

# **Part 1 – Potable Water**

## **November 2025**

**City of Margate - Comprehensive Plan Amendment**

**Element III**

**Sanitary Sewer, Solid Waste, Drainage, Potable Water & Natural  
Groundwater Aquifer Recharge**

**Hazen and Sawyer**

Revisions to reflect new language and replaces text from the 2025 Water Supply Plan Update:

**1) Population Figures**

- a) Original: "approximately 62,300 people"
- b) Revised: "approximately 58,927 residents"

Note: 58,927 represents municipal boundaries only.

Additional Detail: Entire service area (including Coconut Creek) = 67,341 people based on 2025 Broward County PFAM TAZ projections.

**2) City Size**

- a) Original: "10.7 square miles"  
Note: This included Margate and part of Coconut Creek.
- b) Revised for clarification: "9.17 square miles"  
Note: Represents only Margate's municipal boundaries.

**3) Service Connections**

- a) Original: "17,004 service connections"
- b) Revised: "16,982 service connections"

**4) Water Supply Forecast Period**

- a) Original: "forecasted populations and water demands are provided in Section 4 of the 2020 update"
- b) Revised: Corrected to 2025 update

**5) Expanded Description of Water System**

- a) Added: "The City's Department of Environmental and Engineering Services (DEES) currently owns and operates the potable water supply and wastewater treatment facilities..."

**6) C-51 Reservoir Operational Status**

- a) Original: "The reservoir is expected to become fully operational by September 2022"
- b) Revised: "The C-51 Reservoir became operational in March 2024..."

**7) Existing Facilities**

- a) Added: "two ground storage tanks located at the WTP facility (2.0-million-gallon (MG) concrete and 1.9 MG steel tank);"

**8) Water Use Permit Modification Details**

- a) Added: "In the City's permit modification application, which was approved by the SFWMD on September 2, 2020, the City requested that 1.57 mgd of this 2.00 mgd be used as offset water..."

**9) Updated Water Withdrawal Capacity**

- a) Added: "This offset allows the City to withdraw an annual average daily quantity of 10.10 mgd and an annual average daily maximum month quantity of 11.09 mgd."

**10) Forecast Period for Adequacy of Water Supply**

- a) Original: "During the period 2020 to 2040"
- b) Revised: "During the period 2025 to 2045"

**11) Capital Improvements**

- a) Original: Added: "The City's capital improvement projects include the purchase of water storage

from the C-51 Reservoir...”

- b) Revised: “The proposed CIP list has been drafted to address current needs; however, it will be revised periodically to reflect upcoming priorities and evolving regulatory or operational requirements”

## **12) Performance Assessment Timeline**

- a) Original: “Every five years after the year 2020”
- b) Revised: “Every five years after the year 2025”

**Note, all tracked revisions are shown in strike through (old) and underlined (new).**

## 1. Service Area

The City of Margate provides water services to approximately 62,300 people located within the City limits of the City of Margate and the southern portion of the City of Coconut Creek. within both the municipal boundary, and its broader utility service area. The service area encompasses 10.7 square miles and the land use is predominantly residential. The City owns and maintains the entire water supply, treatment, and distribution system, and is the sole entity responsible for planning, financing, constructing, and operating the facilities that supply water within its service area. The incorporated City limits encompass 9.17 square miles and includes a population of approximately 58,927 residents. In addition to serving customers within Margate, the City also provides potable water to the southern portion of the City of Coconut Creek. When including this additional service area, the total water utility service area covers 10.7 square miles and serves approximately 67,341 people, based on the 2025 Broward County PFAM TAZ population projections.

Land use within the municipal boundary and the extended service area is predominantly residential. The City owns and maintains the entire water supply, treatment, and distribution system, and is the sole entity responsible for planning, financing, constructing, and operating the facilities that supply water within its service area.

In 1957, a private utility company, the Margate Utilities Corp., was established and the City's first water treatment plant and distribution system was built. In June 1968, the company was sold to the Margate Utility Authority (MUA), a not-for-profit corporation. In 1977, the City assumed the operation of the utility and MUA's debt. The City's Department of Environmental and Engineering Services (DEES) currently owns and operates the potable water supply and wastewater treatment facilities serving the entire geographical area within the City's corporate limits and a portion of the City of Coconut Creek. The detailed service area boundary map is provided in Figure III-1. The City and its water service area are primarily residential with a mix of apartments, condominiums, single-family homes, shopping centers, schools, and health care facilities.

## 2. Population and Water Consumption

Population projections and the average historic five-year water demand per person per day were used to forecast water demand within the City's water service area. The historic and forecasted populations and water demands are provided in Section 4 of the 2020 2025 update to the City of Margate Water Supply Facilities Work Plan (Work Plan) provided in Attachment - A.

## 3. Existing Facilities

The raw water source for the City's water system is the Biscayne Aquifer, a porous underground formation that underlies most of Miami-Dade, Broward, and Palm Beach Counties. The Biscayne Aquifer has been designated as a "sole source" of drinking water supply for Southeastern Florida by the United States Environmental Protection Agency.

In addition to direct rainwater recharge, the aquifer receives stored fresh water from Lake Okeechobee and the interior Conservation Areas through a system of canals owned and operated by the South Florida Water Management District (SFWMD). These canals are

hydrologically linked to the shallow aquifer. Except for the relatively high calcium hardness and occasionally high iron content, the Biscayne Aquifer water is suitable for most domestic, commercial, and industrial uses.

The City's water system includes a 13.5-million gallon per day (mgd) water treatment plant (WTP) fed with raw water from 12 Biscayne Aquifer wells; a water distribution system with 213.4 miles of distribution mains; two ground storage tanks located at the WTP facility (2.0-million-gallon (MG) concrete and 1.9 MG steel tank); a remote 2-million-gallon (MG) water storage tank facility, and four interconnects with neighboring municipalities. The distribution system includes ~~47,004~~ 16,982 service connections to residential, commercial, and local government customers.

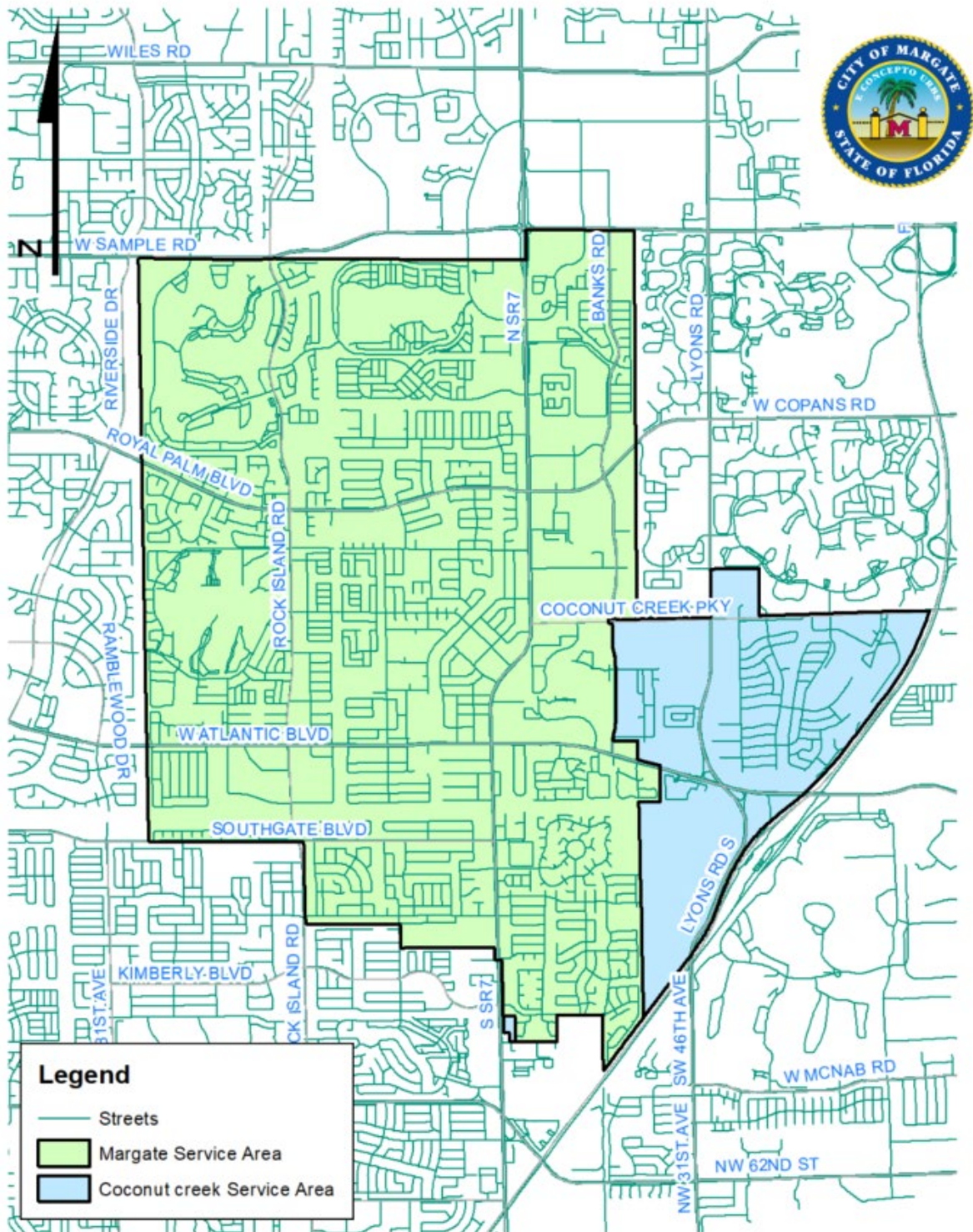


Figure III-1: City of Margate's Water Service Area Boundaries

#### 4. Water Supply

The raw water quantities permitted to be pumped from the City's wellfield are governed by the SFWMD. Currently, the City may withdraw up to an annual average daily quantity of 8.53 mgd from the Biscayne aquifer through its 12 withdrawal wells. This quantity represents the City's "base condition water use". Under the SFWMD's Regional Water Availability (RWA) Rule adopted on February 16, 2007, raw water withdrawals from the Biscayne Aquifer are limited to the permittee's "base condition water use" which is defined as the basis for establishing permitted water quantities. For a water utility, the "base condition water use" is the maximum quantity of water withdrawn by the applicant from the permitted source during any consecutive twelve-month period during the five years preceding April 1, 2006.

Withdrawals from the Biscayne aquifer above the established base condition water use are only authorized if the Permittee has received the required offset water from an alternative water supply to prevent an increase in volume or change in timing of surface and groundwater withdrawn from the Lower East Coast Everglades Waterbodies over the base condition water use. After the year 2040, the City's forecasted raw water demand will be greater than its "base condition water use". Withdrawals from the Biscayne aquifer above the established base condition water use are only authorized if the Permittee has received the required offset water to prevent an increase in volume or change in timing of surface and groundwater withdrawn from the Lower East Coast Everglades Waterbodies over the base condition water use.

On December 4, 2019, the City signed a capacity allocation agreement for 2.00 mgd of storage capacity in the C-51 Reservoir that will allow the City to withdraw an additional estimated 2.00 mgd from its wellfield, once the reservoir becomes operational. In its recent water use permit modification application, which was approved by the SFWMD on September 2, 2020, the City requested that 1.57 mgd of this 2.00 mgd be used as offset water to supply future water demands through 2065. This offset will allow the City to withdraw an annual average daily quantity of 10.10 mgd and an annual average daily maximum month quantity of 11.09 mgd. The reservoir is expected to become fully operational by September 2022 at which time the City will be able to withdraw all of its allocated 10.10 mgd. The C-51 Reservoir became operational in March 2024. In the City's permit modification application, which was approved by the SFWMD on September 2, 2020, the City requested that 1.57 mgd of this 2.00 mgd be used as offset water to supply future water demands through 2065. This offset allows the City to withdraw an annual average daily quantity of 10.10 mgd and an annual average daily maximum month quantity of 11.09 mgd. The C-51 Reservoir, Phase 1, is fully operational and the City is able to withdraw all of its allocated 10.10 mgd from the City wellfield.

## **5. Adequacy of Water Supply through 2045**

During the period ~~2020~~ 2025 to ~~2040~~ 2045, the forecast of average daily raw water withdrawals from the City's Biscayne Aquifer wellfield is below the City's base condition water use. ~~Once the~~ The operational C-51 Reservoir becomes operational permits water withdrawals from the Biscayne aquifer to increase to 10.10 mgd providing sufficient water supply through 2040 and beyond. During the period 2020 2025 to 2040 2045, there is enough water treatment capacity available to supply the forecasted water demand the forecast of average daily raw water withdrawals from the City's Biscayne Aquifer wellfield is less than the City's raw water

withdrawal limit.

## **6. Water Supply Capital Improvements**

~~The City's capital improvement projects include the purchase of water storage from the C-51 Reservoir in an amount that will provide 2.00 mgd of water supply on an annual average daily basis. This water supply will be used as offset water to support additional permitted withdrawals from the Biscayne aquifer to supply the future water demands of the City's water service area through the year 2065. Other than capacity from the C-51 Reservoir, all capital improvement items included in the City's five-year capital improvement plan are intended to replace and rehabilitate the existing water infrastructure as components reach the end of their useful lives.~~  
The City's capital improvement projects includes multiple facility upgrades and rehabilitation projects. The fiscal year (FY) 2026 approved five-year capital improvement plan is provided in Attachment A. All capital improvement items are intended to replace and rehabilitate the existing water infrastructure as components reach the end of their useful lives. The proposed CIP list has been drafted to address current needs; however, it will be revised periodically to reflect upcoming priorities and evolving regulatory or operational requirements.

## **7. Performance Assessment**

The following measures are established to assess the performance of the water system:

Meet or exceed all existing federal, State, and local water quality standards.

Every five years after the year ~~2020~~ 2025, prepare an annual utility report to evaluate the operational and fiscal status of the water system.

Evaluate treatment and water use permit capacity annually and implement appropriate measures to address deficiencies, if any.

## **8. Goals, Objectives, and Policies**

All goals, objectives, and policies related to Part I - All goals, objectives, and policies related to Part I - Work Plan provided as **Attachment – A**.