



City of Layton
P.O. Box 778
Long Key, Florida 33001

RECEIVED
Div. of Community Planning and Growth
JUN - 8 2020
Div. of Community Development
Dept. Economic Opportunity

Bruce Halle
Mayor

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May 30, 2020

SENT VIA PRIORITY MAIL

Ray Eubanks, Plan Processing Administrator
Department of Economic Opportunity
Community Planning and Development
107 East Madison Street
Caldwell Building, MSC 160
Tallahassee, Florida 32399

November 4, 2019

RE: City of Layton Comprehensive Plan Amendment adding the South Florida Water Management Districts *Lower East Coast Water Supply Plan*

Dear Mr. Eubanks,

Pursuant to Chapter 163.3184(4), Florida Statutes, the City of Layton City Council, acting within the jurisdiction of the Florida Keys Area of Critical Concern, hereby transmits one (1) hard copy and two (2) compact disks of the adopted amendments to the City of Layton Comprehensive Plan. The amendment is subject to the State Coordinated Review Process, Section 163.3184(4), Florida Statutes, and the City requests the State Land Planning Agency to formally review the proposed Comprehensive Plan amendment.

City Ordinance 2019-12-01 amending the City Comprehensive Plan with Amendment adding the South Florida Water Management Districts Lower East Coast Water Supply Plan was adopted by the Layton City Council on May 7, 2020 following the second and final public hearing. The amendment adds the **South Florida Water Management Districts *Lower East Coast Water Supply Plan***

Copies of the amendment package are also being provided to The Department of State and the South Florida Water Management Division.

Thank you in advance for your timely review of these materials. Should you have and question about the proposed amendments, please contact Skip Haring, Planner at (305) 394-2105 (cell), FAX 305-664-0105, and/or CityHall@CityofLayton.com,

Sincerely,



Bruce Halle, Mayor

Enclosures

Cc:

Terry Manning, South Florida Water Management District

**CITY OF LAYTON, FLORIDA
ORDINANCE NO. 2019-12-01**

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF LAYTON, FLORIDA, AMENDING AND/OR RESTATING THE CITY OF LAYTON COMPREHENSIVE PLAN, WITH THE SOUTH FLORIDA WATER MANAGEMENT DISTRICT'S LOWER EAST COAST WATER SUPPLY PLAN, TO ADOPT A 10-YEAR WATER SUPPLY PLAN INTO THE COMPREHENSIVE PLAN AS MANDATED BY FLORIDA STATUTES 163.3177(6)(C); PROVIDING FOR THE TRANSMITTAL OF THIS ORDINANCE TO THE STATE DEPARTMENT OF ECONOMIC OPPORTUNITY; PROVIDING FOR SEVERABILITY; AND PROVIDING FOR AN EFFECTIVE DATE UPON APPROVAL OF THIS ORDINANCE BY THE STATE DEPARTMENT OF ECONOMIC OPPORTUNITY.

WHEREAS, the City of Layton adopted a comprehensive plan in 1990 in accordance with Chapter 163.3184, F.S., the Local Government Comprehensive Planning Act of 1975, and further amended the Comprehensive Plan by Ordinance 96-06-01; 03-09-01; 05-03-01; 08-02-01; 08-08-01; and 09-03-01, AND

WHEREAS, the City Council desires to amend certain elements of the Comprehensive Plan based on an evaluation and appraisal pursuant s. 163.3191 Florida Statutes by amending requirements for establishing a procedure to allocate future building permit allocations within the City limits, establishing a Water Supply Plan, and

WHEREAS, the Layton City Council held public hearings prior to submitting the proposed amendments to the Comprehensive Plan to the state land planning agency as required by the Act; and

WHEREAS, the City Council has given due public notice of hearings on the plan amendments, and has held Public Hearings and approved by Ordinance the Plan Amendments; and

WHEREAS, all requirements of the, statutory provisions regarding the preparation of the Comprehensive Plan amendments and the subsequent action of the City Council have been met.

NOW THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF LAYTON, FLORIDA:

SECTION 1: AMENDMENT OF PLAN

That, pursuant to the "Local Government Comprehensive Planning and Land Development Regulation Act", Chapter 163.3189, F.S. the City Council of the City of Layton hereby declares its intent to amend the City of Layton Comprehensive Plan, with the amendment attached hereto and hereby incorporated by reference.

SECTION 2: LEGAL EFFECT OF THE CITY OF LAYTON COMPREHENSIVE PLAN

No public or private development shall be permitted except in conformity with the City of Layton Comprehensive Plan, and all land development regulations and land developments shall be consistent with the City of Layton Comprehensive Plan as so amended.

SECTION 3: GEOGRAPHIC APPLICABILITY

The City of Layton Comprehensive Plan shall be applicable throughout the incorporated area of the City of Layton, Florida, unless any joint or interlocal agreements with other local governments specifically provide otherwise.

SECTION 4: REPEAL OF CONFLICTING ORDINANCES

That all ordinances or parts of ordinances in conflict herewith be and the same are hereby repealed to the extent of such conflict, and specifically the ordinance adopting the 1990 City of Layton Comprehensive Plan.

SECTION 5: SEVERABILITY

The provisions of this Ordinance are severable, and it is the intention of the City Council of the City of Layton, Florida, to confer the whole or any part of the powers herein provided. If any of the provisions of this Ordinance shall be held unconstitutional or invalid by any court of competent jurisdiction, the decision of such court shall not affect or impair any remaining provision of this Ordinance. It is hereby declared to be the legislative intent of the City Council of the City of Layton that this Ordinance would have been adopted had such unconstitutional or invalid provisions not been included therein.

SECTION 6: EFFECTIVE DATE

The effective date of this plan amendment shall be the date a final order is issued by the state land planning agency finding the amendment to be in-compliance in accordance with Chapter 163, F.S.; or the date the final order is issued by the Administration Commission finding the amendment to be complying in accordance with Section 163 F.S. No development orders, development permits, or land uses dependent on an amendment may be issued or commenced before the amendment has become effective.

SECTION 7: Inclusion in the Comprehensive Plan. The text amendment shall be incorporated in the City of Layton Comprehensive Plan. The numbering of the foregoing may be renumbered to conform to the numbering in the Layton Comprehensive Plan.

Roll Call	YES	NO
Councilman Yesenia Diaz	<u>NOT PRESENT</u>	
Councilman Philip Porter	<u>X</u>	<u> </u>
Vice Mayor Greg Lewis	<u>X</u>	<u> </u>
Councilwoman Cindy Lewis	<u>X</u>	<u> </u>
Councilwoman Susan Grant	<u>X</u>	<u> </u>

READ AND APPROVED on the first reading following a Public Hearing held at a Regular Meeting of the City Council on the 5 day of December, 2019


BY THE CITY OF LAYTON CITY COUNCIL:

Roll Call	YES	NO
Councilwoman Yesenia Diaz	<u>X</u>	_____
Councilman Philip Porter	<u>X</u>	_____
Vice Mayor Greg Lewis	<u>X</u>	_____
Councilwoman Cindy Lewis	<u>X</u>	_____
Councilwoman Susan Grant	<u>X</u>	_____

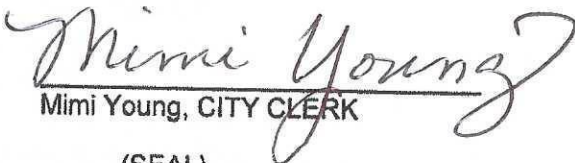
READ AND APPROVED on this Second and Final reading following a Public Hearing held at a Regular Meeting of the City Council of the City Council on the 7th day of May, 2020


BY THE CITY OF LAYTON CITY COUNCIL:

BY:


Bruce Halle,
MAYOR CITY OF LAYTON

ATTEST:


Mimi Young, CITY CLERK
(SEAL)


Gaelen Jones, ATTORNEY

2020 WATER SUPPLY PLAN

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1.0 INTRODUCTION

The purpose of the City of Layton's Water Supply Facilities Work Plan (Work Plan) is to identify and plan for the water supply sources and facilities needed to serve existing and new development within the local government'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) on November 8, 2019. Therefore, the deadline for local governments within the Lower East Coast jurisdiction to amend their comprehensive plans to adopt a Work Plan is May 2020..

Residents of the city of Layton 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 Layton's Work Plan will reference the initiatives already identified in the FKAA 20-year Work Plan since the City is a retail buyer. According to state guidelines, the Work Plan and the comprehensive plan amendment must address the development of traditional and alternative water supplies, bulk sales agreements, and conservation and reuse programs that are necessary to serve existing and new development for at least a 10-year planning period. The City of Layton's Work Plan will be for 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 four sections:

Section 1 – Introduction

Section 2 – Background Information

Section 3 – Data and Analysis

Section 4 – Work Plan Projects/Capital Improvements Element/Schedule

Section 5 – Goals, Objectives, and Policies

1.1 Statutory History

The Florida Legislature enacted bills in the 2002, 2004, 2005, 2011, 2012, 2015, and 2106 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.

In 2011, Sections 163.3177(6)(c)3 and Section 163.3177(6)(d)3, F.S. were modified to exempt water supply planning amendments to the limitation on the frequency of amendments to the comprehensive plan and to include considerations for industrial and agricultural uses when the regional water management district plans for water quantity and quality.

In 2015, Section 163.3177(6)(c)4, F.S. was modified to state that a local government that does not own, operate, or maintain its own water supply facilities and is served by a public water utility with a permitted allocation of greater than 300 million gallons per day is not required to amend its comprehensive plan in response to an updated regional water supply plan or

maintain a work plan if the local government's usage of water is less than 1 percent of the public water utility's total permitted allocation. This exemption does not apply to the FKAA or any of the municipalities served by it.

1.2 Statutory requirements

Each local government must comply with the following requirements:

1. Coordinate appropriate aspects of its comprehensive plan with the appropriate water management district's regional water supply plan, [163.3177(4)(a), F.S.]
2. Ensure that its Future Land Use Plan is based upon availability of adequate water supplies and public facilities and services [s.163.3177(6)(a)2d, 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 no later than the date on which the local government anticipates issuing a certificate of occupancy and consult with the applicable water supplier prior to approving a building permit, 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), 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 projects(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 facilities 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.]
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 the changes described in Paragraphs 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 appropriate regional water supply plan, the applicable District Water Management Plan, as well as applicable consumptive use permit(s), [s 163.3177(6)(d)2b, F.S.]

2.0 BACKGROUND INFORMATION

2.1 Overview

The City of Layton is located at Mile Marker 68.5 along the Overseas Highway on Long Key in Monroe County, Florida. Layton became the third incorporated city in Monroe County in 1963. There are currently approximately 183 permanent residents in the City of Layton with the feasibility of a total peak population of 371 (permanent and seasonal). The City is situated on 84.95 acres and contains approximately 197 units of occupied and vacant housing.

Year	Population
2015	183
2020	185
2025	183
2030	181

Source: Calculated from Monroe County Population Projections, 2010-2030

Geography	April 1, 2010		Population Estimate (as of July 1)					
	Census Estimates Base		2010	2011	2012	2013	2014	2015
Layton city, Florida	184	184	184	185	186	189	189	190

Source: factfinder.census.gov

It is estimated that the City is approximately ~~34.36~~ 36 % built-out, but only ~~9.7~~ 7 % of vacant lands are available for development. The remaining 57% can be described as environmentally sensitive areas. There has been no increase or decrease in land area as a result of annexation.

Land in Layton is limited primarily to residential, commercial, public /institutional and marine related recreation. Development has been limited to single family homes and commercial uses which are located along the Overseas Highway. There are no sites or structures, which can be classified as historic. The approximately 50 acre tract in the southeast quadrant of the City is the only un-platted, vacant parcel remaining in the City and is designated as Conservation on the Future Land Use Map and is owned by the City and is restricted from development

Land Use	Acres	Percent
Residential at 10 DU/Acre	21.73	25.6

Commercial (light retail, office, restaurant and marina)	12.68	14.9
Institutional	2.54	3.0
Vacant	48.00	56.5
Total	84.95	100.0
Source: 2008 EAR Based Comprehensive Plan Amendments: City of Layton		

2.2 Relevant Regional Issues

The Florida Keys Aqueduct Authority (FKAA) faces ever increasing water demands from population growth in the Florida Keys, more stringent environmental protection requirements, and higher customer service expectations. To help address these issues for a 20-year period (from 2006 through 2025) the FKAA has prepared this comprehensive strategic Master Plan.

The purpose of the master Plan is to provide the FKAA with guidance and recommendations on water system capital improvements and expansion programs through 2025. This Master Plan includes recommendations for new facilities or upgrades to existing facilities in water treatment, water supply, transmission, water storage, pumping stations, and distribution. In addition, the master Plan includes a capital improvement program and a financial analysis to help prioritize and sequence the improvements to have as minimal impact on water rates as possible.

The goals and objectives of this strategic plan are focused around the following:

- Improve water supply and treatment reliability
- Improve Transmission and distribution infrastructure
- Provide a long-range financial plan

The 2018 Lower East Coast Water Supply Plan Update listed 5 water supply issues that need to be addressed.

2018 Lower East Coast Water Supply Plan Update

Detailed information on the regional issues can be found in Chapter 7, Water Supply Source Options, of the 2018 Lower East Coast Water Supply Plan Update. Briefly, the water supply issues are as follows:

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. The city will continue to work with the FKAA on alternative water supplies.
2. Surface water allocations from Lake Okeechobee and the Water Conservation Areas are limited in accordance with the Lake Okeechobee Service Area RAA criteria. This issue does not apply to the city.
3. Construction of additional storage systems (e.g., reservoirs, aquifer storage and recovery

systems) to capture wet season flow volumes will be necessary to increase water availability during dry conditions and attenuate damaging peak flow events from Lake Okeechobee. This issue does not apply to the city.

4. Expanded use of reclaimed water is necessary to meet future water supply demands and the Ocean Outfall Law. The city will continue to work with the FKAA to review the feasibility of a reclaimed water system. See section 3.8 Resuse below.

5. Expanded use of brackish groundwater from the Floridan aquifer system requires careful requires careful planning and wellfield management to prevent undesirable changes in water quality. This issue does not apply to the city.

3.0 DATA AND ANALYSIS

3.1 Population Information

The following population information is based on the FCAA as it is the provider of water for the City of Layton. The FCAA serves three distinct populations: permanent residents, seasonal residents (those residing in the keys for 6 months or less), and day visitors. The term “functional population” is a concept that incorporates these three elements of population. Because of the unique nature of the Keys, which has an economy based on seasonal tourism, it is appropriate to use one “population” number that incorporates these three separate population components. For this Plan, the functional population value is used in all per capita calculations and estimates. There are approximately 3.6 people per customer account within FCAA’s service area using functional population as the basis. Population projections developed by the Monroe County Planning Department (MCPD) indicate that the permanent population for the Florida Keys in 2010 was 76,887. By 2030, Monroe County is expected to have a permanent population of 75,500, a seasonal population of 86,855, and a functional population of 162,355.

Year	Functional Population
2015	371
2020	382
2025	386
2030	390

Source: Calculated from Monroe County Population Projections, 2010-2030

Based on the population data maintained by FCAA and population data gathered from the Evaluation and Appraisal Report: City of Layton, it is apparent that the City is a small component of total water use for the FCAA. Table 4.0 lists the percentage of the client population which is related to the City of Layton.

2015	0.24%
2020	0.24%
2025	0.24%
2030	0.24%

Source: Calculated from Monroe County Population Projections, 2010-2030

3.2 Current and Future Areas Served

The service area of the FCAA includes all of Monroe County plus that area in Miami-Dade County within 1 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 the treatment plant. The FCAA does not expect that the distribution facilities on the System will be significantly expanded in Miami-Dade County.

The Florida Keys are comprised of a chain of more than 43 individual islands located at the southern tip of Florida. The FCAA is the only potable water purveyor within the Florida Keys. There are no competing utilities. However, the FCAA is presently precluded by its rules from serving anyone in certain environmentally sensitive areas. Excluded areas are limited to national wildlife Refuges and certain hardwood hammock lands. Additionally, the FCAA is under contract with the U.S. Department of Defense (DoD) to provide up to 2.4 million gallons per day (mgd) of potable water to DoD facilities located at Key West, Boca Chica, and throughout the Keys.

3.3 Potable Water Level of Service Standard

The potable water level of service standard for the FCAA during the next 20 years is presented in Table 5.0. This table also identifies maximum day and average day finished water demands.

Year	Per Capita (gpcd)	Max Day (MGD)	Average Day (mgd)
2015	112.74	21.67	17.76
2020	120.24	23.36	19.14
2025	127.74	25.07	20.54
2030	135.24	26.81	21.97

Source: FCAA 2014 Water Demand With Projections (December 2015)

3.4 Population and Potable Water Demand Projections by Each Local Government of Utility

Table 6.0 shows a comprehensive listing of the functional population served by and the potable water demand projections for the service area of FCAA, the only utility provider for the Florida Keys. Layton, as indicated earlier, is only approximately 0.24% of the client base.

Population		Finished Water Demands		
Year	Functional	Per Capita (gpcpd)	Maximum Day (mgd)	Average Day (mgd)
2015	157,400	112.74	21.67	17.76
2020	159,051	120.24	23.36	19.14
2025	160,703	127.74	25.07	20.54
2030	162,355	135.24	26.81	21.97

Source: Source: FCAA 2014 Water Demand With Projections (December 2015)

This data indicates that sufficient water supply is available to meet the projected demand. Table 7.0, below, represents a calculated finished water demand by the City of Layton.

Population		Finished Water Demand	
Year	Functional	Per Capita (gpcpd)	Average Day (mgd)
2015	371	112.74	0.0418
2020	382	120.24	0.0459
2025	386	127.74	0.0493
2030	390	135.24	0.0527

Source: Calculated from FCAA 2014 Water Demand With Projections (December 2015)

3.5 Water Supply Provided by Local Government

The City of Layton does not provide water. The FCAA is the area service provider.

3.6 Water Supply Provided by Other Entities

The FCAA 20-Year Water System Capital Improvement Master Plan is attached as Appendix A. The intent of the FCAA Plan is to meet the statutory requirements mentioned in subsection 1.2 of this plan and to coordinate water supply initiatives with the SFWMD's *Lower East Coast Water Supply Plan Update*.

The service area of the FCAA includes all of Monroe County plus that area in Miami-Dade County within 1 mile of the transmission pipeline. The service area include 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. The FCAA does not expect that the distribution facilities of the System will be significantly expanded in Miami-Dade County.

The Florida Keys are comprised of a chain of more than 43 individual islands located at the southern tip of Florida. The FCAA is the only potable water purveyor within the Florida Keys. There are no other competing utilities. Additionally, the FCAA is under contract with the U.S. Department of Defense (DoD) to provide up to 2.4 million gallons per day (mgd) of potable water to DoD facilities located at Key West, Boca Chica, and throughout the Keys.

The City of Layton does not provide water. The Florida Keys Aqueduct Authority (FCAA) is their water service provider, and serves about 45,000 water customers in a service area that includes all of the Florida Keys. Due to the Geography of the Florida Keys, operations and maintenance crews and facilities must be located throughout the service area. In addition to operating the water system, these crews respond to line breaks and other service interruptions, perform scheduled preventative maintenance and leak surveys, and maintain facilities and structures.

Water Supply Permitting

FCAA's groundwater withdrawals are regulated by its CUP (13-00005-W) issued by the South Florida Water Management District (SFWMD). FCAA has an annual allocation of 8,751MG

(23.97 mgd) through March 2028.

J. Robert Dean Water Treatment Plant

The J. Robert Dean Water Treatment Plant (WTP) has an ultimate design production capacity of 23.79 million gallons per day (mgd); however, plant production is currently limited by source water constraints. The water treatment process consists primarily of lime softening, filtration, disinfection and fluoridation. In addition to water treatment, the facility has water storage tanks, high service pumping equipment, emergency diesel generators, a communications center for the transmission telemetry monitoring and operating system, and a state-certified water quality testing laboratory.

FCAA's consumptive use permit (CUP #13-00005-W) allows the withdrawal from the Biscayne aquifer of 8,751 MG on an annual basis (equivalent to 23.97 mgd) and 809.0088 MG on a maximum-month basis (equivalent to 26.97 mgd). Pumpage may be increased up to 33.57 mgd for "special events" with proper notice to SFWMD. However, during the dry season of each year (December 1 through April 30), withdrawals from the Biscayne Aquifer are limited to an average daily quantity of 17 mgd (or 2,584 MG for the 5-month period).

The Kermit H. Lewin Reverse Osmosis Facility

The Kermit H. Lewin Reverse Osmosis (RO) Facility, which had been in stand-by mode since 1988, was rehabilitated in 2000. This rehabilitation project brought the facility back on line with production capacity reduced from 3 mgd to 2 mgd. The excess equipment was installed in Marathon, providing 1 mgd of capacity to the middle keys. These facilities were constructed primarily for emergency operations in the event of a major transmission main break.

The Stock Island desalting facility has a nominal capacity of 2 mgd, consisting of four parallel RO membrane trains. Generally, each train is operated approximately 4 hours per month to keep them in operational condition and to allow operations staff the opportunity to remain up-to-date with operational procedures.

Marathon RO Emergency Facility, Marathon, Florida

Similar to the Stock Island RO facility, the Marathon RO plant provides an alternative source of water for the Lower and Middle keys. It serves as an emergency water supply in the event that the major transmission pipeline from the Florida Mainland is out of service. The existing RO seawater desalting plant has a capacity of 1 mgd. There are two 0.5-mgd process trains that were refurbished and relocated from the original desalination plant Stock Island. These trains, however, contain old DuPont membranes and currently produce only approximately 0.9 mgd at a total dissolved solids of between 500 and 1,000 mg/L TDS. They are only used as an emergency water supply water source.

Water Supply Wells

FCAA withdraws the bulk of its water from its ten Biscayne Aquifer wells at the J. Robert Dean WTP. A Floridan aquifer exploratory well at the WTP is used for blending purposes, up to a maximum of 4 percent of the Biscayne Aquifer flow.

In summary, FCAA's projected 2025 average-day finished water demand is 20.54 mgd, and the projected 2025 maximum-day finished water demand is 21.97 mgd. Assuming that Biscayne Aquifer withdrawals are limited to 17.0 mgd during the dry season, 6 mgd can be provided by an LPRO WTP at Florida City; 1 mgd of Floridan aquifer water can be blended at Florida City, which totals approximately 24 mgd. The additional treatment capacity to meet the 25.07 mgd projected demand would need to come from additional LPRO at Florida city, seawater desalination facilities in the lower Keys and Ocean Reef, or potentially subsidized wastewater reuse.

3.7 Conservation

The FCAA's projected 2025 average-day finished water demand is 20.54 mgd, and the projected 2025 maximum-day finished water demand is 25.07 mgd. Assuming that Biscayne Aquifer withdrawals are limited to 17.0 mgd during the dry season, 6 mgd can be provided by an LPRO WTP at Florida City; 1 mgd of Floridan aquifer water can be blended at Florida City, which totals approximately 24 mgd. The additional treatment capacity to meet the 25.07 mgd projected demand would need to come from additional LPRO at Florida city, seawater desalination facilities in the lower Keys and Ocean Reef, or potentially subsidized wastewater reuse.

The city is effectively built-out with:

- 9 single family lots from a total of 154 are available for future development (approximately 12%) and,
- No vacant commercial property is available for development except for reconstruction. Some minor irrigation is used for lawns on the state road right away and maintained by the adjacent property owner.
- The city has promoted landscaping with Florida-friendly landscaping with demonstration areas on city property and discourages the use of water dependent grass lawns and/or non-Florida-friendly landscaping.
- There is only one residential property with a sodded grass lawn that requires periodic water irrigation (approximately 300 square feet).
- The City regularly provides water conservation information via e-mail, brochures and signage.
- The City has not asked for or will it not accept an increase in building allocation which is set at three new Rate of Growth Allocation per year. This is primarily planned to keep the low density community atmosphere but it also provides for limited water and other utility requirements in the future.
- The City finds it confusing when the State of Florida increases the number of building allocations for Monroe County and the local municipalities but than the South Florida Water Management District calls for increased water restrictions on existing property owners and requests local Ordinances to require costly enforce the new restrictions.

The city will:

- Conserve potable water supplies consistent with the City's Water Supply Facilities Work Plan.
- Institute water conservation techniques and programs in cooperation with water utilities managers, South Florida Water Management District, the Florida Keys Aqueduct Authority (FKAA), and Monroe County School Board.
- Promote water conservation through the enforcement of the adopted Florida Building Code which requires such items as low-volume commodes, water flow restrictions for showers and spigots and similar devices in all new construction and renovations, and will comply with the appropriate water management district water use restrictions. Adopt a Year-Round Irrigation Ordinance by November 1, 2020 to encourage more responsible use of water resources.
- Adopt an Ordinance by November 1, 2020 which requires the use water-efficient landscaping in all new development and redevelopment and require functioning rain-sensor devices on all automatic irrigation systems on both new and existing systems.
- Inform residents and businesses of, and shall encourage their participation in, the County's water conservation programs. These information and educational programs shall include the following types of efforts:
 - brochures and signage to be made available at City Hall;
 - pursuing funding through SFWMD Community Education Grant and cooperative funding programs for educational efforts such as demonstration gardens and prototype landscaping on public properties; and,
 - Inviting speakers for forums or workshops at City Hall.
- Continue to cooperate with the Florida Keys Aqueduct Authority (FKAA) and the South Florida Water Management District (SFWMD) in its efforts to restrict the unnecessary consumption of potable water, particularly as it relates to irrigation, lawn watering, and car washing during periods of drought, supply reduction, and other emergencies.
- Adopt an Ordinance by November 1, 2020 to enforce the SFWMD's lawn and landscape irrigation rule, which limits irrigation to three days per week (based on address) between the hours of 12 a.m. to 10 a.m. AND/OR 4 p.m. to 11:59 p.m. with some exceptions, as may be revised. This will follow Chapter 40E-24, Florida Administrative Code.

-
- Encourage the use of low impact development techniques (such as the Florida Water StarSM program, which is a point based, new home certification program for water-efficient developments, like the federal Energy Star program).

Intergovernmental Coordination Element

Policy 1.a: Provide input to regional planning efforts concerning solid waste, potable water, wastewater, transportation, and other multi-jurisdictional issues.

Policy 1.b: The City will maintain a water supply facilities work plan that is coordinated with SFWMD's Lower East Coast Regional Water Supply Plan and Florida Keys Aqueduct Authority (FKAA) by updating its own work plan within 18 months of an update to SFWMD's Lower East Coast Regional Water Supply Plan that affects the City.

Policy 1.c: In accordance with Section 163.3180(2)(a), F.S., the City shall determine whether there will be adequate water supplies to serve the new development prior to approval of a building permit or its functional equivalent. All development is subject to the City's Concurrency Management system. The City shall track current water demand and outstanding commitments in order to determine the availability of an adequate water supply for proposed developments. The City will also ensure that adequate water supplies and facilities are available and in place prior to issuing a certificate of occupancy or its functional equivalent.

3.8 Reuse

The FKAA is currently – and will in the future – evaluating the feasibility of implementing wastewater reuse to offset some of the increasing potable water demands. However, the cost associated with the lack of large volume Keys irrigation users (such as golf courses), and the limited availability of other smaller Keys irrigation users who have suitable areas to irrigate make this alternative a challenge to implement in the Keys. Wastewater reuse will need to be subsidized for reuse to be a viable alternative water supply source to help offset increasing Keys potable water demands. If wastewater reuse is subsidized to provide a reuse rate of \$3.20/1,000 gallons), wastewater reuse from residential connections alone could potentially help to offset increasing potable water demands by at least 1.25 mg. Commercial wastewater reuse amount even more. Although subsidized wastewater reuse is considered to have great potential to help offset increasing potable water demands, wastewater reuse is not currently included in this Master Plan as an alternative water supply source because actual quantities of reuse water have not been fully evaluated.

Because of recent regulatory trends, it is unlikely that FKAA will be able to rely on the Biscayne Aquifer to meet its future needs for additional water. SFWMD's Lower East Coast Regional Water Supply Plan advocated the use of the Floridan Aquifer as an alternative supply, either for aquifer storage and recovery, (ASR) or for direct withdrawals for blending or RO. Approximately 17 mgd to 20 mgd of the FKAA's future water supply will be provided by the Biscayne Aquifer water supply to include an ultimate 6 mgd Low Pressure Reverse Osmosis (LPRO) using the Floridan Aquifer at the J. Robert Dean site, an ASR well at the same site is already under construction, and upgrades to the two existing desalination plants are in the planning stages.

Another alternative supply that was considered to offset increased water demands is wastewater reuse. The advantage to wastewater reuse is that it will offset increasing water demands, but the cost associated with the lack of large-volume Keys irrigation users (such as golf courses) and the limited availability of other small Keys irrigation users who have suitable areas to irrigate make this alternative a challenge to implement in the Keys. Wastewater reuse will need to be subsidized for reuse to be a viable alternative water supply source to help offset increasing keys potable water demands. If wastewater reuse is subsidized to provide a reuse rate of \$3.20/1,000 gallons (75 percent of the lowest FKAA potable water consumption block rate of \$4.26/1,000 gallons), wastewater reuse from residential connections alone could potentially help to offset increasing water demands by at least 1.25 mgd. Commercial wastewater reuse (reuse from resorts, parks, and municipal complexes) will increase the wastewater reuse amount even more. Although subsidized wastewater reuse is considered to have great potential to help offset increasing potable water demands, wastewater reuse is not currently included as an alternative water supply source because actual quantities of reuse water have not been fully evaluated.

In summary, FKAA's projected 2025 average-day finished water demand is 23.88 mgd, and the projected 2025 maximum-day finished water demand is 29.85 mgd. Assuming that the Biscayne Aquifer withdrawals are limited to 17.0 mgd during the dry season, 6 mgd can be provided by an LPRO WTP at Florida City; 1mgd of Floridan Aquifer water can be blended at Florida City, which totals approximately 24 mgd. The additional treatment capacity to meet the 29.85 mgd projected demand would need to come from additional LPRO at Florida City, seawater desalination facilities in the lower Keys and Ocean Reef, or potentially subsidized wastewater reuse.

4.0 CAPITAL IMPROVEMENTS

4.1 Work Plan Projects

The FCAA 20-Year Water System Capital Improvement Plan (CIP) contains detailed information regarding work plan projects. The CIP identifies many short- and long-term improvements to the water transmission, distribution, water storage, raw water supply, and the water treatment plants. Significant upgrades and proposed new facilities to the water treatment plants are planned to improve the reliability and quality of FCAA's drinking water. Major improvements to the water system include a new Floridan aquifer wellfield that will serve a new LPRO treatment facility at the J Robert Dean WTP in Florida City, multiple rehabilitation or upgrade projects at both the Kermit H. Lewin Desalination WTP and the Marathon Desalination WTP facility to increase reliability and capacity to meet emergency and peak day flows, and various transmission/distribution line replacements, distribution pump station upgrades, and improved water storage tanks to improve delivery capacity of the system. Exhibit 7-2 shows all planned project improvements from 2006 through 2025 and associated order of magnitude cost estimates.

4.2 Capital Improvements Element/Schedule

In 2006, the FCAA identified all public and private projects and programs necessary during the next twenty years to achieve and maintain adopted LOS standards. There are ten years remaining within this initial planning time period, which has not been updated since its adoption in 2006. These projects are included in the financially feasible twenty-year Schedule of Capital Improvements for the service area in Exhibit 7-2 of the 2006 FCAA 20-Year Water System Capital Improvement Master Plan. The CIP is contained within Appendix 1 of this report.

5.0 GOALS, OBJECTIVES, AND POLICIES

Future Land Use Element

- **3.5.1 City Goal Statement:** Maintain the residential character of Layton, manage the rate of development and population growth to promote small-town ambiance, improve quality of life for residents, comply with adopted level of service standards for public facilities, effectively time public infrastructure and services according to the availability and in accordance with the adopted carrying capacity study and ROGO, along with a mixture of non-residential uses that will provide conveniences and recreation for residents and tourists while enhancing and protecting natural resources and environmental quality unique to the Florida Keys, including wetlands. *[Amended by Ord. 2003-09-01]. The City will Adopt an Ordinance by November 1, 2020 to enforce the SFWMD's lawn and landscape irrigation conservation rule, which limits irrigation to three days per week (based on address) between the hours of 12 a.m. to 10 a.m. AND/OR 4 p.m. to 11:59 p.m. with some exceptions, as may be revised. This will follow Chapter 40E-24, Florida Administrative Code.*

OBJECTIVE 2: Future growth and development shall be managed through the preparation, adoption, implementation and enforcement of land development regulations which:

- (1) coordinate future land uses with the appropriate topography, soil conditions and the availability of facilities and services; and
- (2) encourage the prevention, elimination or reduction of uses inconsistent with the Future Land Use Plan.

Policy 2.a: Ensure that land development regulations contain provisions required to implement the adopted *Comprehensive Plan*, and which at a minimum:

- Regulate the subdivision of land;
- Regulate the use and intensity of land development consistent with this Element in a manner to ensure the compatibility of adjacent land uses;
- Requiring adequate drainage and storm water management;
- Regulate signage; - Ensure safe and convenient on-site traffic flow and vehicle parking needs;
- Ensure that public facility, utility and service authorization has been procured prior to issuing any development order;
- Provide that development orders and permits shall not be issued which result in a reduction of the level of services for the affected public facilities below the level of service standards adopted in this *Comprehensive Plan*; and

Policy 2.c: All development orders and permits for future development and redevelopment activities shall be issued only if public facilities necessary to meet level of service standards are available concurrent with the impacts of the development. Further, require that all on-site lands for rights-of-way, easements, etc., be conveyed to the proper authority prior to final project approval. The City shall amend its Land Development Regulations to require that the adopted level of service standards contained in this plan are met or exceeded by new development beginning no later than 12 months from adoption of this Plan.

Policy 2.e: The City shall ensure that prior to approval of a building permit the City will consult with the FCAA, water supplier for the City, to determine whether adequate water supplies to serve the new development will be available no later than the anticipated date of issuance by the City of a certificate of occupancy.

Policy 3.a: Requests for development orders, permits or project proposals shall be coordinated, as appropriate, with Monroe County, South Florida Regional Planning Council, Special Districts, South Florida Water Management District and State and Federal Agencies.

Infrastructure Element, adopted 08/12/2018

OBJECTIVE 1: The City shall ensure through the land development approval process that, at the time a development order or permit is issued, adequate public facility capacity is available or will be available at the time of occupancy.

Policy 1.a: Through the various review and approval processes contained in this Plan and the City's development regulations, ensure that existing levels of service are maintained.

Policy 1.b: Below are the Level of Service Standards of the City, which correspond to the Standards adopted for the regional systems serving the City under the jurisdiction of Monroe County:

Facility:	Minimum Level of Service Standard
Wastewater:	Accommodate an average daily flow of at least 115 gallons per household per day.
Water:	LOS for potable water will be consistent with the FCAA 20-Year Water System Capital Improvement Master Plan and will be a minimum of 114.08 gallons per capita day (gpcd).
Solid Waste:	Collection. Twice weekly for residential. Once weekly for bulk trash.
Drainage:	Level of service needs to be established.

OBJECTIVE 2: Maintain or enhance existing levels of service, and coordinate with applicable governmental agencies.

Policy 2.e: Maintain coordination between the City and appropriate agencies as regards quality maintenance and operation of the regional water supply system. Through its periodic newsletters to residents and businesses, the City will inform potable water users of the need to conserve water and methods to achieve conservation.

Policy 2.h: The City shall undertake its responsibilities under Water Shortage Emergency Provisions, established under Chapter 40E-21, *Florida Administrative Code* upon declaration of a water shortage emergency by the South Florida Water Management District.

Policy 2.i: Florida Friendly Landscaping practices shall be promoted by the City when considering proposals for development and/or redevelopment.

Policy 2.j: The City hereby adopts the 2016 10-Year Water Supply Facilities Work Plan to increase the coordination between land use and future water supply planning as required by Chapter 163, State Statutes and incorporated within the Comprehensive Plan as Exhibit 1.0.

Policy 2.k: In order to protect and preserve water, the City will investigate utilization of alternate potable water resources to supplement the City's future water supply sources.

Policy 2.l: The City will promote water conservation through the enforcement of the adopted Florida Building Code which requires such items as low-volume commodes, water flow restrictions for showers and spigots and similar devices in all new construction and renovations, and will comply with the appropriate water management district water use restrictions.

Policy 2.m: The City shall adopt an Ordinance which requires the use water-efficient landscaping in all new development and redevelopment, and require functioning rain-sensor devices on all automatic irrigation systems on both new and existing systems.

Policy 2.n: The City shall inform residents and businesses of, and shall encourage their participation in, the County's water conservation programs. These information and educational programs shall include the following types of efforts:

- a. brochures and signage to be made available at City Hall;
- b. pursuing funding through SFWMD Community Education Grant and cooperative funding programs for educational efforts such as demonstration gardens and prototype landscaping on public properties; and,
- c. Inviting speakers for forums or workshops at City Hall.

Policy 2.o: The City will continue to cooperate with the Florida Keys Aqueduct Authority (FKAA) and the South Florida Water Management District (SFWMD) in its efforts to restrict the unnecessary consumption of potable water, particularly as it relates to irrigation, lawn watering, and car washing during periods of drought, supply reduction, and other emergencies.

Policy 2.p: The City will enforce the SFWMD's lawn and landscape irrigation rule, which limits irrigation to two days per week (based on address) between the hours of 12 a.m. to 10 a.m. AND/OR 4 p.m. to 11:59 p.m. with some exceptions, as may be revised. Th

Policy 2.q: The City shall coordinate local water conservation education efforts with the SFWMD, the Florida Keys Aqueduct Authority (FKAA), and the Monroe County School Board.

Policy 2.r: The City will encourage the use of low impact development techniques (such as the Florida Water Star™ program, which is a point based, new home certification program for water-efficient developments, similar to the federal Energy Star program).

Policy 2.s: The City shall develop a leak detection and repair program for all City facilities by the end of 2009. It shall also encourage its citizens to adopt such a program for their own individual properties.

OBJECTIVE 6: Coordinate with the FCAA to promote potable water conservation practices and to help ensure that existing and future potable water needs are met.

Policy 6.a: Cooperate with the Florida Keys Aqueduct Authority in its efforts at developing an efficient potable water supply and distribution system.

Policy 6.b: Discourage wasteful use of water while encouraging conservation methods and practices. Implement water use restrictions when applied by the South Florida Water Management District during water shortage emergencies.

OBJECTIVE 7: The City of Layton shall ensure that at the time a development permit is issued that involves multiple water connections, adequate potable water supply, treatment, and distribution facilities are available.

Policy 7.a: The LOS standards below shall serve as the City's standards for determining facility capacity and the demand generated by a development. Ensuring the achievement of these LOS standards shall be coordinated with the Florida Keys Aqueduct Authority.

- a) Quantity: Overall LOS 114.08 gallons per capita day
- b) Minimum pressure: 20 psi at customer service

Policy 7.b: In accordance with Section 163.3180(2)(a), F.S., the City shall determine whether there will be adequate water supplies to serve the new development prior to approval of a building permit or its functional equivalent. All development is subject to the City's Concurrency Management system. The City shall track current water demand and outstanding commitments in order to determine the availability of an adequate water supply for proposed developments. The City will also ensure that adequate water supplies and facilities are available and in place prior to issuing a certificate of occupancy or its functional equivalent.

Conservation Element

OBJECTIVE 3: Conserve potable water supplies consistent with the City's Water Supply Facilities Work Plan.

Policy 3.a: Institute water conservation techniques and programs in cooperation with water utilities managers, South Florida Water Management District, the Florida Keys Aqueduct Authority (FCAA), and Monroe County School Board.

Policy 3.b: The City will promote water conservation through the enforcement of the adopted Florida Building Code which requires such items as low-volume commodes, water flow

restrictions for showers and spigots and similar devices in all new construction and renovations, and will comply with the appropriate water management district water use restrictions.

Policy 3.c: The City shall adopt an Ordinance which requires the use water-efficient landscaping in all new development and redevelopment, and require functioning rain-sensor devices on all automatic irrigation systems on both new and existing systems.

Policy 3.d: The City shall inform residents and businesses of, and shall encourage their participation in, the County's water conservation programs. These information and educational programs shall include the following types of efforts:

- a. brochures and signage to be made available at City Hall;
- b. pursuing funding through SFWMD Community Education Grant and cooperative funding programs for educational efforts such as demonstration gardens and prototype landscaping on public properties; and,
- c. Inviting speakers for forums or workshops at City Hall.

Policy 3.e: The City will continue to cooperate with the Florida Keys Aqueduct Authority (FKAA) and the South Florida Water Management District (SFWMD) in its efforts to restrict the unnecessary consumption of potable water, particularly as it relates to irrigation, lawn watering, and car washing during periods of drought, supply reduction, and other emergencies.

Policy 3.f: The City will enforce the SFWMD's lawn and landscape irrigation rule, which limits irrigation to two days per week (based on address) between the hours of 12 a.m. to 10 a.m. AND/OR 4 p.m. to 11:59 p.m. with some exceptions, as may be revised.

Policy 3.g: The City will encourage the use of low impact development techniques (such as the Florida Water StarSM program, which is a point based, new home certification program for water-efficient developments, similar to the federal Energy Star program).

Intergovernmental Coordination Element

Policy 1.b: Provide input to regional planning efforts concerning solid waste, potable water, wastewater, transportation, and other multi-jurisdictional issues.

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in order to determine the availability of an adequate water supply for proposed developments. The City will also ensure that adequate water supplies and facilities are available and in place prior to issuing a certificate of occupancy or its functional equivalent.

OBJECTIVE 2: The City will coordinate the impacts of proposed development with appropriate public agencies. The City will coordinate with state, regional, or local entities in establishing level of service standards for facilities where such entity has operational or maintenance responsibilities for the facility.

OBJECTIVE 1: The City will coordinate land use and fiscal decisions with a schedule of capital improvements that may be needed in a manner that identifies the linkage of levels of service with expenditures.

Policy 2.c: Through the development review process, the City will ensure that projects will not cause levels of service to fall below those stated below as a result of the development's impact:

Facility	Level of Service
Recreation:	2 acres of park/open space per 1,000 population.
Traffic:	24 hour and peak hour Levels of Service for local roads are B/B, or 10,000 daily trips and 1,000 peak hour trips.
Potable Water:	Overall LOS 114.08 gallons per capita day.
Wastewater:	Accommodate an average daily flow of at least 115 gallons per household per day.
Drainage:	

The following level of service (LOS) standard shall be maintained by all new development: All new development shall provide management and storage of stormwater events sufficient to meet the 100-year storm event; three-day duration for commercial development; and roads shall meet the five-year storm event, 24 hours' duration.

(1)

Post development runoff shall not exceed the predevelopment runoff rate for a 25-year storm event, up to and including an event with a 24-hour duration;

(2)

Stormwater treatment and disposal facilities shall be designed to meet the design and performance standards established in F.A.C. 62-25.025 with treatment of the runoff from the first one inch of rainfall on site to meet the water quality standards required by F.A.C. 62-302.500; and

(3)

Stormwater facilities which directly discharge into Outstanding Florida Waters (OFW) shall provide an additional treatment pursuant to F.A.C. 62-25.025(9). Stormwater facilities must be designed so as

to not degrade the receiving water body below the minimum conditions necessary to assure the suitability of water for the designated use of its classification as established in F.A.C. ch. 62-302.