M E M O R A N D U M

TO: Governing Board Members

FROM: Lawrence Glenn, Director, Water Resources Division

DATE: October 10, 2019

SUBJECT: Final Order Amending Appendix C of the 2017 Lower West Coast Water Supply Plan Update

Summary

Water supply plans must include the recovery or prevention strategy for any minimum flow or minimum water level (MFL) adopted in the region. When a MFL is revised, the water management district must review the recovery or prevention strategy and simultaneously modify the existing recovery or prevention strategy, if necessary. The recovery strategy for the Caloosahatchee MFL, incorporated into the 2017 Lower West Coast (LWC) Water Supply Plan Update, Appendix C, was reviewed based on the revised MFL criteria. District staff determined these changes necessitate a modification of the existing Caloosahatchee MFL Recovery Strategy.

The proposed revisions to Appendix C were discussed at the Caloosahatchee MFL rule development workshop held on September 20, 2019. The public was given the opportunity to comment on the modified Caloosahatchee MFL Recovery Strategy. Comments were evaluated and incorporated into the final draft where appropriate.

Additional Background

The Caloosahatchee MFL Recovery Strategy presently includes: the Caloosahatchee River West Basin Storage Reservoir (C-43 Reservoir) and a water reservation for the C-43 Reservoir. Based on the Governing Board's direction to engage stakeholders, District staff recommended revising the proposed MFL rule to increase the minimum flow component of the Caloosahatchee MFL. This recommended increase necessitates a modification of the Caloosahatchee MFL recovery strategy. The modified recovery strategy includes implementation of a research and monitoring plan; completion of construction of the C-43 Reservoir; development of a water control plan for the C-43 Reservoir; evaluations to determine if additional storage is needed; identification, design, and construction of potential projects, to provide additional storage, as needed; and an implementation timeline.

The Caloosahatchee River MFL Recovery Strategy is an inseparable component of the Caloosahatchee River MFL. The District would not have adopted the revisions to the Caloosahatchee River MFL without simultaneously modifying said recovery strategy. If any portion of the proposed amendments to Subsection 40E-8.221(2), F.A.C., is found invalid, the revised Caloosahatchee River MFL Recovery Strategy shall not be approved until the District further amends Subsection 40E-8.221(2), F.A.C., and the 2017 LWC Water Supply Plan Update, Appendix C, to address the reason for invalidity.

Core Mission and Strategic Priorities

The approval of this amendment to Appendix C of the 2017 LWC Water Supply Plan Update will support the District's responsibility under Chapter 373, F.S., and its mission to sustain the water resources of the Caloosahatchee River.

Funding Source
Implementation of the research and monitoring plan, evaluations, and water resource development projects identified in the District's regional water supply plans are funded through a combination of local, District, and state funds, as appropriate.

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BEFORE THE GOVERNING BOARD OF THE
SOUTH FLORIDA WATER MANAGEMENT DISTRICT

ORDER NO.: 2019-_____-DAO-WU

IN THE MATTER OF:

APPROVAL OF 2019 AMENDMENT
TO APPENDIX C OF THE 2017 LOWER
WEST COAST WATER SUPPLY PLAN
UPDATE
_____/

FINAL ORDER ON 2019 AMENDMENT TO APPENDIX C OF THE 2017 LOWER WEST COAST WATER SUPPLY PLAN UPDATE

The Governing Board of the South Florida Water Management District ("District"), after considering the recommendations of District staff and being otherwise fully apprised of the matter, issues this Final Order containing the following Findings of Fact and Conclusions of Law.

FINDINGS OF FACT

1. In December 2017, the Governing Board approved an update to the Lower West Coast Water Supply Plan ("2017 LWC Plan"), which included a minimum flow and recovery strategy for the Caloosahatchee River.[1]

2. Water supply plans must be based on at least a 20-year planning period and include: a) water supply and water resource development components; b) a funding strategy for water resource development projects; c) minimum flows and minimum water levels ("MFLs") established within the planning region; d) a MFL recovery or prevention strategy; and e) technical data and information supporting the plan.[2]

3. In 2010, District staff received Governing Board direction and funding to implement 11 new research studies on the Caloosahatchee River to re-evaluate the existing

[1] South Florida Water Management District Order No.: 2017-088-DAO-WU.
[2] § 373.709(2), Fla. Stat. (2019).

Caloosahatchee River MFL. In 2016, the 11 studies were presented for public review and technical input. In 2017, an independent panel of experts reviewed the draft Technical Document supporting the draft rule criteria along with the MFL re-evaluation approach and concurred with its findings.

4. Based on the technical work, public input, and direction from the Governing Board, the District began the formal rule development process in 2017 to revise the Caloosahatchee River MFL. Based on the scientific studies, monitoring, modeling, technical evaluations, peer review, legal challenge, and public input, staff proposed increasing the MFL flow criteria at the S-79 structure from 300 cubic feet per second (cfs) to 457 cfs, revising the duration and return frequency components of the MFL criteria, and modifying the Caloosahatchee MFL recovery strategy.

5. District staff presented the proposed rule text to the District's Governing Board for consideration and adoption at its October 2019 public meeting. The proposed rule text requires a corresponding amendment to the 2017 LWC Plan.

6. The 2019 Amendment to Appendix C of the 2017 LWC Plan is limited in scope, modifying the Caloosahatchee River MFL recovery strategy. The modified recovery strategy includes implementation of a research and monitoring plan; completion of construction of the C-43 Reservoir; development of a water control plan for the C-43 Reservoir; evaluations to determine if additional storage is needed; identification, design, and construction of potential projects to provide additional storage, as needed; and a timeline to implement the recovery strategy. A copy of the 2019 Amendment to Appendix C of the 2017 LWC Plan is attached hereto as Exhibit A. No other amendments are proposed.

7. The 2017 LWC Plan may be amended or updated, as appropriate, based on new technical information and analyses. Updates to water supply plans are required every 5 years.[3]

[3] Fla. Admin. Code R. 62-40.531(8).

CONCLUSIONS OF LAW

8. Water management districts are authorized to undertake regional water supply planning efforts, including updating existing plans.[4] Water supply plans must include recovery and prevention strategies for adopted MFL waterbodies.[5]

9. Rule 62-40.473, Fla. Admin. Code, requires simultaneous modification of the recovery strategy when the associated MFL is revised, if necessary.

10. The Governing Board concludes that the 2019 Amendment to Appendix C of the 2017 LWC Plan meets the requirements of Section 373.709, Fla. Stat., and Rule 62-40.473, Fla. Admin. Code.

11. While the Governing Board's approval of a water supply plan is not subject to rulemaking requirements, any portion of an approved water supply plan that affects the substantial interests of a party is subject to Section 120.569, Fla. Stat.[6] Therefore, a Notice of Rights is attached as Exhibit B.

12. Exhibit B does not cover future Governing Board actions to implement the 2019 Amendment to Appendix C of the 2017 LWC Plan. The 2019 Amendment to Appendix C of the 2017 LWC Plan is not a self-executing document. It is not intended to affect the substantial interest of any party. Future Governing Board action is required to implement the 2019 Amendment to Appendix C of the 2017 LWC Plan. When implementing action is taken, the Governing Board shall offer an appropriate point of entry to substantially affected parties. To the extent the 2019 Amendment to Appendix C of the 2017 LWC Plan, or any portion thereof, is relied upon to support

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[4] § 373.709(1), Fla. Stat. (2019).
[5] § 373.709(2)(c), Fla. Stat. (2019); Fla. Admin. Code R. 62-40.531(6).
[6] § 373.709(5), Fla. Stat. (2019).

a future Governing Board action, a challenge to the implementing action may also challenge the supporting material contained in the 2017 LWC Plan.

13. This 2019 Amendment to Appendix C of the 2017 LWC Plan is restricted in scope, solely modifying the Caloosahatchee River MFL recovery strategy pursuant to Subsection 373.709, Fla. Stat., to include a research and monitoring plan; completion of construction of the C-43 Reservoir; development of a water control plan for the C-43 Reservoir; evaluations to determine if additional storage is needed; identification, design, and construction of potential projects to provide additional storage, as needed; and a timeline to implement the recovery strategy.

14. This Amendment does not constitute an update of the 2017 LWC Plan pursuant to the 5-year update requirements in Section 373.709, Fla. Stat., and does not trigger local government requirements in Subsection 163.3177(6)(c), Fla. Stat. Updates shall occur in accordance with Section 373.709, F.S., no later than 5 years from the date of entry of 2017-088-DAO-WU.

15. The Governing Board delegated authority to execute this Final Order to the Executive Director and General Counsel.[7]

ORDER

Based upon these Findings of Fact and Conclusions of Law, it is hereby ORDERED:

16. The Caloosahatchee River MFL Recovery Strategy is an inseparable component of the Caloosahatchee River MFL. The District would not have proposed the revisions to the Caloosahatchee River MFL Recovery Strategy but for the proposed amendments to Rule 40E-8.221, Fla. Admin. Code. If any portion of the proposed amendments to Rule 40E-8.221, Fla.

[7] *South Florida Water Management District Policies and Procedures*, § 101-22(b).

Admin. Code, is deemed invalid by an administrative law judge with the Division of Administrative Hearings, the modified Caloosahatchee River MFL Recovery Strategy shall not be effective unless and until the District amends Rule 40E-8.221, Fla. Admin. Code, to address the reason for invalidity.

17. The 2019 Amendment to Appendix C of the 2017 update of the LWC Plan (Exhibit A) is hereby approved provided the proposed amendments to Rule 40E-8.221, Fla, Admin. Code, are not deemed an invalid exercise of delegated legislative authority by an administrative law judge with the Division of Administrative Hearings.

18. Staff may make minor changes to the 2019 Amendment to Appendix C of the 2017 update that do not alter the substance of the amendment in response to stakeholder comments. Such changes must occur by November 11, 2019.

19. Staff may distribute notice of this Order by certified mail, regular mail, and/or electronic mail to persons who have participated in plan development and MFL rule development process. Notice shall also be published in the Florida Administrative Register and newspapers of general circulation within the planning region.

DONE AND ORDERED in West Palm Beach, Florida, on this ____ day of October 2019.

SOUTH FLORIDA WATER
MANAGEMENT DISTRICT
By its Governing Board

_____
Paula L. Cobb, General Counsel

C

MFLs and Recovery and Prevention Strategies

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Section 373.709, Florida Statutes (F.S.), requires each South Florida Water Management District (SFWMD or District) regional water supply plan to be based on at least a 20-year planning period and include, among other items, the Minimum Flow and Minimum Water Level (MFL) criteria and associated recovery or prevention strategies adopted within the planning area. This appendix provides additional and updated information on MFLs and recovery and prevention strategies adopted for the Caloosahatchee River and Lower West Coast (LWC) Aquifers. Additional information specific to the MFLs and recovery strategies for Lake Okeechobee and the freshwater portions of ENP can be found in the *2013 Lower East Coast Water Supply Plan Update* (SFWMD 2013), which is being revised for publication in 2018.

LEGAL BASIS

Minimum Flows and Minimum Water Levels

The overall goal of Chapter 373, F.S., is to ensure the sustainability of water resources in Florida [Section 373.016, F.S.]. Chapter 373, F.S., provides the SFWMD with several tools to carry out this responsibility, including authority to establish MFLs. MFL criteria are flows or levels at which water resources or the ecology of the area would experience significant harm from further withdrawals. Significant harm is defined in Subsection 40E-8.021(31), Florida Administrative Code (F.A.C.), as the temporary loss of water resource functions, which results from a change in surface water or groundwater hydrology, that takes more than 2 years to recover, but which is considered less severe than serious harm (**Figure C-1**). Significant harm is considered more severe than the no-harm standard imposed in the water use permitting process, associated with a 1-in-10 year drought level of certainty. Therefore, MFLs in a recovered natural system would not be exceeded until rainfall conditions exceeded the 1-in-10 year drought level of certainty permitting criteria. Per Subsection 40E-8.021(17), F.A.C., an MFL exceedance means "to fall below a minimum flow or level, which is established in Parts II and III of Chapter 40E-8, F.A.C., for a duration greater than specified for the MFL water body".

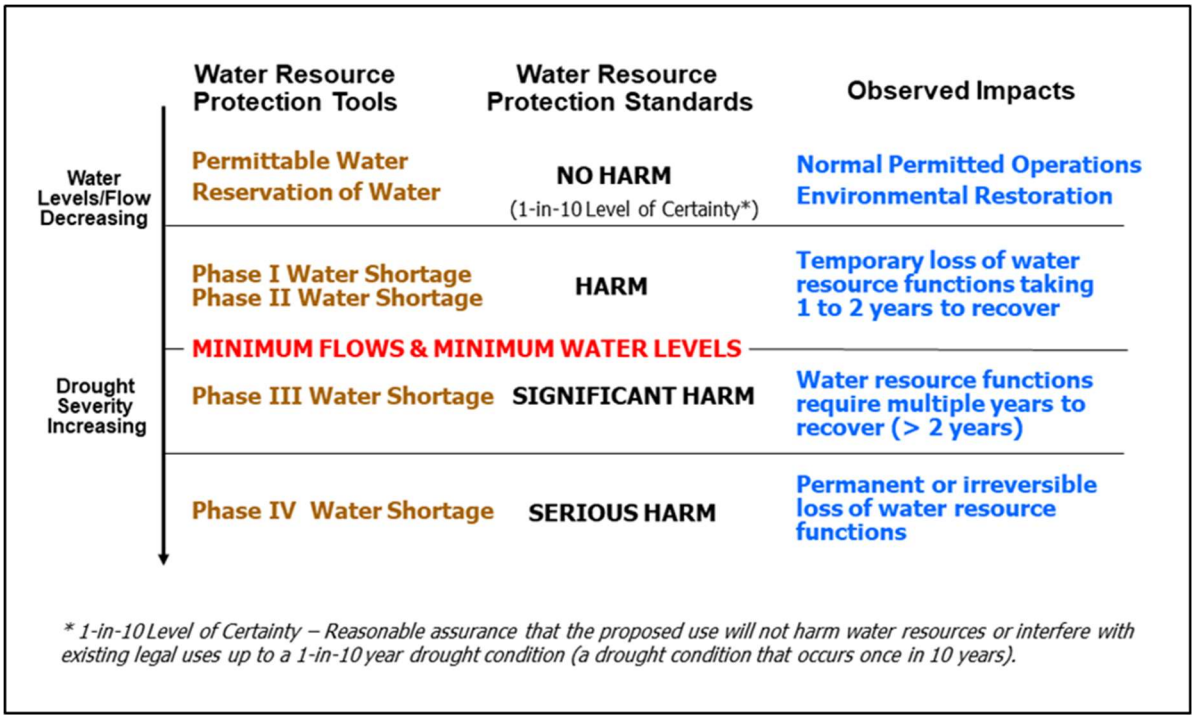

Figure C-1. Conceptual relationship among water resource protection standards at various levels of water resource harm.

Serious harm, the ultimate harm to water resources contemplated under Chapter 373, F.S., is defined as long-term, irreversible, or permanent loss to water resource functions. MFL water bodies approaching their MFL threshold criteria are factors the District Governing Board considers when contemplating water shortage restrictions. However, MFL criteria are not utilized to trigger water shortage restrictions during climatic conditions less severe than a 1-in-10-year drought. The District Governing Board may impose water shortage restrictions if an MFL exceedance occurs, or is projected to occur, during climatic conditions more severe than a 1-in-10-year drought, to the extent consumptive uses contribute to such exceedance.

MFL criteria are applied individually to affected water bodies and define the minimum flow or minimum water level for surface water bodies, or minimum water level for groundwater in aquifers. When establishing MFLs, the District Governing Board considers changes and structural alterations to watersheds, surface waters, and aquifers as well as the effects such changes or alterations have had, and the constraints such changes or alterations have placed on the hydrology of an affected watershed, surface water body, or aquifer [Section 373.0421, F.S.].

The SFWMD developed water resource protection standards, consistent with legislative direction, that are implemented in phases to prevent various levels of harm (**Figure C-1**). Each standard plays a role in achieving a sustainable water resource. **Figure C-1** represents the conceptual relationship among the water resource protection standards, associated conditions, and water shortage severity.

The water use permitting program protects water resources from harm by ensuring water use is reasonable-beneficial, does not interfere with existing legal water uses, and is consistent with the public interest. In 2001, MFLs were adopted for four water bodies in the

LWC Planning Area: Caloosahatchee River, LWC Aquifers, Lake Okeechobee, and the freshwater portions of Everglades National Park (ENP) (**Figure C-2**).

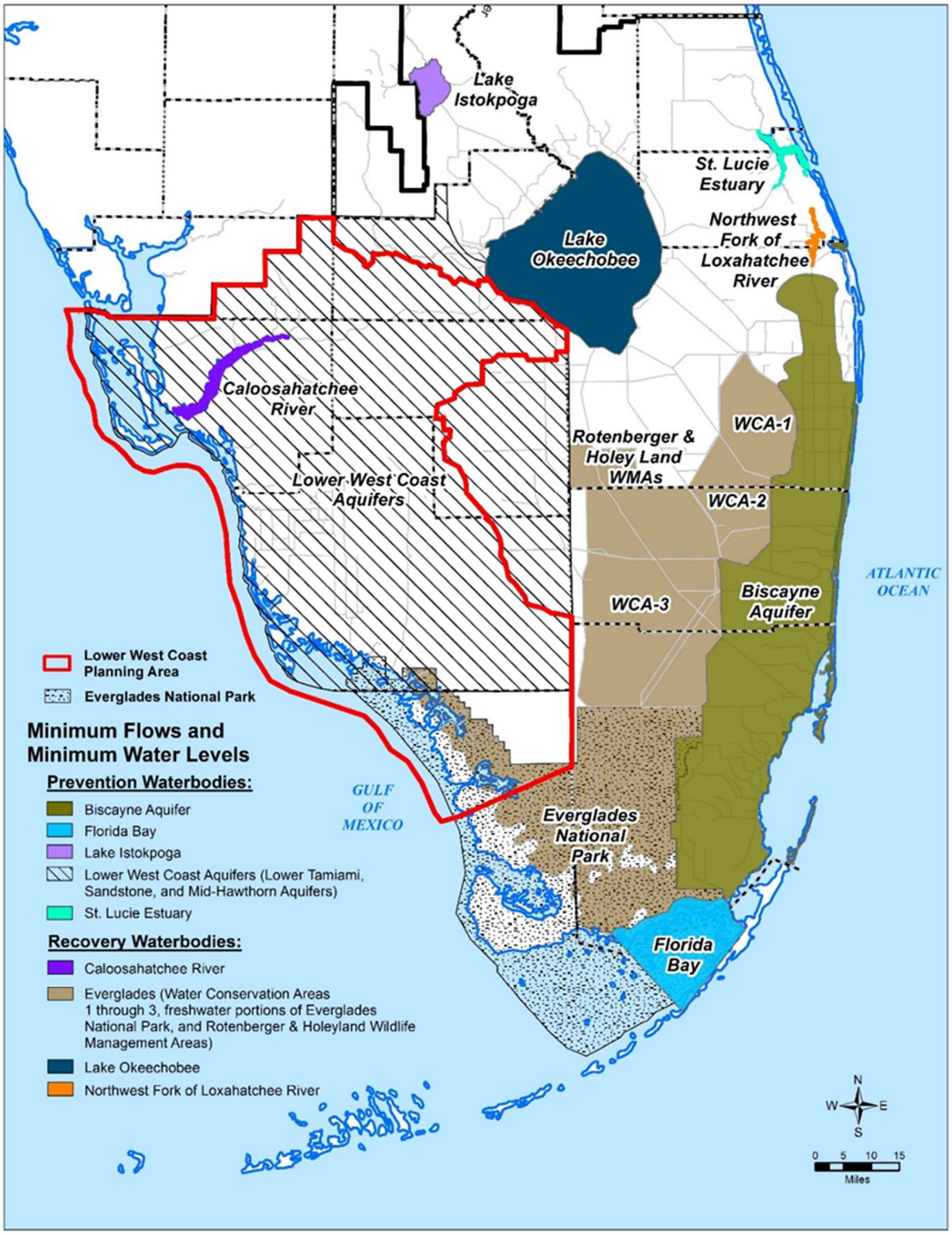

Figure C-2. Adopted Minimum Flows and Minimum Water Levels in the South Florida Water Management District.

Recovery and Prevention Strategies

Section 373.0421, F.S., requires the water management districts to develop and implement a recovery or prevention strategy for water bodies with flows or levels that are below, or are projected to fall within 20 years below, the adopted MFL criteria. Analyses of current and future conditions are conducted for each water body for which MFL criteria are defined. MFL recovery strategies are developed when MFL criteria are violated [Subsection 40E-8.021(25), F.A.C.]. MFL prevention strategies are developed when MFL criteria currently are not violated, but are projected to be violated within 20 years of the establishment of the MFL [Subsection 40E-8.021(24), F.A.C.]. The recovery or prevention strategy must include a list of projects that develop additional water supplies and other actions. The phasing or timetable for each project must be included in the strategy. Section 373.0421(2), F.S., in part, provides the following:

> *The recovery or prevention strategy shall include phasing or a timetable which will allow for the provision of sufficient water supplies for all existing and projected reasonable-beneficial uses, including development of additional water supplies and implementation of conservation and other efficiency measures concurrent with, to the extent practical, and to offset, reductions in permitted withdrawals, consistent with the provisions of this chapter.*

Section 373.709, F.S., requires regional water supply plans to contain recovery and prevention strategies needed to achieve compliance with MFLs during the planning period. These strategies may include development of additional water supplies and implementation of conservation and other efficiency measures. The implementation of projects will allow for the orderly replacement or enhancement of existing water sources with alternative supplies to provide sufficient water for all existing and projected reasonable-beneficial uses, consistent with Section 373.0421, F.S.

In the LWC Planning Area, a prevention strategy was developed and adopted for the LWC Aquifers [Subsection 40E-8.421(4), F.A.C.], and recovery strategies were developed and adopted for the Caloosahatchee River, Lake Okeechobee, and the freshwater portions of ENP [Subsection 40E-8.421(2), F.A.C.]. MFLs for Lake Okeechobee and the freshwater portions of ENP affect portions of the LWC Planning Area but are included in the *2013 Lower East Coast Water Supply Plan Update* (SFWMD 2013), which is being revised in 2018. Recovery and prevention strategies can consist of multiple components within the following categories: capital projects, regulatory measures and requirements, water shortage measures, and environmental projects.

LOWER WEST COAST MFL WATER BODIES

Caloosahatchee River

MFL Background

In 2001, the SFWMD adopted an MFL for the Caloosahatchee River [Subsection 40E-8.221(2), F.A.C.]. The Caloosahatchee River MFL water body is defined in Subsection 40E-8.021(2), F.A.C. as the surface waters that flow through the S-79 water control structure, combined with tributary contributions below the structure that collectively flow southwest to San Carlos Bay (**Figures C-2** and **C-3**). The portion of this waterway located upstream of the S-79 structure is considered the C-43 Canal.

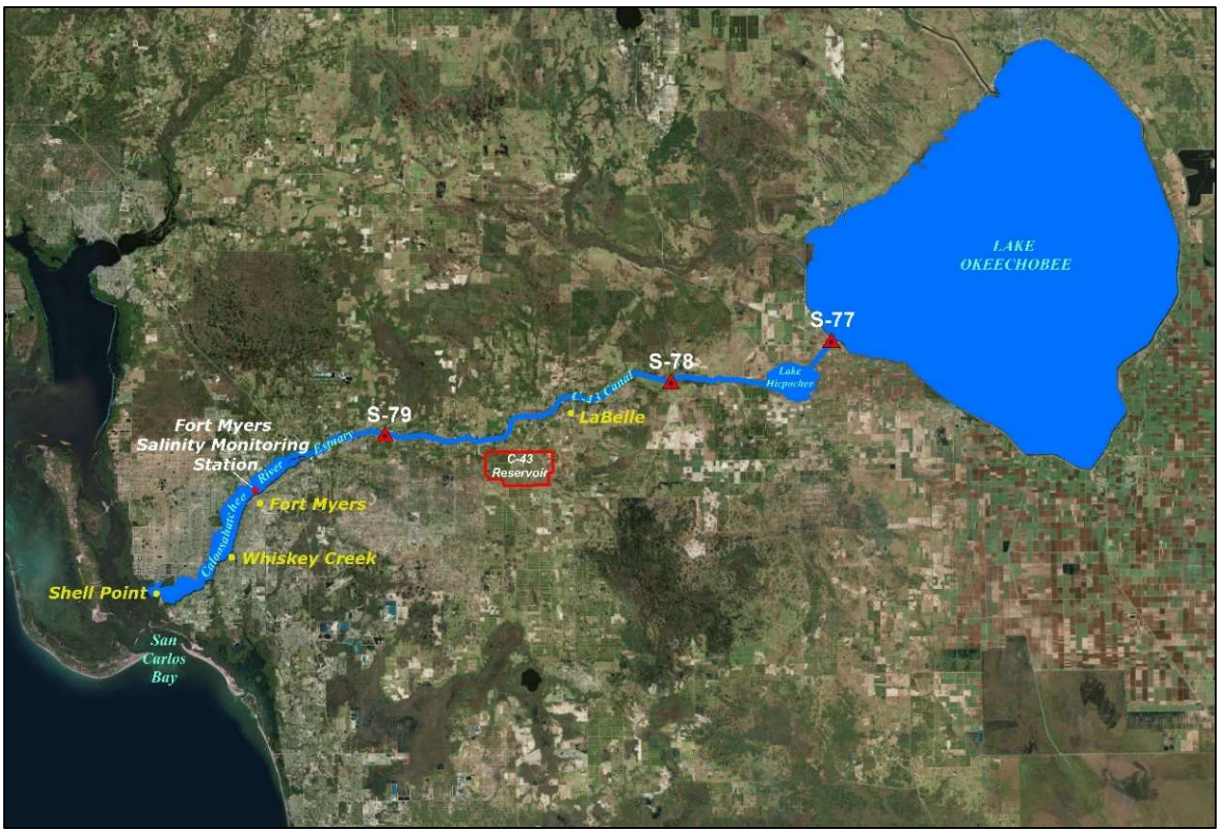

Figure C-3. Caloosahatchee River Minimum Flow and Minimum Water Level water body (downstream of S-79), showing the hydrologic connection to Lake Okeechobee.

Analyses completed for the *2000 Lower East Coast Water Supply Plan* (SFWMD 2000) showed that long-term regional storage was necessary to achieve proposed MFL criteria, and that MFL violations would continue until a recovery strategy was implemented. As a result, the SFWMD projected that a recovery strategy based on construction of regional storage would be necessary to achieve the MFL. Historical information on the MFL water body and the basis of the current MFL criteria can be found in technical documentation reports available on the SFWMD website (www.sfwmd.gov; Search: Minimum Flows and Levels).

MFL Re-evaluation

A re-evaluation of the Caloosahatchee River MFL began in 2013. The re-evaluation included application of new and updated models as well as a resource-based approach to evaluate multiple indicators using historical and new data and information regarding the Caloosahatchee River. The re-evaluation sought to:

- Evaluate alterations in the Caloosahatchee River watershed and the effects on flows;
- Better understand water sources and the tidal contributions to the Caloosahatchee River;
- Assess responses of multiple ecological indicators to various flow scenarios;
- Evaluate the performance of the MFL recovery strategy; and
- Re-evaluate current MFL criteria to protect the Caloosahatchee River in light of new analyses.

SFWMD staff researched effects of flow scenarios on a suite of environmental indicators in the Caloosahatchee River, including oysters (*Crassostrea virginica*), blue crabs (*Callinectes sapidus*), ichthyoplankton, zooplankton, phytoplankton, smalltooth sawfish (*Pristis pectinata*), benthic macrofauna, and tape grass (*Vallisneria americana*). SFWMD staff also assessed the effect of low flows on the aforementioned environmental indicators and summarized the associated science (SFWMD 2018). This information was presented to the public at the Caloosahatchee Science Symposium (September 15-16, 2016) to gain public input on the completed low-flow assessment. SFWMD staff then completed additional data collection and analyses as well as model development updates, and an application to predict environmental responses to flow and salinity conditions in the Caloosahatchee River was developed. The sum of this information was included in the technical document supporting the re-evaluation (SFWMD 2018). An independent, scientific peer-review of the technical document, re-evaluation approach, and MFL criteria was conducted after the draft MFL technical document was developed. The public participated in the public peer-review session. The final peer-review report was received in October 2017.

In December 2017, the District Governing Board authorized rulemaking to revise the MFL rule [Subsection 40E-8.221(2), F.A.C.]. The public participated in the rulemaking effort during two rule development workshops. In September 2018, the District Governing Board adopted a minimum flow criterion of 400 cubic feet per second (cfs) at the S-79 structure and revisions to the duration and return frequency components. A rule challenge was filed, and an administrative hearing occurred in October 2018. In March 2019, the Administrative Law Judge issued a final order and determined the rule was a valid exercise of delegated legislative authority.

In April 2019, the District Governing Board directed staff to further engage with stakeholders and consider different mathematical and statistical approaches, within the framework of the existing science, to increase the minimum flow above 400 cfs. SFWMD staff held three additional public workshops (May, June, and September 2019) and presented the additional statistical approach and revised rule language to the District Governing Board at its October 2019 meeting. The revised rule language proposes the development of a research and monitoring plan, and the Caloosahatchee River MFL recovery strategy must be modified to include the monitoring plan. Additionally, initial modeling of C-43 Reservoir performance with a modified minimum flow of 457 cfs indicates additional storage may be necessary. The SFWMD proposed further amendment of the recovery strategy to include development of a

water control plan for the C-43 Reservoir and evaluations to 1) determine if additional storage is needed, and 2) identify potential projects to provide such additional storage.

The revised MFL rule is expected to go before the District Governing Board for adoption on October 10, 2019. Further information about the MFL and re-evaluation can be found on the SFWMD website (www.sfwmd.gov; Search: Minimum Flows and Levels).

Recovery Strategy

The recovery strategy for the Caloosahatchee River MFL includes the following components:

- The Caloosahatchee River MFL Research and Monitoring Plan (SFWMD 2019) will evaluate indicator responses to freshwater inflows and will be implemented before and after operation of the C-43 Reservoir during the wet and dry seasons;
- Regulatory constraints on the consumptive use of water from the C-43 Reservoir with the adoption of a Water Reservation [Subsection 40E-10.041(3), F.A.C.] to protect the water for environmental purposes;
- Capital projects such as the C-43 Reservoir that are designed to capture excess water during the wet season and make environmental deliveries during the dry season to provide a stable salinity regime; and
- Development of a water control plan governing operation of the C-43 Reservoir.

The timeline for completion of the modified recovery strategy components is provided in **Table C-1**.

Table C-1. Timeline of the Caloosahatchee River MFL modified recovery strategy components.

Completed	Near Term (2020-2024)	Long Term (2022-2027)
Obtain project funding and initiate construction of the C-43 Reservoir	Implement baseline MFL Research and Monitoring Plan (2020-2024)	If needed, evaluate project(s) to meet potential unmet requirements – storage, volume, and type (2022-2023)
Establish water reservation rule for the C-43 Reservoir	Complete construction of the C-43 Reservoir (2020-2023)	Select additional project(s) and obtain federal and/or state funding for selected project(s), if needed (2024)
	Develop C-43 Reservoir Water Control Plan (2021)	Complete C-43 Reservoir testing (2024)
	Re-assess C-43 Reservoir performance (2022)	Implement post-operation MFL research and monitoring plan (2025-2027)
		Design and construct selected project(s) (2024-2027)

MFL = Minimum Flow and Minimum Water Level.

Completed

Project Funding and Initiation of Construction

Project funding for the C-43 Reservoir was obtained in 2014 and construction of the reservoir began in 2015. Construction is expected to be complete by 2023.

Water Reservation

A Water Reservation for the C-43 Reservoir was adopted in 2014. The rule reserves all water within and released from the reservoir for the benefit fish and wildlife in the Caloosahatchee River downstream of the S-79 structure. Consumptive uses are prohibited from using the reserved water.

Near Term (2020-2024)

Implement Baseline Component of the Caloosahatchee River MFL Research and Monitoring Plan (2020-2024)

In 2020, the SFWMD will begin implementing the baseline component of the Caloosahatchee River Research and Monitoring Plan. This component will provide additional information about the ecological indicators in the mesohaline and oligohaline zones of the upper estuary before additional freshwater flows are released from operation of the C-43 Reservoir. The Research and Monitoring Plan incorporates the peer-review recommendations provided in the 2017 Final Peer Review Report (Buskey et al. 2017) for monitoring future ecological indicators. SFWMD staff will revise and update the Caloosahatchee River Research and Monitoring Plan as needed to reflect results of the initial studies, current scientific evaluations, and a review of any remaining knowledge gaps and uncertainties.

C-43 Reservoir Construction Completion (2020-2023)

In 2001, when the MFL for the Caloosahatchee River was adopted, the MFL criteria were projected to be exceeded until storage could be constructed and operated in the watershed to capture excess surface water flows for release to the river during times of need. Therefore, a recovery strategy was adopted for the river simultaneously with MFL adoption. The storage project identified at that time was the Comprehensive Everglades Restoration Plan (CERP) Caloosahatchee River (C-43) West Basin Storage Reservoir. CERP identifies restoration of the Caloosahatchee River as an integral step in achieving system-wide benefits in the South Florida ecosystem. Promoting a balanced and healthy salinity regime in the Caloosahatchee River is essential for maintaining the ecological integrity and associated economic benefits of this unique habitat on Florida's southwest coast. Construction of the Caloosahatchee River (C-43) West Basin Storage Reservoir serves to address these CERP objectives as well as SFWMD objectives to improve flows to the Caloosahatchee River to meet MFL criteria. The SFWMD is the state-designated local sponsor of the reservoir project with the United States Army Corp of Engineers (USACE).

The reservoir site is located on a 10,700-acre parcel, formerly known as Berry Groves, in Hendry County, southwest of the S-78 structure and the City of LaBelle, as shown in **Figure C-4** and described in Appendix 1-12 of Chapter 40E-10, F.A.C.

Flows to the Caloosahatchee River will be moderated through capture of surface water flows and a portion of Lake Okeechobee releases in the reservoir during wet periods, and release of water from the reservoir to the Caloosahatchee River during dry periods. This will provide a more natural, consistent flow of fresh water to the Caloosahatchee River and a more balanced salinity regime by improving the timing, quality, and quantity of water inflows.

Key features of the reservoir include the following:

- 170,000 acre-feet of water storage (>55 billion gallons) stored in two cells (**Figure C-5**)
- Normal pool depth when full: 15 to 25 feet
- External and internal embankments and canals
- Two pump stations (S-470 and S-476)
- Sixteen internal control and outflow water control structures
- Environmental features to provide fish and wildlife habitat and recreational opportunities for the public

As stated earlier, C-43 Reservoir construction started in 2015. Finalizing construction of the C-43 Reservoir is a high a priority for the SFWMD. The reservoir is scheduled to be completed in 2023. The State provided funding to expedite completion of the project in advance of receipt of federal costs share monies. The total construction cost associated the C-43 Reservoir is approximately $725 million.

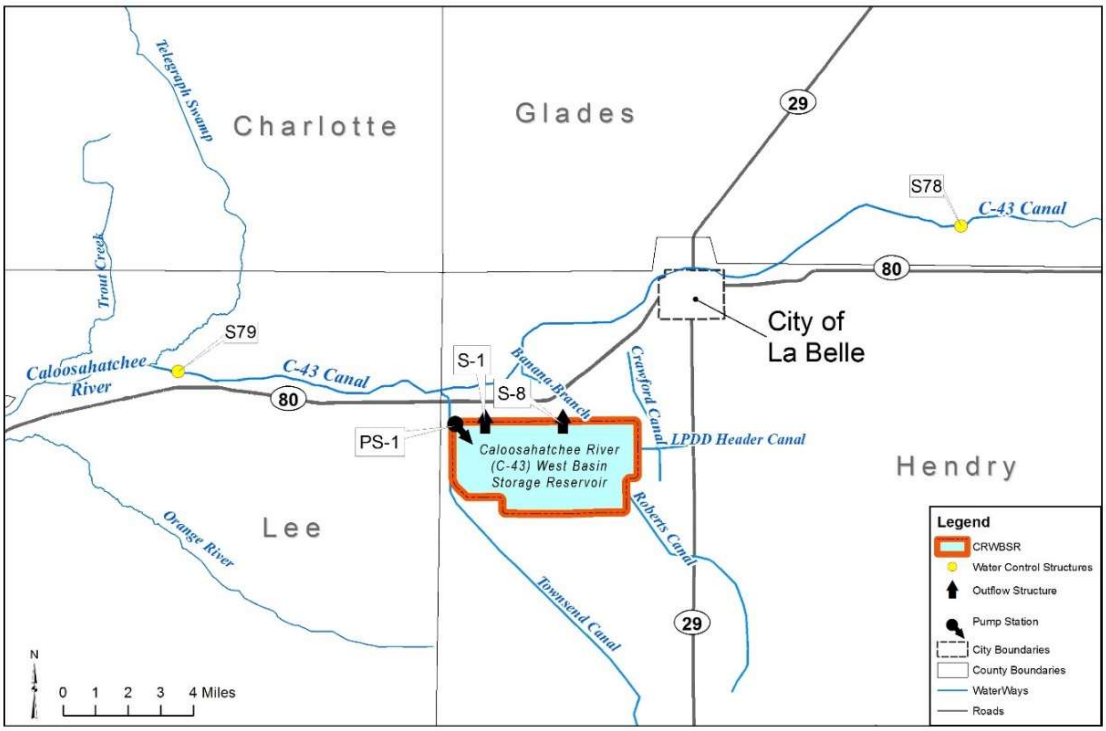

Figure C-4. Location of the Comprehensive Everglades Restoration Plan Caloosahatchee River (C-43) West Basin Storage Reservoir.

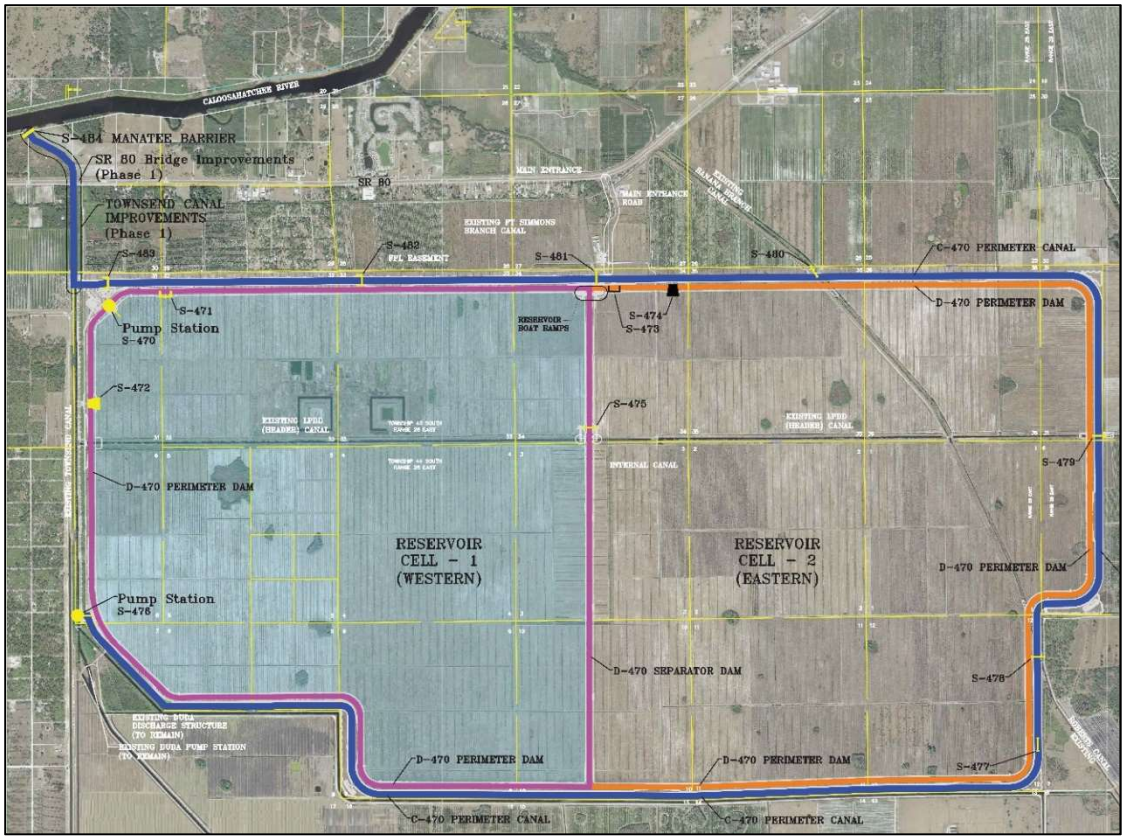

Figure C-5. Caloosahatchee River (C-43) West Basin Storage Reservoir site plan.

Development of a Water Control Plan (2021)

A critical component of the C-43 Reservoir is the development of the Water Control Plan (also known as the Project Operation Manual). Significant work will be required to develop this plan in partnership with the USACE. The operation plan will incorporate the 2008 Lake Okeechobee Regulation Schedule or the Lake Okeechobee System Operating Manual update, if completed (targeted for 2022), and the Water Reservation requirements. Once the Water Control Plan has been completed, it will be submitted to the Florida Department of Environmental Protection with a future Operations Permit application for operation of the C-43 Reservoir.

Re-assess C-43 Reservoir Performance (2022)

This component of the recovery strategy will be implemented following completion of the Water Control Plan to re-assess the C-43 Reservoir's performance in meeting the MFL. Additional storage may be required as the C-43 Reservoir originally was designed to deliver 450 cfs. This assessment is expected to require a modeling evaluation to determine the additional storage needed to meet the MFL (i.e., to ensure that the MFL is not violated). The appropriate modeling tool(s) will be used and evaluated to understand additional storage requirements to meet the MFL.

Long Term (2022-2027)

Evaluate Project to Meet Potential Unmet Requirements – Storage Volume and Type (2022-2023)

This component of the recovery strategy involves evaluation of potential water resource development projects within the C-43 watershed (upstream of the S-79 structure) to provide additional storage, if needed, to meet the MFL. Project location(s) will be within the Caloosahatchee Watershed (**Figure C-6**). This component includes evaluating of the potential storage capacities and types associated with each project using a preliminary design. The types of storage that will be evaluated to meet any storage deficit include shallow and deep storage along with the storage benefits associated with aquifer storage and recovery.

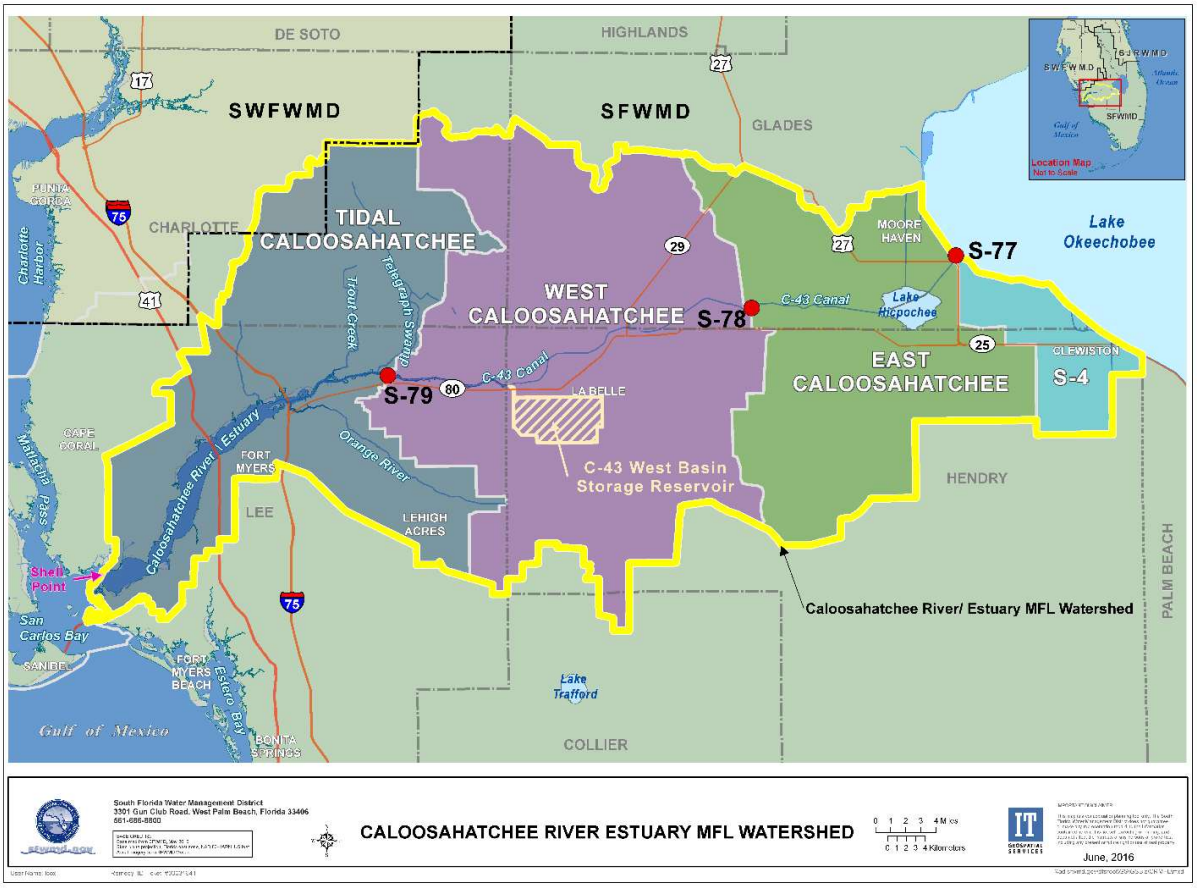

Figure C-6. Caloosahatchee River MFL Watershed.

Select Additional Project(s) and Obtain Federal and/or State Funding for Selected Projects, If Needed (2024)

This component of the recovery strategy involves the selection of appropriate projects to fulfill the potential unmet storage needs to meet the MFL, as needed. The specific projects will be determined based on the amount of storage each project is capable of providing based on preliminary design information. This component also involves obtaining federal and/or state funding to complete the project(s).

Complete Operational Testing of the C-43 Reservoir (2024)

Once construction of the C-43 Reservoir is complete, a testing period is necessary to ensure the reservoir can be operated as envisioned and to determine if additional efficiencies are possible. Final testing of all infrastructure to ensure it will operate as designed and constructed is expected to take at least 1 year.

Implement Post-Operation Caloosahatchee River MFL Research and Monitoring Plan (2025-2027)

This phase of the Research and Monitoring Plan (SFWMD 2019) will be implemented after construction of the C-43 Reservoir has been completed and the reservoir is operational. The purpose of this phase is to understand the responses of ecological indicators to increased freshwater flows from the reservoir within the mesohaline and oligohaline zones of the upper estuary.

Design and Construction of Selected Projects (2024-2027)

This component of the recovery strategy is the last step in the Long Term portion of the MFL recovery strategy. Once funding is secured, project design and construction will be initiated. The design and permitting of large-scale projects can take 1 to 2 years to complete. Once all appropriate state and federal permits have been issued, the construction process begins. Construction of large-scale projects can take 2 to 3 years. Once construction is complete, the project will enter a testing phase (as described below for the C-43 Reservoir) to ensure the infrastructure is meeting design specifications.

Further information about the MFL recovery strategy for the Caloosahatchee River, including the Research and Monitoring Plan, can be found on the SFWMD website (www.sfwmd.gov; Search: Minimum Flows and Levels) and in Subsection 40E-8.421(2), F.A.C. More information on the Water Reservation rule can be obtained in Subsection 40E-10.041(3), F.A.C., and on the SFWMD website (www.sfwmd.gov; Search: Water Reservations). Information specific to the Caloosahatchee River CERP (C-43) West Basin Storage Reservoir project is available at www.evergladesrestoration.gov and in USACE (2016).

Lower West Coast Aquifers

MFL Criteria

The LWC Aquifers (**Figure C-2**) comprise the Lower Tamiami, Sandstone, and Mid-Hawthorn aquifers. In 2001, the SFWMD adopted an MFL specifying that the minimum water levels for

the LWC Aquifers must equal the structural top of the aquifers [Subsection 40E-8.331, F.A.C.]. In 2015, the SFWMD published a set of regional maps (**Figures C-7** to **C-9**) indicating the elevation of the structural top of the Lower Tamiami, Sandstone, and Mid-Hawthorn aquifers (Geddes et al. 2015). The maps were developed based on the best hydrogeologic information available at the time; however, local and isolated variations in aquifer elevations may not be depicted on the maps as they are regional in nature and new data may be available.

A violation of the MFL criteria occurs when water levels in the aquifers drop below the top of the uppermost geologic strata that composes the aquifer at any point in time. Water level measurements used to determine the conditions of the aquifers for the purpose of this rule are collected no closer than 50 feet from any existing pumping well, as required pursuant to Rule 40E-8.331, F.A.C. Further information about the MFL for the LWC Aquifers can be found on the SFWMD website (www.sfwmd.gov; Search: Minimum Flows and Levels).

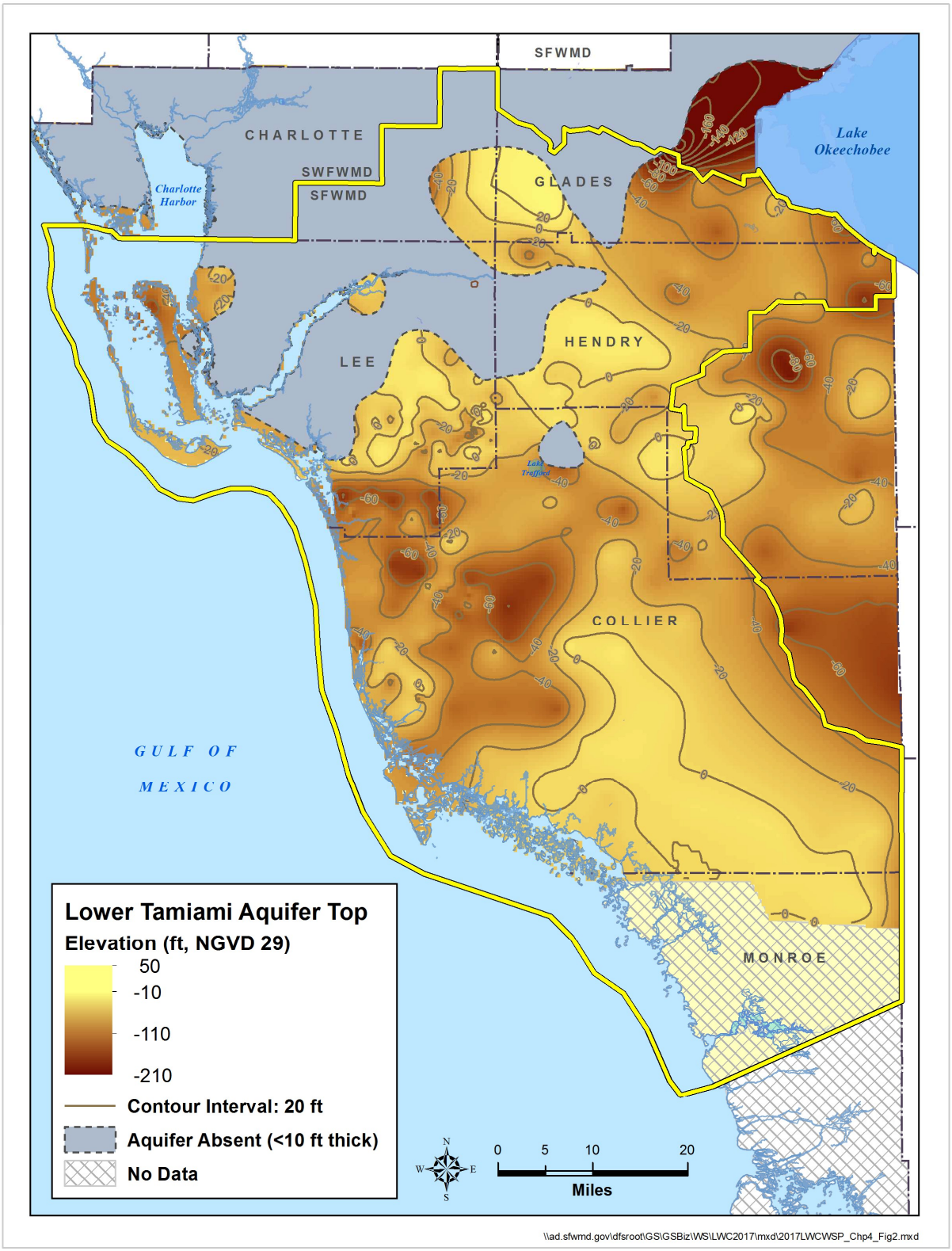

Figure C-7. Structural top of the Lower Tamiami aquifer in the Lower West Coast Planning Area.

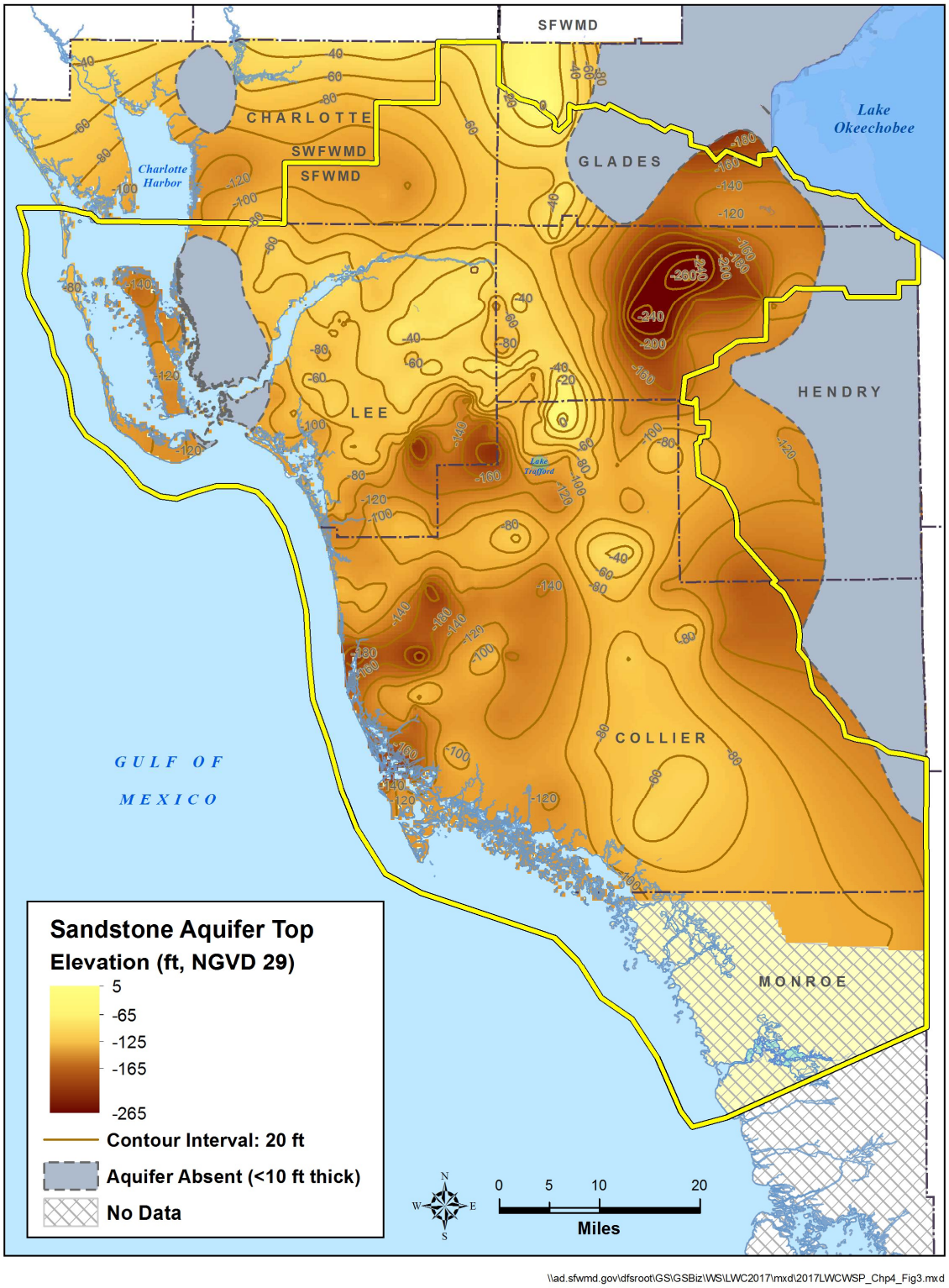

Figure C-8. Structural top of the Sandstone aquifer in the Lower West Coast Planning Area.

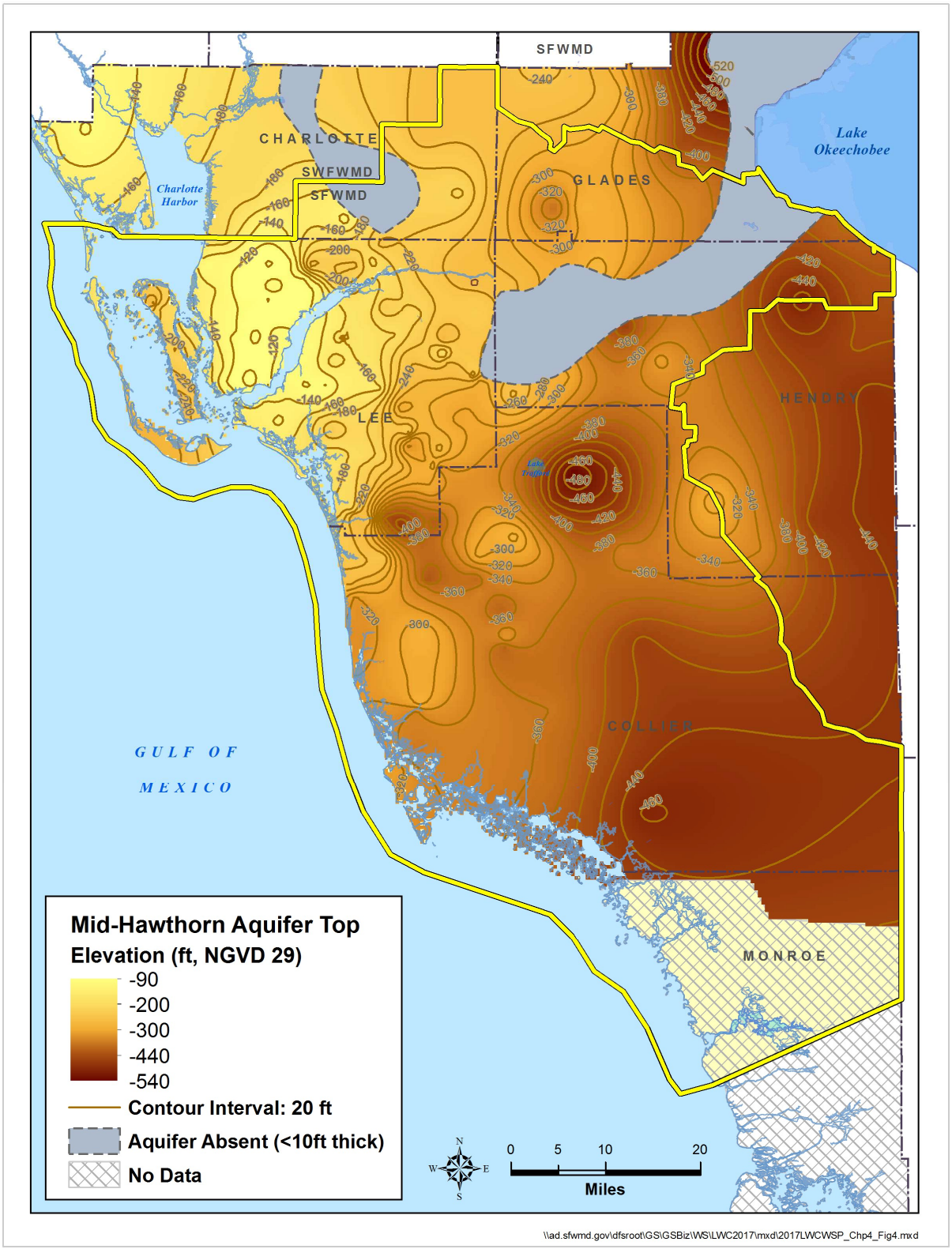

Figure C-9. Structural top of the Mid-Hawthorn aquifer in the Lower West Coast Planning Area.

Prevention Strategy

In 2001, when the MFL for the LWC Aquifers was adopted, the water level criteria of the MFL were not violated, and current water levels in the aquifers are well above the MFL criteria (Chapter 6 of the plan update). However, to minimize the likelihood of a violation and to prevent water levels within the aquifers from declining below the MFL criteria in the future, a prevention strategy was adopted for the aquifers simultaneously with the MFL [Subsection 40E-8.421(4), F.A.C.]. The prevention strategy for the aquifers consists of the following components:

- Establish "no harm" maximum permittable levels for each aquifer (regulatory levels) for a 1-in-10 year drought level of certainty
- Implement rule criteria to prevent harm through the water use permitting process, including conditions for permit issuance in Rule 40E-2.301, F.A.C.
- Construct and operate water resource and supply development projects
- Implement the water shortage plan in Chapter 40E-21, F.A.C., as needed to prevent serious harm during drought conditions in excess of a 1-in-10 year drought level of certainty

In order to prevent the LWC Aquifers from falling below the minimum water level, the SFWMD adopted Maximum Developable Limits (MDLs) in 2003. The MDLs, contained in the *Applicant's Handbook for Water Use Permit Applications within the South Florida Water Management District* (Applicant's Handbook; SFWMD 2015), prohibit water withdrawals that lower the potentiometric head (water level) within the Lower Tamiami, Sandstone, and Mid-Hawthorn aquifers to less than 20 feet above the top of the uppermost geologic strata of the aquifer at any point during a 1-in-10 year drought condition. MDLs are permitting constraints that prevent the region's aquifers from experiencing harm due to withdrawals. Further details about the prevention strategy for the LWC Aquifers can be found on the SFWMD website (www.sfwmd.gov; Search: Minimum Flows and Levels) and in Subsection 40E-8.421(4), F.A.C.

REFERENCES

Buskey et al. 2017. *Minimum Flow Criteria for the Caloosahatchee River Estuary – Final Peer Review Report*. October 2017.

Geddes, E., E. Richardson, and A. Dodd. 2015. *Hydrogeologic Unit Mapping Update for the Lower West Coast Water Supply Planning Area*. Technical Publication WS-35. South Florida Water Management District, West Palm Beach, FL.

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USACE. 2016. *Caloosahatchee River (C-43) West Basin Storage Reservoir Facts & Information*. United States Army Corps of Engineers, Jacksonville, FL. January 2016.

NOTICE OF RIGHTS

As required by Sections 120.569 and 120.60(3), Fla. Stat., the following is notice of the opportunities which may be available for administrative hearing or judicial review when the substantial interests of a party are determined by an agency. Please note that this Notice of Rights is not intended to provide legal advice. Not all of the legal proceedings detailed below may be an applicable or appropriate remedy. You may wish to consult an attorney regarding your legal rights.

RIGHT TO REQUEST ADMINISTRATIVE HEARING

A person whose substantial interests are or may be affected by the South Florida Water Management District's (SFWMD or District) action has the right to request an administrative hearing on that action pursuant to Sections 120.569 and 120.57, Fla. Stat. Persons seeking a hearing on a SFWMD decision which affects or may affect their substantial interests shall file a petition for hearing with the Office of the District Clerk of the SFWMD, in accordance with the filing instructions set forth herein, within 21 days of receipt of written notice of the decision, unless one of the following shorter time periods apply: (1) within 14 days of the notice of consolidated intent to grant or deny concurrently reviewed applications for environmental resource permits and use of sovereign submerged lands pursuant to Section 373.427, Fla. Stat.; or (2) within 14 days of service of an Administrative Order pursuant to Section 373.119(1), Fla. Stat. "Receipt of written notice of agency decision" means receipt of written notice through mail, electronic mail, or posting that the SFWMD has or intends to take final agency action, or publication of notice that the SFWMD has or intends to take final agency action. Any person who receives written notice of a SFWMD decision and fails to file a written request for hearing within the timeframe described above waives the right to request a hearing on that decision.

If the District takes final agency action which materially differs from the noticed intended agency decision, persons who may be substantially affected shall, unless otherwise provided by law, have an additional Rule 28-106.111, Fla. Admin. Code, point of entry.

Any person to whom an emergency order is directed pursuant to Section 373.119(2), Fla. Stat., shall comply therewith immediately, but on petition to the board shall be afforded a hearing as soon as possible.

A person may file a request for an extension of time for filing a petition. The SFWMD may, for good cause, grant the request. Requests for extension of time must be filed with the SFWMD prior to the deadline for filing a petition for hearing. Such requests for extension shall contain a certificate that the moving party has consulted with all other parties concerning the extension and that the SFWMD and any other parties agree to or oppose the extension. A timely request for an extension of time shall toll the running of the time period for filing a petition until the request is acted upon.

FILING INSTRUCTIONS

A petition for administrative hearing must be filed with the Office of the District Clerk of the SFWMD. Filings with the Office of the District Clerk may be made by mail, hand-delivery, or e-mail. Filings by facsimile will not be accepted. A petition for administrative hearing or other document is deemed filed upon receipt during normal business hours by the Office of the District Clerk at SFWMD headquarters in West Palm Beach, Florida. The District's normal business hours are 8:00 a.m. – 5:00 p.m., excluding weekends and District holidays. Any document received by the Office of the District Clerk after 5:00 p.m. shall be deemed filed as of 8:00 a.m. on the next regular business day. Additional filing instructions are as follows:

- Filings by mail must be addressed to the Office of the District Clerk, 3301 Gun Club Road, West Palm Beach, Florida 33406.

- Filings by hand-delivery must be delivered to the Office of the District Clerk. Delivery of a petition to the SFWMD's security desk does not constitute filing. It will be necessary to request that the SFWMD's security officer contact the Office of the District Clerk. An employee of the SFWMD's Clerk's office will receive and file the petition.
- Filings by e-mail must be transmitted to the Office of the District Clerk at clerk@sfwmd.gov. The filing date for a document transmitted by electronic mail shall be the date the Office of the District Clerk receives the complete document. A party who files a document by e-mail shall (1) represent that the original physically signed document will be retained by that party for the duration of the proceeding and of any subsequent appeal or subsequent proceeding in that cause and that the party shall produce it upon the request of other parties; and (2) be responsible for any delay, disruption, or interruption of the electronic signals and accepts the full risk that the document may not be properly filed.

INITIATION OF AN ADMINISTRATIVE HEARING

Pursuant to Sections 120.54(5)(b)4. and 120.569(2)(c), Fla. Stat., and Rules 28-106.201 and 28-106.301, Fla. Admin. Code, initiation of an administrative hearing shall be made by written petition to the SFWMD in legible form and on 8 1/2 by 11 inch white paper. All petitions shall contain:

1. Identification of the action being contested, including the permit number, application number, SFWMD file number or any other SFWMD identification number, if known.
2. The name, address, any email address, any facsimile number, and telephone number of the petitioner and petitioner's representative, if any.
3. An explanation of how the petitioner's substantial interests will be affected by the agency determination.
4. A statement of when and how the petitioner received notice of the SFWMD's decision.
5. A statement of all disputed issues of material fact. If there are none, the petition must so indicate.
6. A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the SFWMD's proposed action.
7. A statement of the specific rules or statutes the petitioner contends require reversal or modification of the SFWMD's proposed action.
8. If disputed issues of material fact exist, the statement must also include an explanation of how the alleged facts relate to the specific rules or statutes.
9. A statement of the relief sought by the petitioner, stating precisely the action the petitioner wishes the SFWMD to take with respect to the SFWMD's proposed action.

MEDIATION

The procedures for pursuing mediation are set forth in Section 120.573, Fla. Stat., and Rules 28-106.111 and 28-106.401–.405, Fla. Admin. Code. The SFWMD is not proposing mediation for this agency action under Section 120.573, Fla. Stat., at this time.

RIGHT TO SEEK JUDICIAL REVIEW

Pursuant to Section 120.68, Fla. Stat., and in accordance with Florida Rule of Appellate Procedure 9.110, a party who is adversely affected by final SFWMD action may seek judicial review of the SFWMD's final decision by filing a notice of appeal with the Office of the District Clerk of the SFWMD in accordance with the filing instructions set forth herein within 30 days of rendition of the order to be reviewed, and by filing a copy of the notice with the clerk of the appropriate district court of appeal.