Wholesale Outlet	285,051	6.5	n/a	42,067	n/a	0.1476
30	Florist or Greenhouse	6,771	0.2	n/a	706	n/a	0.1043
33	Nightclub or Lounge or Bar	28,428	0.7	n/a	15,255	n/a	0.5366
	Subtotal	***9,792,301***	***225***	***n/a***	***1,585,550***	***n/a***	***0.1619***
Commercial Fishing							
44	Packing Plant, Seafood Etc.	156,212	3.6	n/a	14,291	n/a	0.0915
Tourist Commercial							
36	MH Parks, Private Camping, Rec. Parks	4,958,469.8	113.8	n/a	98,156	n/a	0.0198
39	Hotel or Motel	4,339,251	99.6	n/a	514,790	n/a	0.1186
	Subtotal	***9,297,721***	***213.4***	***n/a***	***612,946***	***n/a***	***0.0659***
Industrial							
41	Light Manufacturing	59,281	1.4	n/a	16,993	n/a	0.2867
42	Heavy Industrial	81,602	1.9	n/a	4,186	n/a	0.0513
43	Lumber Yard	35,252	0.8	n/a	10,500	n/a	0.2979
46	Other Food Processing	210,238	4.8	n/a	19,929	n/a	0.0948
47	Gravel Pit	1,961,060	45.0	n/a	3,200	n/a	0.0016
48	Warehousing	430,982	9.9	n/a	117,353	n/a	0.2723

49	Open Storage	70,841	1.6	n/a	2,412	n/a	0.0340
	Subtotal	***2,849,257***	***65***	***n/a***	***174,573***	***n/a***	***0.0613***
Education							
72	Private School or College / Research Center	78,392	1.8	n/a	13,941	n/a	0.1778
84	Public College	371,928	8.5	n/a	-	n/a	0.0000
83	Public School	1,936,589	44.5	n/a	226,274	n/a	0.1168
	Subtotal	***2,386,908***	***54.8***	***n/a***	***240,215***	***n/a***	***0.1006***
Institutional							
71	Church	1,159,277	26.6	n/a	107,605	n/a	0.0928
73	Private Hospital	322,857	7.4	n/a	28,826	n/a	0.0893
74	Nursing Home	155,142	3.6	n/a	22,434	n/a	0.1446
76	Mortuary or Cemetery	14,821	0.3	n/a	4,560	n/a	0.3077
77	Club or Lodge	3,609,006	82.9	n/a	91,828	n/a	0.0254
85	Public Hospital	212,463	4.9	n/a	62,467	n/a	0.2940
	Subtotal	***5,473,568***	***125.7***	***n/a***	***317,720***	***n/a***	***0.0580***
Public Buildings/Grounds/Facilities							
86	County (other than PC List)	18,152,665	416.7	n/a	350,256	n/a	0.0193
87	State (other than PC List)	26,310,450	604.0	n/a	75,943	n/a	0.0029
88	Federal (other than PC List)	6,118,458	140.5	n/a	6,314	n/a	0.0010
89	Municipal (other than PC List)	6,582,639	151.1	n/a	19,893	n/a	0.0030
91	Utilities	1,682,785	38.6	n/a	67,984	n/a	0.0404
94	Right of Way	4,960,710	113.9	n/a	n/a	n/a	n/a
	Subtotal	***63,807,707***	***1,464.8***	***n/a***	***520,390***	***n/a***	***0.0082***
Military							
81	Military	243,588	5.6	n/a	14,465	n/a	0.0594
Recreation							
38	Golf Course	2,523,868	57.9	n/a	n/a	n/a	n/a
92	Private Park	1,020	0.0	n/a	n/a	n/a	n/a
	Subtotal	***2,524,888***	***58***	***n/a***	***n/a***	***n/a***	***n/a***

Conservation							
82	US Mainland Forest, Parks, Rec Area	1,663,142	38.2	n/a	2,784	n/a	0.0017
99	Nature Conservancy, Fl Keys Land Trust	3,917,739	89.9	n/a	10,282	n/a	0.0026
	Subtotal	***5,580,881***	***941.8***		***13,066***		0.0003
Vacant							
00	Vacant Residential	57,413,345	1,318.0	n/a	n/a	n/a	n/a
10	Vacant Commercial	8,913,931	204.6	n/a	n/a	n/a	n/a
70	Vacant Institutional	126,956	2.9	n/a	n/a	n/a	n/a
	Subtotal	***66,454,232***	***1,525.6***	***n/a***	***n/a***	***n/a***	***n/a***
	TOTAL	***213,975,322***	***4,912.2***				
Submerged							
95	Submerged Land	35,444,852	813.7	n/a	n/a	n/a	n/a
	TOTAL	***249,420,173***	***5,725.9***	n/a	n/a	n/a	n/a

Source: City Comprehensive Plan Data, Inventory, and Analysis – Future Land Use Section

2.2 Relevant Regional Issues

As the state agency responsible for water supply in the Lower East Coast (LEC) planning area, the SFWMD plays a pivotal role in resource protection, through criteria used for Consumptive Use Permitting. As pressure increased on the Everglades ecosystem resource, the Governing Board initiated rulemaking to limit increased allocations dependent on the Everglades system. As a result, the Regional Water Availability Rule was adopted by the Governing Board on February 15, 2007 as part of the SFWMD's water use permit program. This reduced reliance on the regional system for future water supply needs and mandates the development of alternative water supplies and an increase in the use of conservation and reuse techniques.

The LEC Planning Area relies on fresh groundwater and surface water for urban, agricultural, and industrial uses. However, traditional freshwater sources in the LEC Planning Area are not sufficient to meet projected 2040 water demands. Analyses indicate increases in allocations of fresh groundwater from the SAS and surface water from Lake Okeechobee are not available to meet the growing needs of the LEC Planning Area during 1-in-10-year drought conditions.

The regional issues identified for 2040 in the Lower East Coast Water Supply Plan

Update (adopted November 4, 2024 ~~November 8, 2018~~) include:

1. Construction of potable water supply development projects by Public Supply utilities.
2. Implementation of Comprehensive Everglades Restoration Plan (CERP) Restoration Strategies and other water resources development projects to provide additional storage.
3. Implementation of Lake Okeechobee System Operating Manual and construction of CERP capital projects identified in minimum flow and minimum water level (MFL) prevention and recovery strategies.

~~1. Fresh surface water and groundwater are limited; further withdrawals could have impacts on the regional system, wetlands, existing legal uses, and saltwater intrusion. As a result, additional alternative water supplies need to be developed.~~
~~2. Expanded use of reclaimed water is necessary to meet future water supply demands and the Ocean Outfall Law.~~
~~3. Expanded use of brackish groundwater from the Floridan aquifer system requires careful planning and wellfield management to prevent undesirable changes in water quality~~.

The sole source provider of potable water to Monroe County is FKAA, whose wellfield is located in Florida City. The limited availability of SAS withdrawals presents a potential risk to the water supply for all of Monroe County. FKAA is a permitted Floridan Aquifer User, which should offset any anticipated drought-driven saltwater intrusion event. FKAA also operates reverse osmosis facilities in Marathon and Stock Island.

Other regional water issues have been identified by the Southeast Florida Regional Climate Change Compact, which includes Palm Beach, Broward, Miami-Dade, and Monroe Counties. The Compact communities have agreed to use a sea level rise prediction of between 6 and 10 inches by 2030, and between 14 and 26 inches by the year 2060 for planning purposes in the Southeast Florida region until more definitive information on future sea level rise is available (the Compact's A Unified Sea Level Rise Projection for Southeast Florida, October 2015). The potential landward movement of the saltwater intrusion line resulting from the impact of sea level rise may affect future decisions regarding the implementation of capital improvements, requiring adaptation mitigation strategies to preserve the potable water supply. Monroe County's climate change and sustainability consultants have recently summarized hydrologic modeling by the United States Geological Survey that suggests relatively low risk to the FKAA wellfields in Florida City under even the worst-case 2060 sea level rise scenarios. However, FKAA continues to monitor the most current data and analysis regarding this issue.

FKAA is a permitted Floridan Aquifer User, which should offset any anticipated drought-driven saltwater intrusion event. Further, FKAA also operates RO facilities in

Marathon and Stock Island, with a combined supply capacity of 3 MGD, as an alternative water source for the county during emergencies and extreme peaks in demand.

3.0 DATA AND ANALYSIS

3.1 Population Information

The City's current and future population figures stated herein are derived from City of Marathon Planning and Zoning Department, BEBR, and 2010 U.S. Census Data. Between 1990 and 2000, the City of Marathon's population grew from 10,404 to 10,741, an increase of 3.2%. Although the City's 2005 Objections, Recommendations, and Corrections Report (ORC) predicted a decline in population, based on the projections prepared by BEBR, in 2005 it was estimated that the City's population had increased to 10,850 residents. These estimates were revised downward for later years, leading to a BEBR-estimated population of 10,295 people in 2009. Despite this marginal correction, these estimates stand in stark contrast to the 2010 census data, which became available to City Staff during the previous preparation of this report.

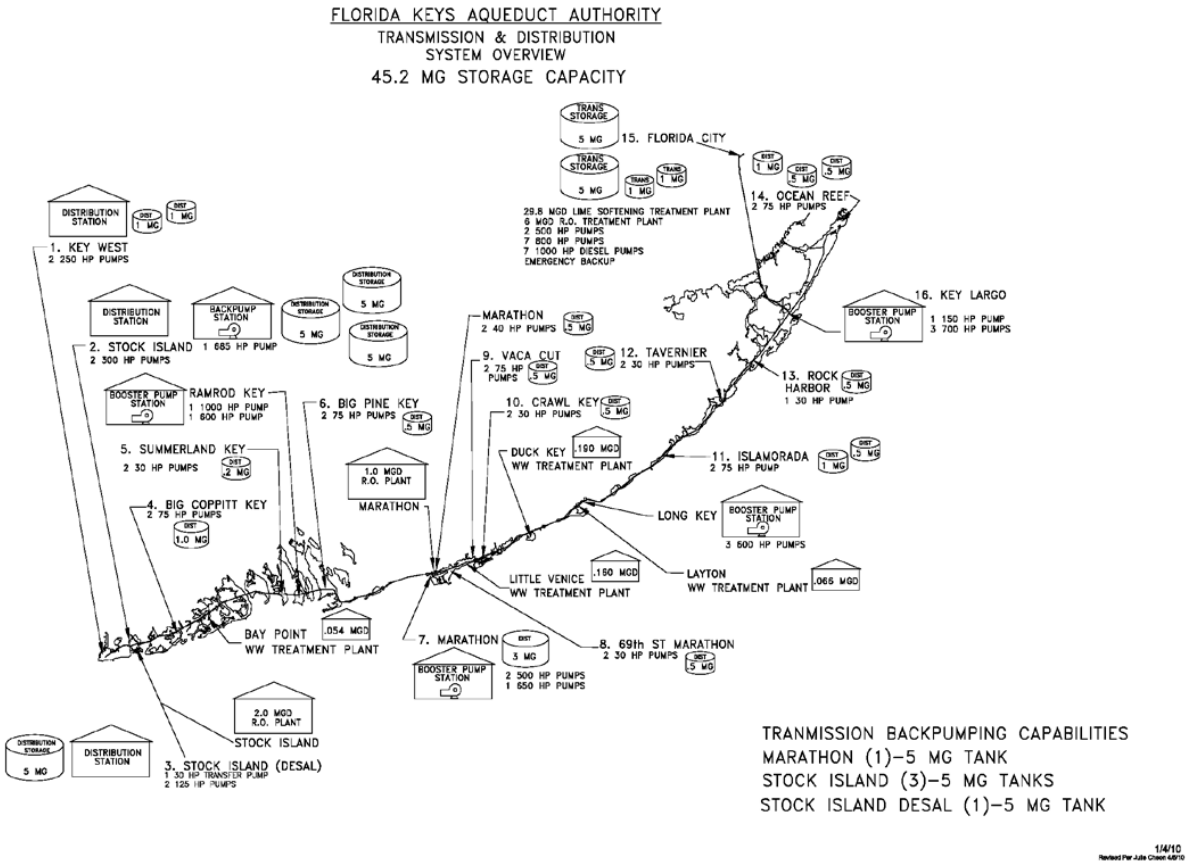
According to 2010 U.S. Census Data, the City's population had decreased to 8,297. Most of this decline occurred after 2005 as a result of the impacts of Hurricane Wilma and the 2008 downturn in the economy. The City has no current basis upon which to project recovery and growth over the next five to ten years. The City previously established an estimate of a conservative baseline increase of two percent per five years. Using this baseline, population estimates for 2015 are 8,463; and 2025 to 8,805 (this represents a decrease of 18 percent below the 2005 population estimates provided by BEBR). The current 2020 BEBR has estimated the population at 9,097. Using this value, a baseline of seven percent every five years is established. This would create a population estimate of 9,734 in 2025, and 10,416 by 2030. The 2030 population projection would be the equivalent of the previous 2010 projection prior to the receipt of the Census information.

3.2 Maps of Current and Future Areas Served.

The service area of FKAA includes all of Monroe County plus that area in Miami-Dade County within one mile of the transmission pipeline. The service area includes a mix of commercial, industrial, and residential zonings that typify the land uses of a suburban area. Minimal service exists in Miami-Dade County, consisting of service to only a ranger station just outside of the treatment plant. FKAA does not expect that the distribution facilities of the system will be significantly expanded in Miami-Dade County.

The map depicting current and future City boundaries served by the Transmission and Distribution System are provided in Figure 1. A GIS overlay map is provided in Exhibit B for clarity.

Figure 1



3.3 Potable Water Level of Service Standard

Pursuant to the Comprehensive Plan, the City has an adopted LOS for potable water of 66.5 gallons per day per capita for residential use and 0.35 gallons per square foot of nonresidential use and an overall LOS of 100 gpd per capita (See Table 6-3 Summary of Level of Service Standards, City of Marathon Comp Plan).

Census 2010 indicated that the City's household size is 2.23. An equivalent residential Unit is defined as the amount of water use (gallons per day) that is equivalent to the amount a single household would use. Per the City of Marathon's Comprehensive Plan, the Residential LOS standard is 66.5 gallons per capita per day. Therefore, total household LOS standards would be 2.23 X 66.5 = 148.3 gallons. The accepted value for residential equivalents throughout the City of Marathon is 167 gallons per day.

The proposed LOS standards for residential, non-residential, overall and the equivalent residential unit are displayed below per table 3-2 under Policy 3-1.1.3 of the Comprehensive Plan.

MEASURE	LOS STANDARD
Residential LOS	**66.5 gal/cap/day (167 g/ERU/day)**
Nonresidential LOS	**0.35 gal/sq.ft./day**
Overall LOS	**100 gal/day**
Minimum Pressure	**20 PSI per customer**
Minimum Quality	**Shall be defined by the USEPA (part 143 National Secondary Drinking Standards, 40 CFR 143, 44FR 42198).**

3.4 Population and Potable Water Demand Projections

The FKAA 20-Year Water System Master Plan's *Population and Water Demand Forecast* states that according to the U.S. Census Bureau, the permanent population of Monroe County peaked at 82,180 in 1993. Since that time, the population has decreased to approximately 77,000 permanent residents in 2017. The State of Florida has designated the Keys as an "Area of Critical Concern" and beginning in 2023, will no longer allow issuance of new building permits for the municipalities in the Keys. Development within the Keys is highly regulated to ensure timely evacuation of its visitors and residents prior to severe hurricanes.

The University of Florida Bureau of Business and Economic Research (BEBR) Population Program provided population analysis within the FKAA Water Supply Facilities Work Plan (2025-2035) Planning Period. Population estimates were divided into Low, Medium, and High Growth estimates. In 2050, the resulting population estimates were 71,400 (Low), 90,500 (Medium), and 109,600 (High). ~~The 2040 population of the FKAA service area was estimated to be 77,101 in the Lower East Coast Water Supply Update, prepared by the South Florida Water Management District in 2018. This value is essentially equivalent to the current population and consistent with the expectation that the permanent population will remain constant over the next 20 years.~~

3.5 Water Supply Provided by Local Government

The City does not provide water. The FKAA is the area service provider.

3.6 Water Supply Provided by Other Entities

The Florida Keys Aqueduct Authority (FKAA) is the sole provider of potable water in the Florida Keys, established by Special Legislation, Chapter 76-441, L.O.F. (as amended). FKAA's primary water supply is the Biscayne Aquifer, a shallow groundwater source. The FKAA's wellfield is located within an environmentally protected pine rockland forest west of Florida City. The location of the wellfield near Everglades National Park, along with restrictions enforced by state and local regulatory agencies, contributes to the unusually high water quality. These wells contain some of the highest quality groundwater in the state, meeting all regulatory standards prior to treatment. Additionally, the FKAA is continually monitoring, assessing, and working to eliminate potential hazards to our water source, including inappropriate aquifer utilization, unsuitable land uses, and the potential for saltwater

intrusion.

The groundwater from the wellfield is treated at the FKAA's Water Treatment Facility in Florida City, which currently has a maximum water treatment design capacity of 29.8 million gallons per day (MGD). The primary water treatment process is a conventional lime softening/filtration water treatment plant and is capable of treating up to 23.8 MGD from the Biscayne Aquifer. The secondary water treatment process is the newly constructed reverse osmosis (RO) water treatment plant which is capable of producing 6 MGD from the brackish Floridan Aquifer. The product water from these treatment processes is then disinfected and fluoridated. The FKAA treated water is pumped 130 miles from Florida City to Key West supplying water to the entire Florida Keys.

The FKAA maintains storage tank facilities which provide an overall storage capacity of 45.2 million gallons system wide. The sizes of tanks vary from 0.2 to 5.0 million gallons. These tanks are utilized during periods of peak water demand and serve as an emergency water supply. Since the existing transmission line serves the entire Florida Keys (including Key West), and storage capacity is an integral part of the system, the capacity of the entire system must be considered together, rather than in separate service districts.

Additionally, two saltwater RO plants, located on Stock Island and Marathon, are available to produce potable water under emergency conditions. The RO desalination plants have design capacities of 2.0 and 1.0 MGD, respectively.

Demand for Potable Water

Figures 2 and 3 provide a historical overview of the water demands in the FKAA service area including Water Use Permit (WUP) allocation limits, yearly percent changes, and remaining water allocations. In March 2008, South Florida Water Management District (SFWMD) approved the FKAA's modification of WUP 13-00005-5-W for a 20-year allocation from the Biscayne and Floridan Aquifers. This modified WUP provides an annual allocation of 8,751 Million Gallons (MG) or 23.98 MGD and a maximum monthly allocation of 809 MG with a limited annual withdrawal from the Biscayne Aquifer of 6,492 MG or 17.79 MGD and an average dry season (December 1st-April 30th) of 17.0 MGD.

In order to meet the requirements of this limitation, the FKAA constructed a new Floridan Aquifer Reverse Osmosis (RO) water treatment system. This RO water treatment system is designed to withdraw brackish water from the Floridan Aquifer, an alternative water source approximately 1,000 feet below the ground surface and treat the water to drinking water standards. The RO water treatment plant provides added capability to limit Biscayne aquifer withdrawals and is designed to meet current and future water demands. The RO water treatment system provides an additional 6.0 MGD of potable water.

Along with the new reverse osmosis water treatment plant, compliance with

withdrawal limits can also be accomplished by using other alternative water sources (blending of the Floridan Aquifer, reclaimed water and operation of the RO desalination plants), pressure reduction, public outreach, and assistance from municipal agencies in enforcing water conservation ordinances.

Figure 2. Annual Water Withdrawals 2002-2018

Year	Annual Withdrawal (MG)	% Change	WUP Limit (MG)	WUP +/- Annual Allocation (MG)
2002	6,191	10.03%	7,274	1,083
2003	6,288	1.57%	7,274	986
2004	6,383	2.74%	7,274	813
2005	6,477	0.16%	7,274	803
2006	6,283	-2.49%	7,274	964
2007	5,850	-7.35%	7,274	1,428
2008	5,960	1.89%	8,751	2,791
2009	5,966	0.09%	8,751	2,785
2010	5,919	-0.79%	8,751	2,832
2011	6,327	6.89%	8,751	2,424
2012	6,042	-4.50%	8,751	2,709
2013	6,105	1.04%	8,751	2,646
2014	6,377	4.46%	8,751	2,374
2015	6,530	2.40%	8,751	2,221
2016	6,462	-1.04%	8,751	2,289
2017	6,324	-2.13%	8,751	2,427
2018	6,526	3.10%	8,751	2,225

Source: Florida Keys Aqueduct Authority, 2019

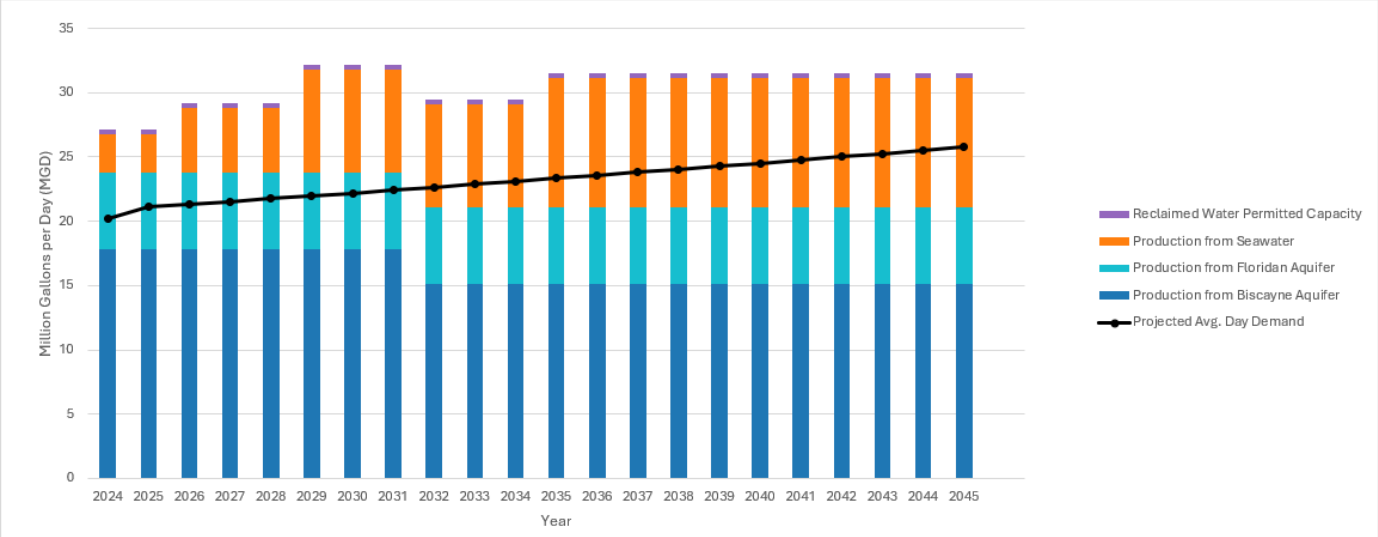
Figure 3. 2019 Potable Water Demand Summary

FLORIDA KEYS AQUEDUCT AUTHORITY				
Potable Water Demand Summary - New Water Demand, Actual Water Demand, and Expected Water Demand				
	Year - 2019		Year - 2019	Year 2020
Municipality	New Water Service - Gallons/Year	Metered Water - Gallons/Year	Actual Water Demand - Gallons/Year*	Expected Water Demand - Gallons/Year
Unincorporated Monroe County	2,335,000	2,194,005,542	2,824,051,412	2,826,386,412
City of Key West	617,000	1,569,905,703	2,020,730,729	2,021,347,729
City of Marathon	1,337,700	586,491,003	754,911,833	756,249,533
City of Key Colony	0	108,107,301	139,152,144	139,152,144
City of Layton	0	12,290,772	15,820,275	15,820,275
City of Islamorada	324,500	654,275,664	842,162,008	842,486,508
Entire Florida Keys	**4,614,200**	**5,125,075,985**	**6,596,828,401**	**6,601,442,601**
SFWMD WUP Annual Allocation			**8,751,000,000**	**8,751,000,000**
*metered + unmetered water demand (ie. flushing, leaks, etc.)				

Florida Keys Aqueduct Authority				
Potable Water Demand Summary - New Water Demand, Actual Water Demand, and expected Water Demand				
	Year 2024			Year 2025
	New Water Service Gal / Year	Metered Water Gal / Year	Water Demand Gal / Year	Expected Water Demand Gal / Year
Unincorporated Monroe County	1,099,879	2,388,152,815	3,336,986,291	3,415,181,749
City of Key West	2,380,812	1,557,579,300	2,176,418,837	2,227,418,767
City of Marathon	3186880	615,105,664	859,492,389	879,632,838
City of Key Colony Beach	52006	117,484,794	164,162,504	168,009,317
City of Layton	0	13,407,091	18,733,843	19,172,832
Village of Islamorada	1685369	693,740,350	969,369,306	992,084,496
Entire Florida Keys	8,404,946	5,385,470,014	7,525,163,170	7,701,500,000
SFWMD WUP Annual Allocation			8,751,000,000	8,751,000,000

Figure 4 illustrates projected water supply availability vs projected water demand. Demand for potable water is influenced by many factors, including the number of permanent residents, seasonal populations and day visitors, the demand for commercial water use, landscaping practices, conservation measures, and the weather.

Figure 4. FKAA Water Supply Available vs. Water Demand Projections



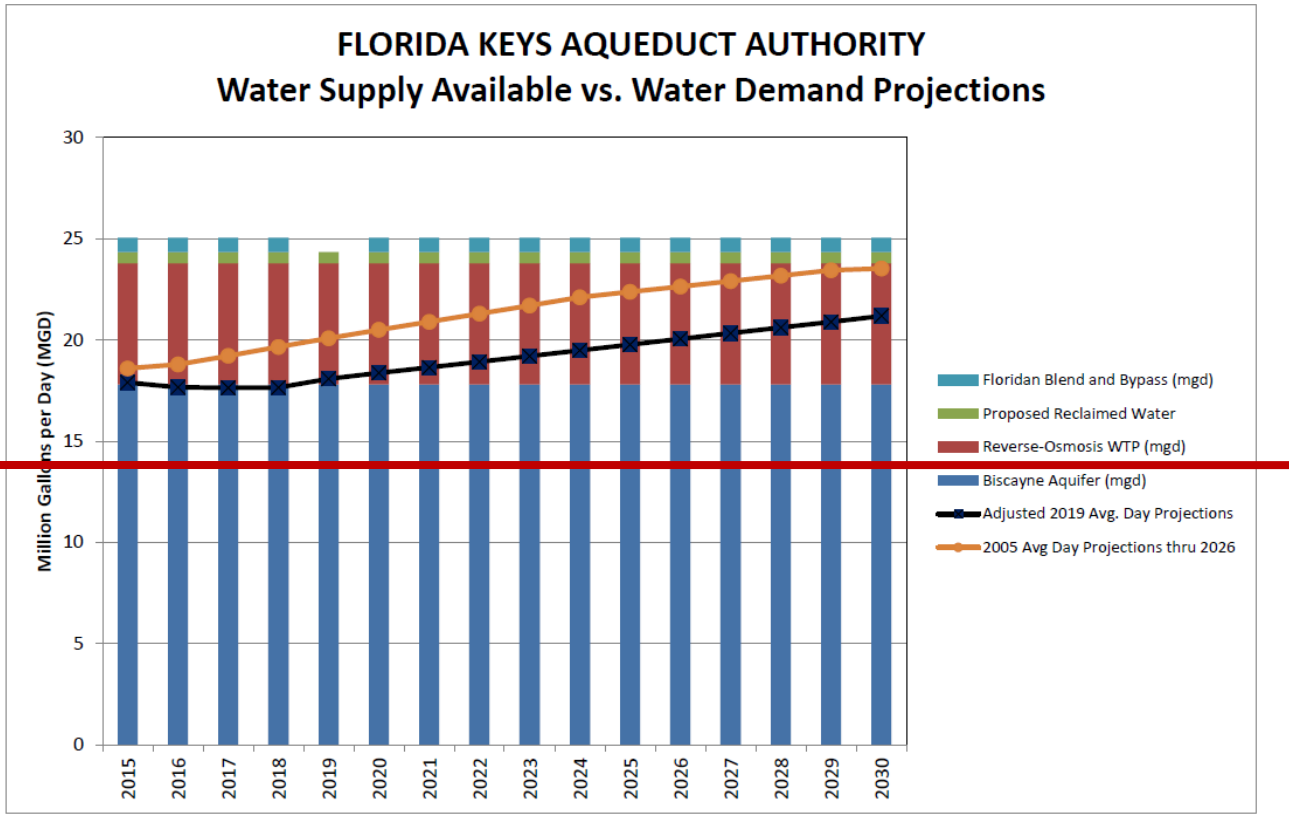


Table 5 - Projected Water Demand in 2025 (in MG)			
	FKAA Permit Thresholds	**2024 Water Demand**	**2025 Water Demand Projected**
Annual Allocation			
Average Daily Demand	23.98	20.66	21.1

Maximum Monthly Demand	809.01	686	693
Annual Demand	8,751	7,525	7,702
Biscayne Aquifer Annual Allocation/Limitations			
Average Daily Demand	17.79	17.4	17.79
Annual Demand	6,492	6,367	6,492
Floridan RO Production			
Average Daily Demand	6.00	3.27	2.21
Emergency RO WTP Facilities			
Kermit L. Lewin Design Capacity	4.00 (MGD)	21.84 (MGY)	1.00
Marathon RO Design Capacity	1.00 (MGD)	0.00 (MGY)	0.00
All figures are in millions of gallons			
Source: Florida Keys Aqueduct Authority, 2025			

The 2024 figures and projections for 2025 indicate a slight increase in annual average daily demand from 20.66 to 21.1 MGD and an increase in maximum monthly demand from 686 MGD to 693 MGD. Preliminary projections from FKAA for 2026 indicate a negligible increase in annual average daily demand to 21.3.

Table 6 provides the amount of water used on a per capita basis. Based on Functional Population and average daily demand, the average water consumption for 2024 was approximately 126 gallons per capita (person), which reflects the entire FKAA service area, including unincorporated Monroe County, Key West, Marathon, Islamorada, Key Colony Beach, and Layton.

Table 6 - Per Capita Water Use

Year	Functional Population[1]	Daily Demand (gallons)[2]	Average Per Capita Water Consumption (gallons)[2]
2000	153,080	17,016,393	111
2001	153,552	15,415,616	100
2002	154,023	16,962,082	110
2003	154,495	17,228,192	112
2004	154,924	17,652,596	114
2005	156,150	17,730,000	114
2006	155,738	17,287,671	111
2007	155,440	16,017,315	103
2008	154,728	16,285,383	105
2009	155,441	16,345,205	105

2010	155,288	16,210,959	104
2011	156,054	17,334,247	111
2012	156,391	16,508,197	106
2013	156,727	16,836,164	107
2014	157,063	17,472,362	111
2015	157,400	17,890,400	114
2016	157,730	17,704,100	112
2017	158,060	17,632,900	112
2018	158,391	17,643,800	113
2019	158,721	18,076,710	114
2020	159,051	18,213,110	115
2021	159,382	19,810,960	124
2022	159,172	19,948,230	125
2023	160,043	20,086,451	126
2024	160,373	20,225,630	126

Source: 1. Monroe County Population Projections - Monroe County Planning Department, 2011

2. Florida Keys Aqueduct Authority, 2025

The Florida Keys Aqueduct Authority draws from four different supply sources in the Keys. Most of the supply (approximately 17.79 MGD) is fresh groundwater from the Biscayne Aquifer, which is treated through a lime softening process. This is supplemented with approximately 6 MGD of groundwater from the brackish Floridan Aquifer, which is treated at FKAA's Low-Pressure Reverse Osmosis facility; both the lime softening plant and the LPRO facility are located at the J. Robert Dean Water Treatment Plant in Florida City. Additionally, two seawater desalination plants located in Marathon and Stock Island contribute emergency water supply; the Marathon plant has a capacity of 1 MGD and the Stock Island plant has a capacity of 2 MGD.

Per the terms of FKAA's water use permit with South Florida Water Management District, the water supply is limited to a maximum daily withdrawal of 17 MGD during the dry season (December-April) if aquifer levels fall below 1.25 NGVD29 at USGS monitoring well G-613.

Figure 5. FKAA Water Supply Sources

Water Supply Sources

Location	Source Water	Treatment Process	Capacity (MGD)
Florida City	Biscayne Aquifer	Lime Softening	17.79[1]
Florida City	Floridan Aquifer	Low-Pressure Reverse Osmosis	6
Marathon	Seawater	Desalination and/or R.O.	1
Stock Island	Seawater	Desalination and/or R.O.	2

1 Max day withdrawal limited to 17 MGD during dry season if aquifer level falls below 1.25 NGVD29 at USGS monitoring well G-613 between December 1 and April 30.

3.7 Conservation

The City currently coordinates with the FKAA to assist with water conservation and reuse efforts per Comprehensive Plan Objective 4-5.2 *Promote Water Conservation*. The City also actively participates in implementing the FKAA's Water Conservation Plan consistent with SFWMD's Water Shortage Plan and Water Conservation Program. Comprehensive Plan Policy 6-1.2.2: *Protect and Conserve Potable Water Supply* states:

1. Potable water shall be conserved through enforcement of conservation measures;

2. The City shall require the use of alternative water supplies such as treated wastewater, stormwater, cisterns, and reverse osmosis systems for landscape irrigation; and

3. The City shall require the use of water-saving plumbing fixtures on all new development.

Additional conservation measures are mandated by state regulations such as ultra-low volume fixtures and rain sensor devices and are currently utilized by the City. The Comprehensive Plan shall reflect all conservation measures contained within the Lower East Coast Water Supply Plan except those measures that are solely the responsibility of the provider, FKAA such as establishing rates and leak detection and repair. Additionally, the City enforces all FKAA or SFWMD mandates for restricted water use. The City is supportive of all measures the FKAA implements to conserve water including a leak detection program, conservation-based rate schedule and the use of reclaimed water/ Grey water use in the City. The City has reviewed the possibility of requiring reuse of water. City-wide reuse does not appear to be feasible at the current time based on the existing infrastructure that is operated and maintained by the FKAA.

The City's existing policies and the proposed new policies that support water conservation provide a good baseline for moving toward the goal of reduced consumption and usage of water. The City acknowledges that there are numerous variables that may affect the use and conservation of water, but the framework provided is anticipated to lessen overall consumption and reduce the LOS standard over a 20-year horizon.

3.7.1 County-wide Issues

Water conservation is one method available to promote the reduction of use and increase of availability of potable water. FKAA implements a high base water rate for water use, which effectively deters wasteful water use. Implementation of mandatory year-round watering restrictions also aid in conserving water.

3.7.2 Local Government Specific Actions, Programs, Regulations, or Opportunities

The City will continue to coordinate future water conservation efforts with the FKAA and the SFWMD to ensure that Best Management Practices (BMP) are utilized. The City will continue to implement the existing goals, objectives and policies in the comprehensive plan that promote water supply and conservation in a manner that will satisfy consumer demand while creating no adverse impacts to the environment. The City will participate in the Interlocal Agreement between Monroe County and the other municipalities that will ensure the availability of potable water prior to the issuance of a building permit. Currently the City requires a letter of coordination from FKAA stating that water will be available for all development prior to the issuance of a building permit.

3.8 Reuse

Water reuse is a method for supplementing water availability. Desalination at the source through reverse osmosis is presently incorporated within the design of new water treatment facilities that tap into the Floridan Aquifer. The cost of developing a centralized collection, treatment and distribution system for recycled water separate from the FKAA infrastructure in the City shall be reviewed for financial feasibility. The City has implemented a public infrastructure program to construct and operate central sewer collection and treatment systems. Sewage treatment facilities have the capability to make available gray water for non-potable water applications, such as irrigation for City parks and potentially private entities such as the Sombrero Golf Course. However, the lack of possible users has inhibited the necessary investment to create and maintain a viable reuse water distribution system, and the portion of the FDEP permits to use reclaimed water have been temporarily suspended.

3.8.1 Regional and County-wide Issues

State law supports reuse efforts. For the past years, Florida's utilities, local governments, and water management districts have led the nation in implementing water reuse programs that increase the quantity of reclaimed water used and public acceptance of reuse programs. Section 373.250(1) F.S. provides that "water reuse programs designed and operated in compliance with Florida's rules governing reuse are deemed protective of public health and environmental quality." In addition, Section 403.064(1), F.S., provides that, "reuse is a critical component of meeting the State's existing and future water supply needs while sustaining natural systems."

3.8.2 Local Government Specific Actions, Programs, Regulations, or Opportunities

The City will support the SFWMD and Monroe County water reuse projects, and implementation of new regulations or programs designed to increase the volume of reclaimed water used and public acceptance of reclaimed water.

3.9 Climate Change and Sea Level Rise

Southeast Florida is widely considered one of the most vulnerable regions to the impacts of climate change and sea level rise. This is especially true of the Florida Keys, a 112-mile string of offshore islands connected by US 1 to Miami-Dade County. As discussed earlier, potential landward movement of the saltwater intrusion line resulting from the impact of sea level rise may affect future decisions regarding the implementation of capital improvements, requiring adaptation mitigation strategies to preserve the potable water supply. Monroe County's climate change and sustainability consultants have recently summarized hydrologic modeling by the United States Geological Survey that suggests relatively low risk to the FKAA wellfields in Florida City under even the worst-case 2060 sea level rise scenarios. However, FKAA continues to monitor the most current data and analysis regarding this issue. Currently the City of Marathon does not have an Energy and Climate Element of the Comprehensive Plan. It is therefore recommended to currently address Climate Change and SLR through existing governmental coordination and through existing plans such as the Southeast Florida Regional Compact on Climate Change.

3.10 Local Government Specific Actions, Programs, Regulations, or Opportunities

FKAA presently operates two reverse osmosis (RO) plants within Monroe County, in Marathon and Stock Island, which have a combined production capacity of 3 MGD. A Floridan wellfield and RO water treatment facility were constructed by FKAA in Florida City and have been operational since the fall of 2009. This RO water treatment plant treats the brackish water of the Floridan Aquifer and has a production capacity of 6 MGD. Storage facilities maintained by the FKAA have a total storage capacity of 45.2 MG; of this amount, there is 12 MG of storage available in above ground storage reservoirs at Florida City. The remaining capacity is obtained from tanks located throughout the transmission and distribution system that provide an additional 33.2 MG of storage capacity. It is therefore anticipated that FKAA will be well positioned to accommodate all of Monroe County's future water demands as sea level rise impacts South Florida's regional water supply.

4.0 CAPITAL IMPROVEMENTS

The FKAA 20-Year Water System Capital Improvement Master Plan (the "FKAA

CIP") identifies all proposed work projects affecting the City of Marathon.

4.1 Work Plan Projects

The FKAA 20-Year Water System Capital Improvement Master Plan identifies all proposed work projects within Monroe County (See below ~~Exhibit A: Section 7.2 of the master plan~~).

FKAA has a Water System Master Plan for water supply, water treatment, transmission mains and booster pump stations, distribution mains, facilities and structures, information technology, reclaimed water systems, and Navy water systems.

In 2023, FKAA began replacing aging transmission mains and will continue upgrading the entire 130-mile system over the coming decades. The Florida Keys Aqueduct Authority (FKAA) is implementing major upgrades to help make its drinking water distribution more resilient against climate change. The improvements are reflected in the 5-Year Capital Improvement Plan.

Table 7 provides the schedule and costs projected for the capital improvements to the potable/alternative water systems planned by the FKAA. The total cost of the scheduled improvements is approximately $389 million over the next 5 years. These projects are to be funded by the water rate structure, long-term bank loans, and grants.

FKAA Projected 5 Year Capital Improvement Plan

Description	2026	2027	2028	2029	2030	5 Year Total
Water Projects						
Marathon Customer Service	500,000	100,000	800,000	5,000,000	5,000,000	11,400,000
J Robert Dean Membrane Treatment Facility (PFAS)	5,000,000	25,000,000	30,000,000	35,000,000	-	95,000,000
Marathon (Crawl Key) Reverse Osmosis Facility	10,000,000	25,000,000	25,000,000	15,000,000	-	75,000,000
Kermit H Lewin Reverse Osmosis Rehabilitation	1,000,000	1,000,000	2,500,000	7,500,000	5,000,000	17,000,000
J. Robert Dean WTP Wastewater Forcemain	-	720,000	-	-	-	720,000
J. Robert Dean WTP Diesel Pump Upgrades	1,500,000	2,500,000	-	-	-	4,000,000
J. Robert Dean WTP Electrical Improvements- (Phase 2)	4,000,000	-	-	-	-	4,000,000
Marathon, Ramrod and Key West Pump Station Electrical Up	750,000	750,000	-	-	-	1,500,000
Transmission Relocation (Florida City)	-	7,000,000	7,000,000	-	-	14,000,000
Transmission Plantation Key (MM 86-91)	30,000,000	-	-	-	-	30,000,000
Transmission Lower Matecumbe Key (MM 73-79)	1,000,000	-	20,000,000	30,000,000	20,000,000	71,000,000
Transmission Subaqueous Crossings (MM72-79)	1,000,000	8,000,000	8,000,000	-	-	17,000,000
Transmission Marathon (Knights Key)	1,000,000	-	-	-	-	1,000,000
Cathodic Protection System Repair and Improvements	200,000	2,000,000	-	-	-	2,200,000
Transmission Snake Creek Subaqueous Crossing	6,300,000	-	-	-	-	6,300,000
Transmission C111 Subaqueous Crossing	500,000	5,600,000	-	-	-	6,100,000
Desalination Storage Tank	1,200,000	-	-	-	-	1,200,000
Ocean Reef Tank Rehabilitation	500,000	-	-	-	-	500,000
Distribution Twin Lakes Key Largo	500,000	-	-	-	-	500,000
Key West Storage Tank Replacement	1,000,000	4,000,000	1,000,000			6,000,000
Distribution Upgrades	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000	7,500,000
Distribution Storage Tank Replacement Crawl Key	2,000,000	-	-	-	-	2,000,000
Marathon Pump Station	2,600,000	1,500,000	-	-	-	4,100,000
Valve Replacement Program	800,000	800,000	800,000	800,000	800,000	4,000,000
Meter Gateways	200,000	200,000	200,000	-	-	600,000
NAS Key West Boca Chica Field - East Fire Pumping Station	1,300,000	2,500,000	-	-	-	3,800,000
NAS Connection A & B Distribution Boca Chica	1,400,000	1,400,000	-	-	-	2,800,000
Total water projects	75,750,000	89,570,000	96,800,000	94,800,000	32,300,000	389,220,000

4.2 Capital Improvements Element/Schedule

Due to the FKAA's role as sole provider of potable water, the City's Capital Improvements Element does not include any itemized projects or expenditures. However, Comprehensive Plan Objective 9-1.2: *Develop and Implement a Concurrency Management System* states "Pursuant to Ch. 163, F.S., and Rule 9J-5.0055 F.A.C., the City shall develop and implement a Concurrency Management System, which shall ensure that facilities and services needed to support development are available concurrent with the impacts of new development and redevelopment."

The City will adopt by reference the FKAA CIP thus linking water availability and programmed improvements with the City's Concurrency Management System to continue the permit review and approval process that requires evidence of water supply availability prior to the issuance of a building permit and certificate of occupancy.

5.0 GOALS, OBJECTIVES AND POLICIES

Staff has found no need for any additional policies to be created and adopted into the comprehensive plan. The previously adopted policies are listed below:
~~Staff has formulated one new objective, and six new policies to meet the statutory requirements regarding potable water supply. The proposed new policies are listed below:~~

Policy 3-5.1.2: Interlocal Agreement with FKAA to Identify the Availability of Water Supply to Serve Existing and New Development.

By December 31, 2021 the City of Marathon shall enter into an interlocal agreement with the Florida Keys Aqueduct Authority to formulate a mechanism that will allow the FKAA and the City to identify the availability of water supply needed to serve existing and new development within the City, monitor the use of potable water, and implement such alternative water supply projects, traditional water supply projects, conservation projects and reuse necessary to meet the City's water supply needs.

Policy 3-5.5.5 Encourage Use of Rainwater

The City shall permit and encourage rainwater storage facilities for all household uses such as but not limited to, irrigation, car, patio, and boat washing. [§163.3177(6)(c)., F.S.]

Objective 3-5.6 Ensure Adequate Water Pressures For Fire Protection

The City shall continue to coordinate with FKAA to ensure adequate capacity is available to provide for fire flows for protection of the public health, welfare, and safety. [§163.3177(3)(a)3., F.S.]

Policy 3-5.6.1 Coordinate with FKAA to Ensure Fire Flows

The City shall coordinate with the FKAA, in accordance with its Capital Improvements Program, to continue upgrading the distribution system toward the goal of providing fire flow capabilities throughout Marathon as funds and land are available. Fire flows shall meet the provisions of the Florida Fire Prevention Code.

Policy 3-5.6.2 Fire Flow LOS

The City shall require that at the time a construction permit is issued, adequate fire flow is supplied to the site in accordance with the Florida Fire Prevention Code.

Policy 5-1.1.12 Water Supply Compatibility

The City shall continue to coordinate with the County and Cities of Layton, Key Colony Beach, Key West, the Village of Islamorada, and FKAA as necessary to facilitate system-wide compatibility on such potable water-related issues as potable water levels of service, consumption projections, water conservation programs, and emergency management.

Policy 5-1.1.13 Energy and Climate Plans

The City, shall continue to coordinate with the County and Cities of Layton, Key

Colony Beach, Key West, the Village of Islamorada, FKAA, and other South East Florida Regional Compact Climate Change partners as necessary to facilitate compatibility on such energy and climate related issues (including but not limited to, emergency management, flood risk, storm surge, threats to potable water supply, the potential for changing habitat and landscapes, the need for shoreline stabilization and the potential impacts to infrastructure necessary to serve proposed uses).

6.0 REGIONAL ISSUES IDENTIFIED IN REGIONAL WATER SUPPLY PLANS

6.1 Lower East Coast Water Supply Plan Update, ~~November 8, 2018~~ November 4, 2024.

The sole source provider of potable water to Monroe County is FKAA, whose wellfield is located in Florida City. The limited availability of SAS withdrawals presents a potential risk to the water supply for all of Monroe County. FKAA is a permitted Floridan Aquifer User, which should offset any anticipated drought-driven saltwater intrusion event. FKAA also operates reverse osmosis facilities in Marathon and Stock Island.

The City of Marathon will continue to support the implementation of the recommendations of the SFWMD Update including the identified recommendations below:

- Continue implementation of water conservation programs throughout the LEC Planning Area to increase water use efficiency and reduce the amount of water needed to meet future demands.
- Continue implementation of MFL prevention and recovery strategies, and review and update these strategies, as appropriate, in conjunction with future water supply plan updates.
- Evaluate future versions of LOSOM with consideration of capital projects being designed and constructed, such as ASR systems and aboveground storage reservoirs to increase storage capacity.
- Continue development of alternative water supplies, including maximizing the use of reclaimed water.
- Design new FAS wellfields to maximize withdrawals while minimizing water level and quality changes. This likely will require a combination of additional wells with greater spacing between wells, lower-capacity wells, and continued refinement of wellfield operational plans.
- Develop regional and local reservoirs and other storage systems (e.g., ASR systems), where possible, to increase surface water availability for environmental, agricultural, and urban water supply needs.
- Continue supporting ecosystem restoration efforts, including the Restoration Strategies Regional Water Quality Plan and CERP.
- Identify wells critical to long-term monitoring and modeling to ensure they are constructed, maintained, or replaced, as necessary.

- Continue mapping the saltwater interface and identify areas of concern that might require enhanced monitoring or changes in wellfield operations.
- Continue characterizing, monitoring, and designing adaptation solutions in response to climate change and sea level rise and their impacts to water supply and continue participating in the Southeast Florida Regional Climate Change Compact.

6.2 Integrating Climate Change & Water Supply Planning In Southeast Florida, Southeast Florida Regional Climate Change Compact, June 10, 2014

The Southeast Florida Regional Climate Change Compact, which includes Palm Beach, Broward, Miami-Dade, and Monroe Counties, predicts that the sea level will rise (the Compact's A Unified Sea Level Rise Projection for Southeast Florida [October 2015] predicts that the sea level will rise between 6 and 10 inches by 2030). This may have implications regarding the ability of the local utility to provide fresh potable water from the Biscayne Aquifer to Monroe County as the saltwater intrusion line shifts westward towards the FKAA wellfield. Monroe County's climate change and sustainability consultants have recently summarized hydrologic modeling by the United States Geological Survey that suggests relatively low risk to the FKAA wellfields in Florida City under even the worst-case 2060 sea level rise scenarios. However, FKAA continues to monitor the most current data and analysis regarding this issue.

7.0 REFERENCES

- Florida Keys Aqueduct Authority, Water Supply Facilities Work Plan, 2025-2035
- Monroe County, 10-Year Water Supply Facilities Work Plan Update, 2026
- South Florida Water Management District – 2023-2024 Lower East Coast Water Supply Plan Update
- Florida Keys Aqueduct Authority, 20-Year Water System Capital Improvement Master Plan, 2020
- Florida Keys Aqueduct Authority, Annual Water Demand Update Through 2030
- Florida Keys Aqueduct Authority, Annual Water Demand Update by Municipal Boundary
- Florida Keys Aqueduct Authority Projected 5-Year Capital Improvement Plan
- South Florida Water Management District, Lower East Coast Water Supply Plan Update, November 8, 2018
- Southeast Florida Regional Climate Change Compact, A Unified Sea Level Rise Projection for Southeast Florida, October 2015
- Southeast Florida Regional Climate Change Compact, Integrating Climate Change & Water Supply Planning In Southeast Florida, June 10, 2014

8.0 EXHIBITS

Exhibit A: Section 7.2 of the Florida Keys Aqueduct Authority 20-Year Water System Capital Improvement Master Plan, December 2020.
Exhibit B: Florida Keys Aqueduct Authority Facilities Overview Map.