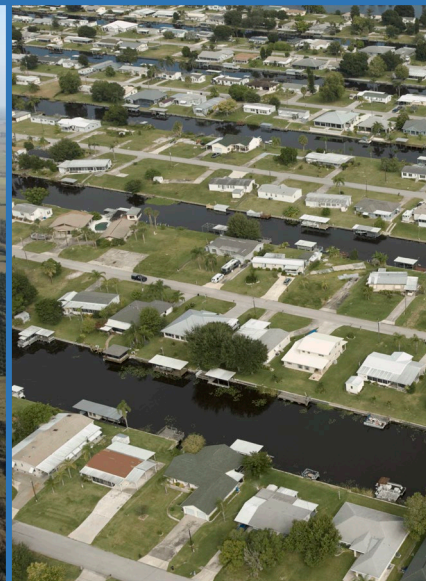
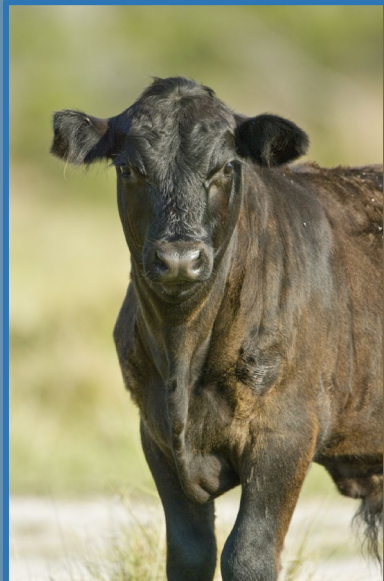


2024 Lower Kissimmee Basin Water Supply Plan Update



Stakeholder Meeting #2
October 24, 2024



Agenda

- **Welcome and Opening Remarks**
- **Water Resource Protection Measures**
- **Overview of the Draft 2024 LKB Plan Update**
- **Next Steps**
- **Adjourn**

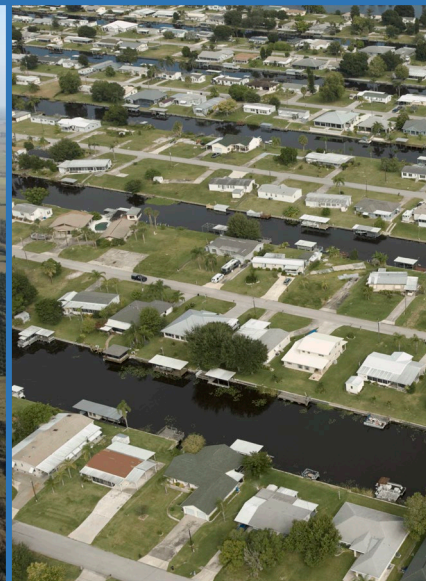
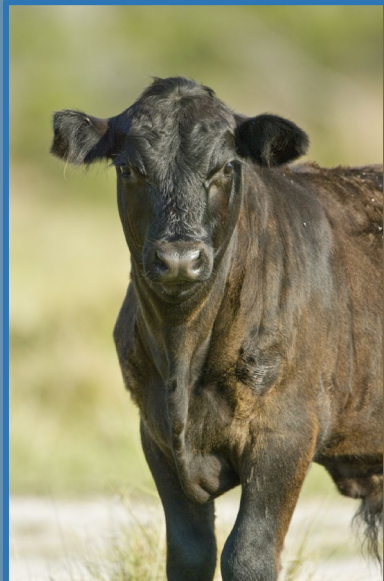
Tom Colios, SFWMD

James Beerens, SFWMD

Chad Brcka, SFWMD

Chad Brcka, SFWMD

Welcome and Opening Remarks

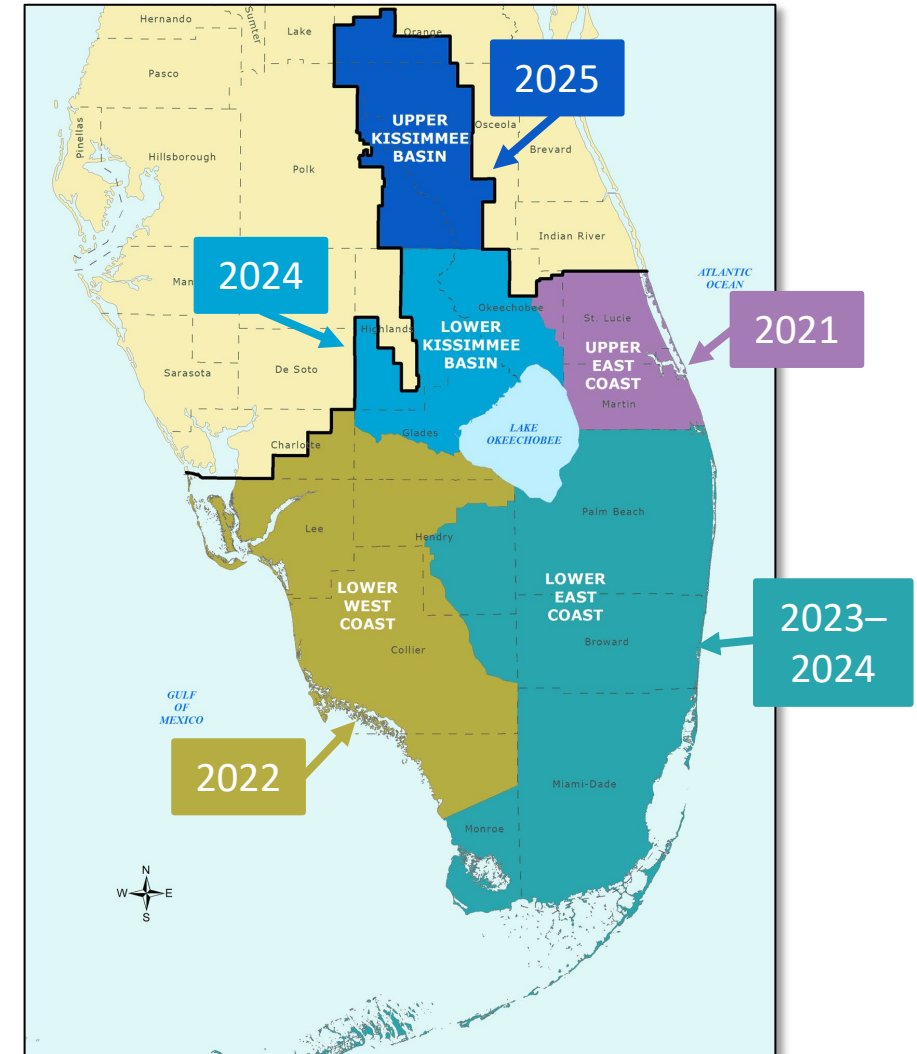


Tom Colios
Section Leader, Water Supply Planning
2024 LKB Stakeholder Meeting #2
October 24, 2024



Water Supply Plan Requirements

- 20-year planning period
- Demand estimates and projections
- Resource analyses
- Issue identification
- Evaluation of water source options
- Water resource development
 - Responsibility of water management district
- Water supply development
 - Responsibility of water users
- Environmental protective and restoration strategies
 - Review/update prevention and recovery strategies for minimum flows and minimum water levels (MFLs)



Regional Water Supply Plan

What It Does

- Provides a road map to meet future water needs while protecting water resources and natural systems
- Conducts a planning-level approach
- Projects future water demands
- Identifies and evaluates water source options

What It Does NOT Do

- Does not authorize consumptive use permits
- Does not establish MFLs
- Does not adopt rules
- Does not require water users to implement specific projects
- Does not address surface water quality issues (e.g., algal blooms)

LKB Water Supply Plan Update Process



Regional and Local Planning Linkage

- After the District Governing Board approves the water supply plan update:
 - All local governments must amend their Comprehensive Plan to update the Water Supply Facilities Work Plan within 18 months of this plan's approval
 - Work Plans will be due in June 2026
 - Utilities identify the projects to be developed
 - Utility annual progress reports
 - District automated WaSUP database – due annually by November 15



Questions and Public Comment

- If you are participating via Zoom:
 - Click the Reactions button to access the Raise Hand feature
- If you are participating via phone:
 - *9 raises hand
 - *6 mutes/unmutes your line
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Horses in a restored section of the Kissimmee River

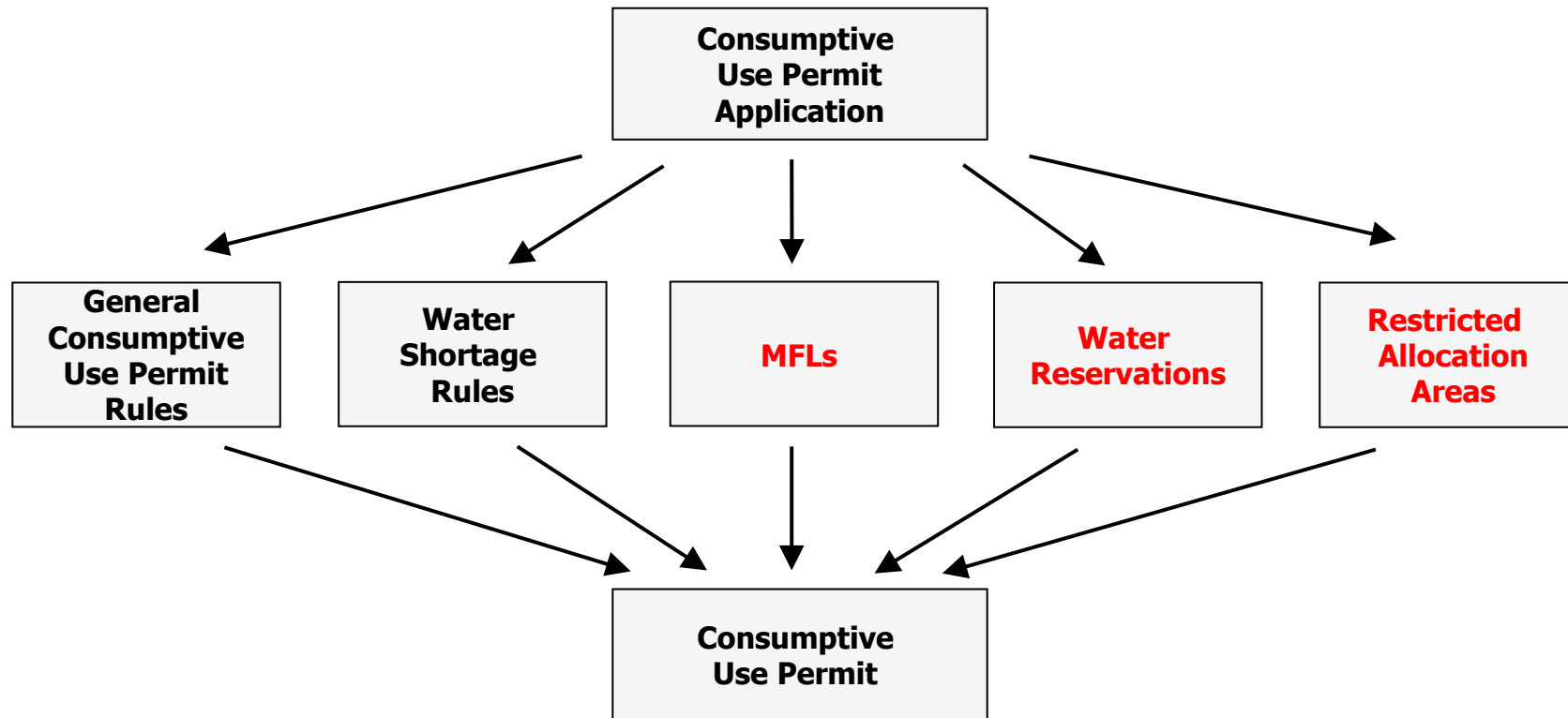
Water Resource Protection Measures



James Beerens, PhD
Lead Scientist, Applied Sciences Bureau
2024 LKB Stakeholder Meeting #2
October 24, 2024



Factors Considered in Consumptive Use Permitting



Minimum Flows and Minimum Water Levels (MFL)

Statutory Authority: Chapter 373, Florida Statutes (F.S.)

Defined in Rule 40E-8.021, F.A.C.

- Annual MFL Priority Waterbody List
- Identify the point at which *further withdrawals* cause significant harm to the water resources
- Established using “*best available information*”
- Peer-reviewed science

Significant harm: Temporary loss of water resource functions that takes more than 2 years to recover but is less severe than serious harm

May be adopted for surface waters or aquifers



MFL Recovery and Prevention Strategies

Section 373.0421(2), F.S.

Recovery Strategy

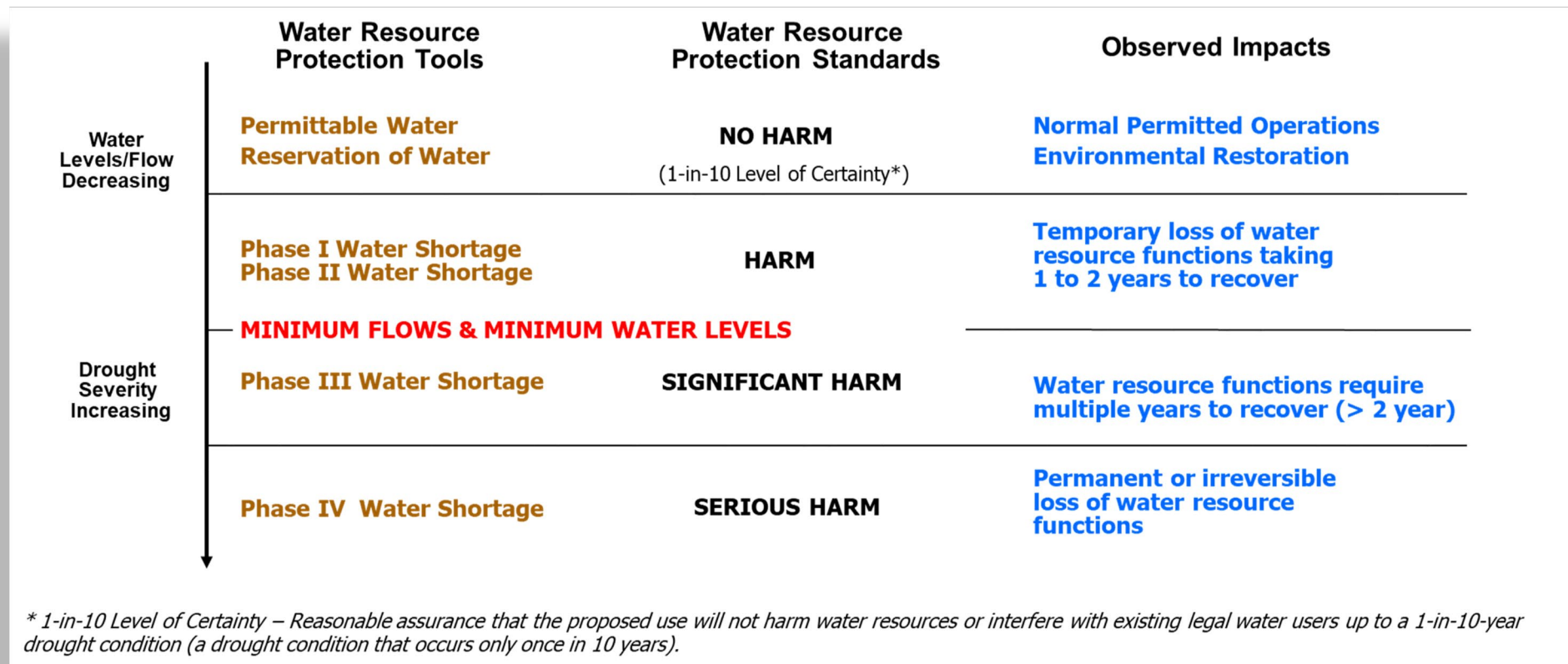
- For waterbodies not meeting the MFL at the time of adoption
- Achieve recovery to the established MFL as soon as “practicable”

Prevention Strategy

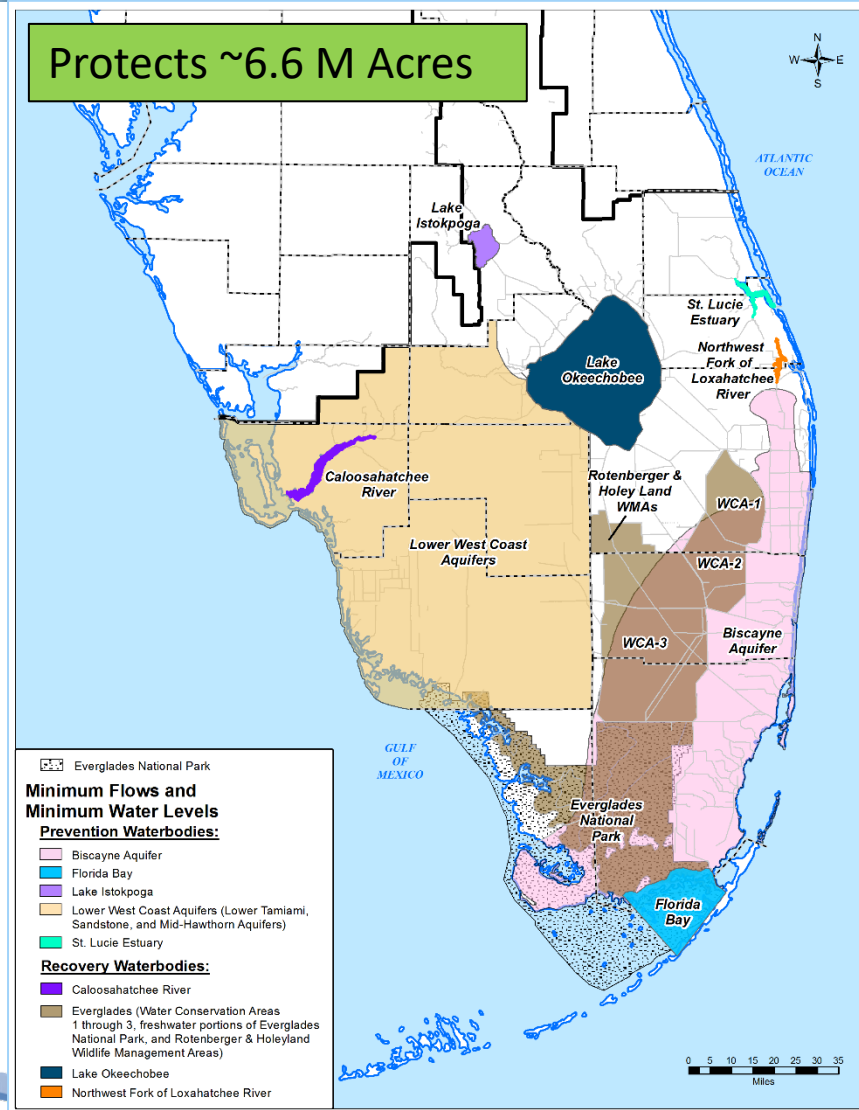
- For waterbodies that are meeting the MFL but are not expected to meet it in 20 years
- Prevent the existing flow or level from falling below the adopted MFL



Conceptual Model of Chapter 40E-8 FAC



MFLs Adopted to Date in SFWMD



With Prevention Strategies

- Biscayne Aquifer (2001)
- Lower West Coast Aquifers (2001)
- St Lucie Estuary (2002)
- Florida Bay (2006)
- Lake Istokpoga (2006)

With Recovery Strategies

- Caloosahatchee River (2001)
- Everglades (2001)
- Lake Okeechobee (2001), revised (2007)
- N.W. Fork of Loxahatchee River (2003)

MFLs Covered in Other Water Supply Plans

MFL Waterbody	Water Supply Plan	MFL Criteria	Recovery or Prevention Strategy
Lower West Coast Aquifers	Lower West Coast	Rule 40E-8.331, F.A.C.	Prevention Subsection 40E-8.421(4), F.A.C.
Lake Okeechobee	Lower East Coast	Subsection 40E-8.221 (1), F.A.C.	Recovery Subsection 40E-8.421(2), F.A.C.



Lake Istokpoga MFL



Rule 40E-8.351, F.A.C. (adopted 2006)

Defined in Subsection 40E-8.021(11), F.A.C as..."the lands and waters contained within the lake below 40' NGVD, the top of the U.S. Army Corps of Engineers (USACE) regulation schedule"

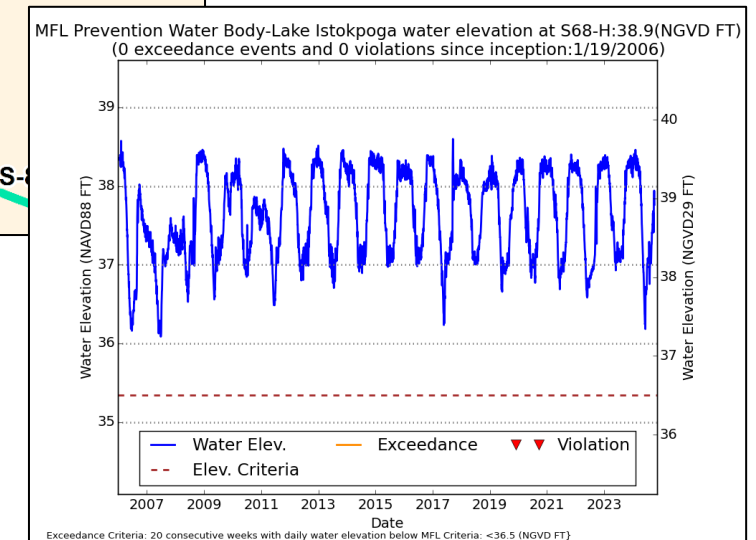
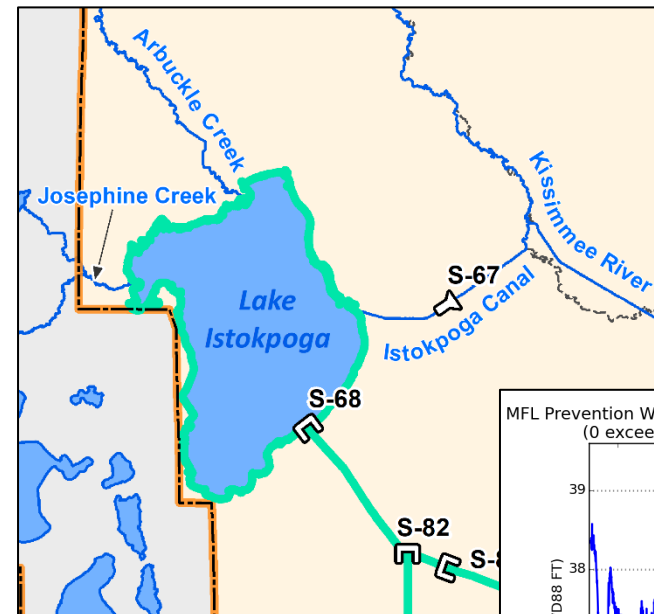
- Lake level of 36.5' NGVD
- An MFL violation occurs when:
 - Surface water level falls below 36.5', for 20 or more weeks within a calendar year, more often than once every four years

Lake Istokpoga Prevention Strategy

Subsection 40E-8.421(7), F.A.C. and Lower Kissimmee Basin Water Supply Plan

Lake water level controlled by operation of S-67 (replaced G-85) and S-68 structures in accordance with USACE regulation schedule

- Continue current operational plan and regulation schedule
- Re-evaluate MFL criteria when changes in lake management occur
- Implement extreme lake drawdowns, when necessary, in a manner that avoids MFL violations



Water Reservations

Sets aside water for the protection of fish and wildlife (or public health and safety)

- Based on scientifically defensible determination of water needed for protection of fish and wildlife
- Reserves water from allocation to consumptive uses
- Required for Comprehensive Everglades Restoration Plan (CERP) projects.



Kissimmee River

Water Reservations Do Not...

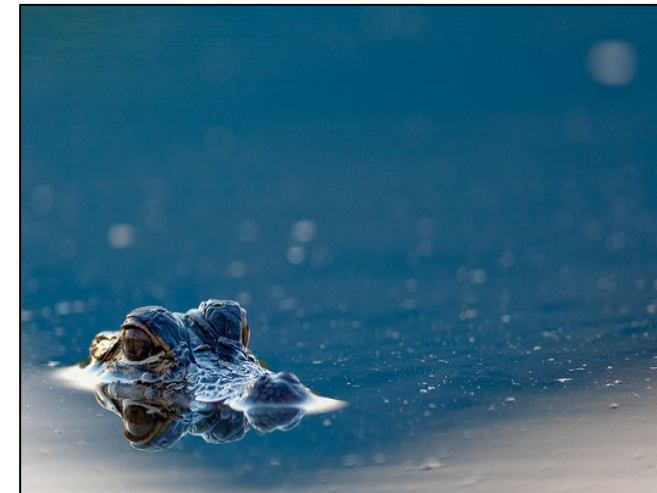
- Prevent use of unreserved water or water allocated under CUPs
- Establish an operating regime
- Drought-proof the natural system
- Ensure wildlife proliferation



Lake Okeechobee under drought conditions
Source: SFWMD

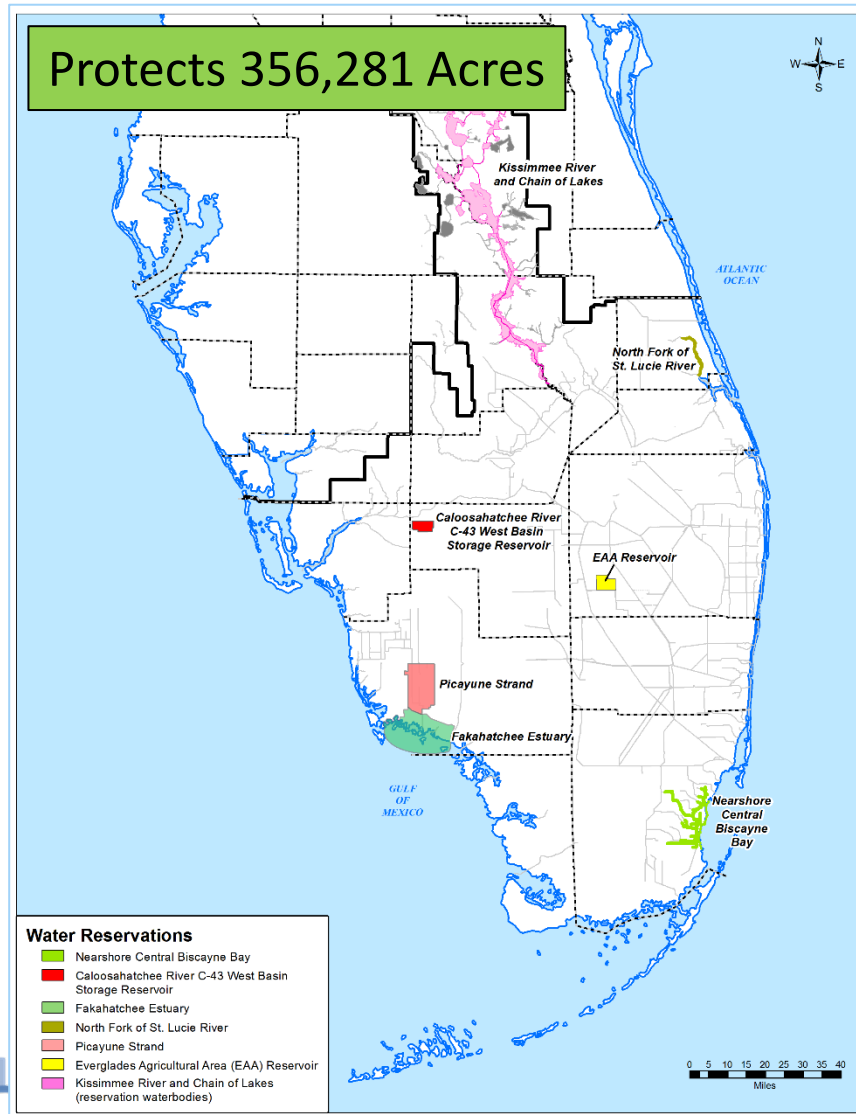


S-67 water control structure (replaced G-85 structure)
Source: SFWMD



American Alligator (*Alligator mississippiensis*)
Source: <http://www.photodrom.com>

Water Reservations Adopted to Date in SFWMD



- Fakahatchee Estuary (2009)
- Picayune Strand (2009)
- North Fork of the St. Lucie River (2010)
- Nearshore Central Biscayne Bay (2013)
- Caloosahatchee River C-43 West Basin Storage Reservoir (2014)
- Kissimmee River & Chain of Lakes (2021)

Water Reservations Completed

Kissimmee River and Chain of Lakes, Rule 40E-10.071, F.A.C.

For the protection of fish and wildlife

Nationally recognized
largemouth bass fishery



Largemouth Bass (*Micropterus salmoides*)
Source: Engbretson Underwater Photography
<https://www.underwaterfishphotos.com>

Endangered Wood
Stork and Snail Kite
nesting colonies



Snail Kite (*Rostrhamus sociabilis*)
Source: <https://de.wikipedia.org>

One of the largest
concentrations of nesting
bald eagles in the U. S.



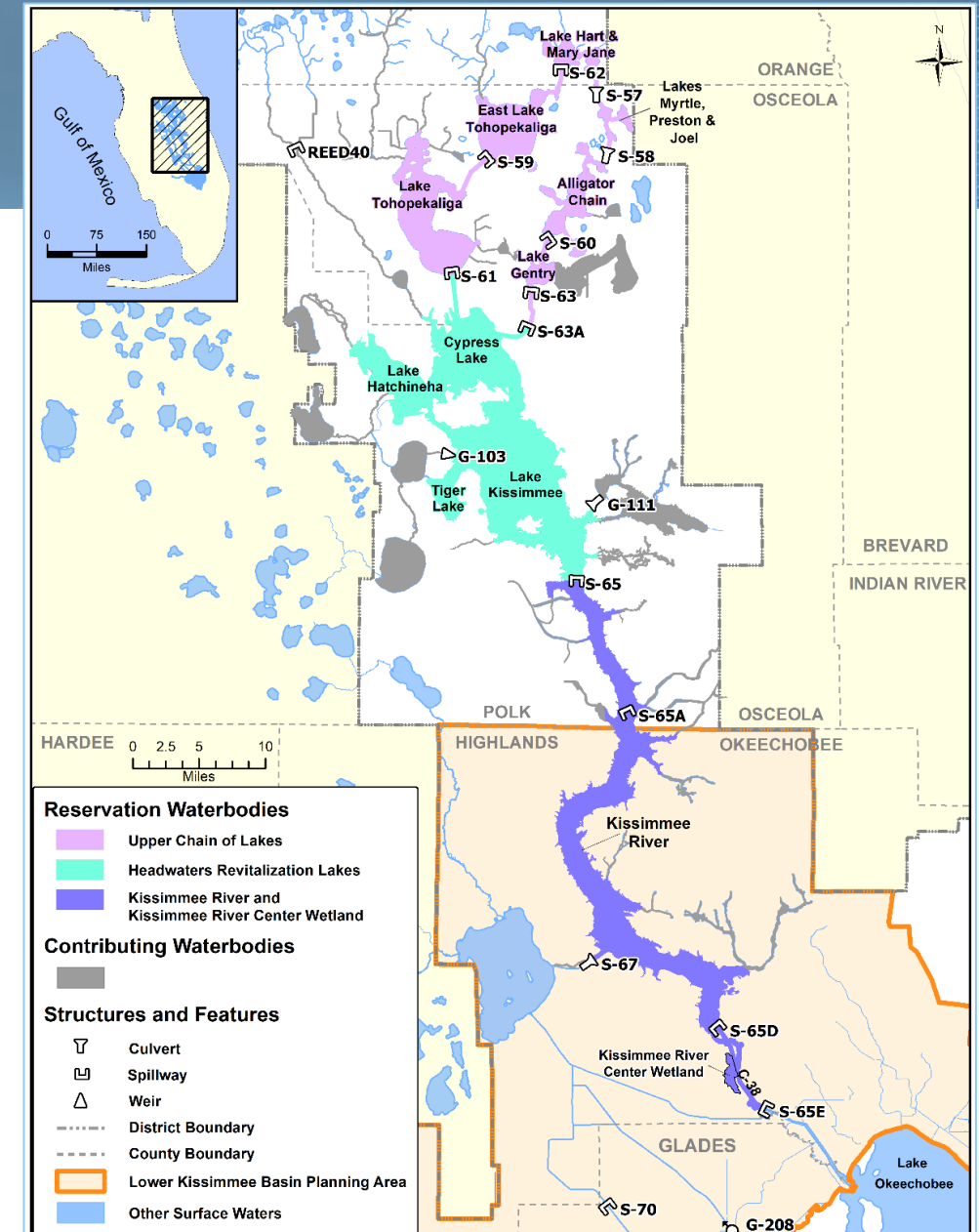
Bald Eagle (*Haliaeetus leucocephalus*)
Source: Audubon.org

Water Reservation

- 172,500 acres and spans portions of LKB and UKB (CFWI) Planning Areas
- Kissimmee River downstream of S-65A is in LKB Planning Area
- Upper Chain and Headwaters Lakes - primary sources of water for the Kissimmee River
- Reservations support KRRP (~\$1 billion public investment)



Kissimmee River Restoration Project (KRRP): Looking north from the south end of the Phase I restoration area.
Source: SFWMD



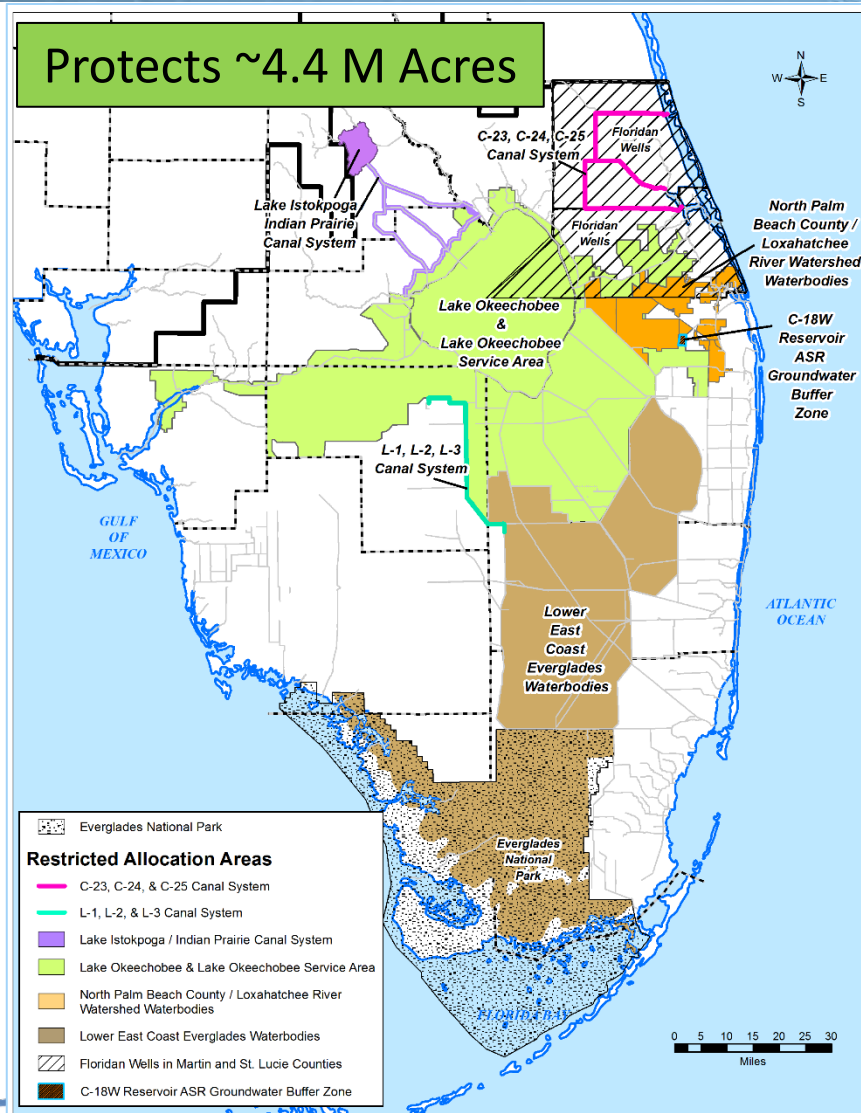
Restricted Allocation Areas (RAA)

Listed in Section **3.2.1** of the ***Applicant's Handbook***, incorporated by reference in **Rule 40E-2.091, F.A.C.**

Definition and Uses

- Areas from which new or increased water allocations are restricted
- Regional in scope, for specific sources or areas of the SFWMD
- Implemented where water for projected needs is insufficient
- Protect water for natural systems and future restoration projects (CERP)
- May be designated as part of MFL recovery or prevention strategies

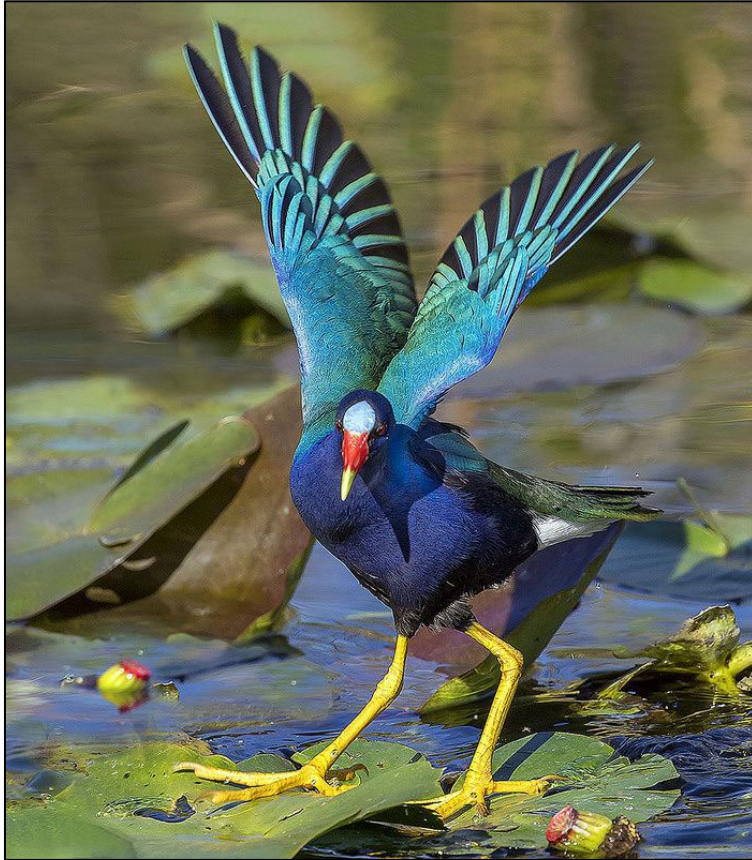
Restricted Allocation Areas in the SFWMD



- C-23, C-24, & C-25 Canal System (1981)
- L-1, L-2, & L-3 Canal System (1981)
- Lake Istokpoga/Indian Prairie Canal System (1981)
- Lower East Coast Everglades Waterbodies (2007)
- North Palm Beach County / Loxahatchee River Watershed (2007)
- Pumps on Floridan Wells in Martin and St. Lucie Counties (2007)
- Lake Okeechobee & Lake Okeechobee Service Area (2008)

RAA Criteria in the Lower Kissimmee Basin Planning Area

RAA	Water Allocations Are Limited To:
Lake Istokpoga / Indian Prairie Canal System	Existing surface water allocations (no additional allocations) Existing surface water pump capacity (no increases in pump capacity)
Lake Okeechobee and Lake Okeechobee Service Area	Historic water use that occurred from April 1, 2001 to January 1, 2008



Purple Gallinule (*Porphyrio martinicus*)
Source: flickr.com

Questions?

For more information contact

James Beerens

jabeeren@sfwmd.gov or
(561) 682-2028

Shimelis Setegn

ssetegn@sfwmd.gov or
(561) 682-2252

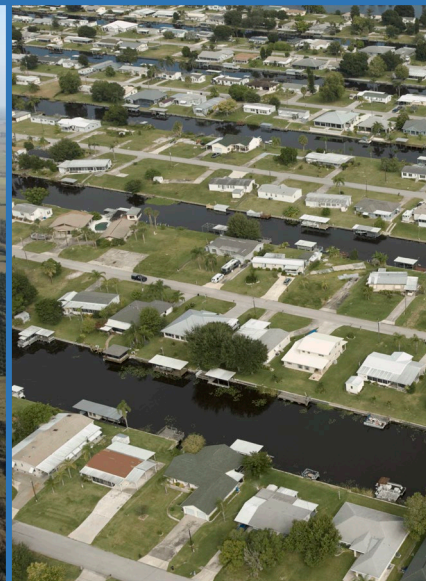
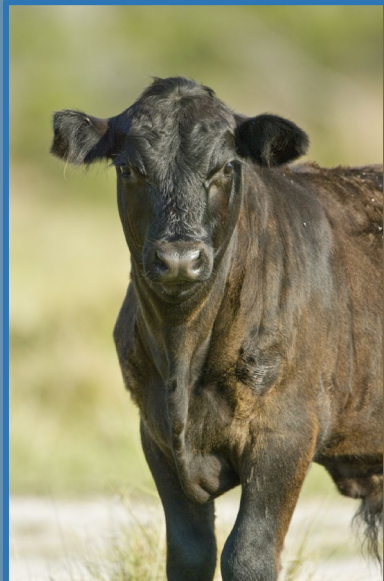
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Kissimmee River

2024 Lower Kissimmee Basin Water Supply Plan Update



Chad Brcka

LKB Water Supply Plan Manager, Water Supply Planning

2024 LKB Stakeholder Meeting #2

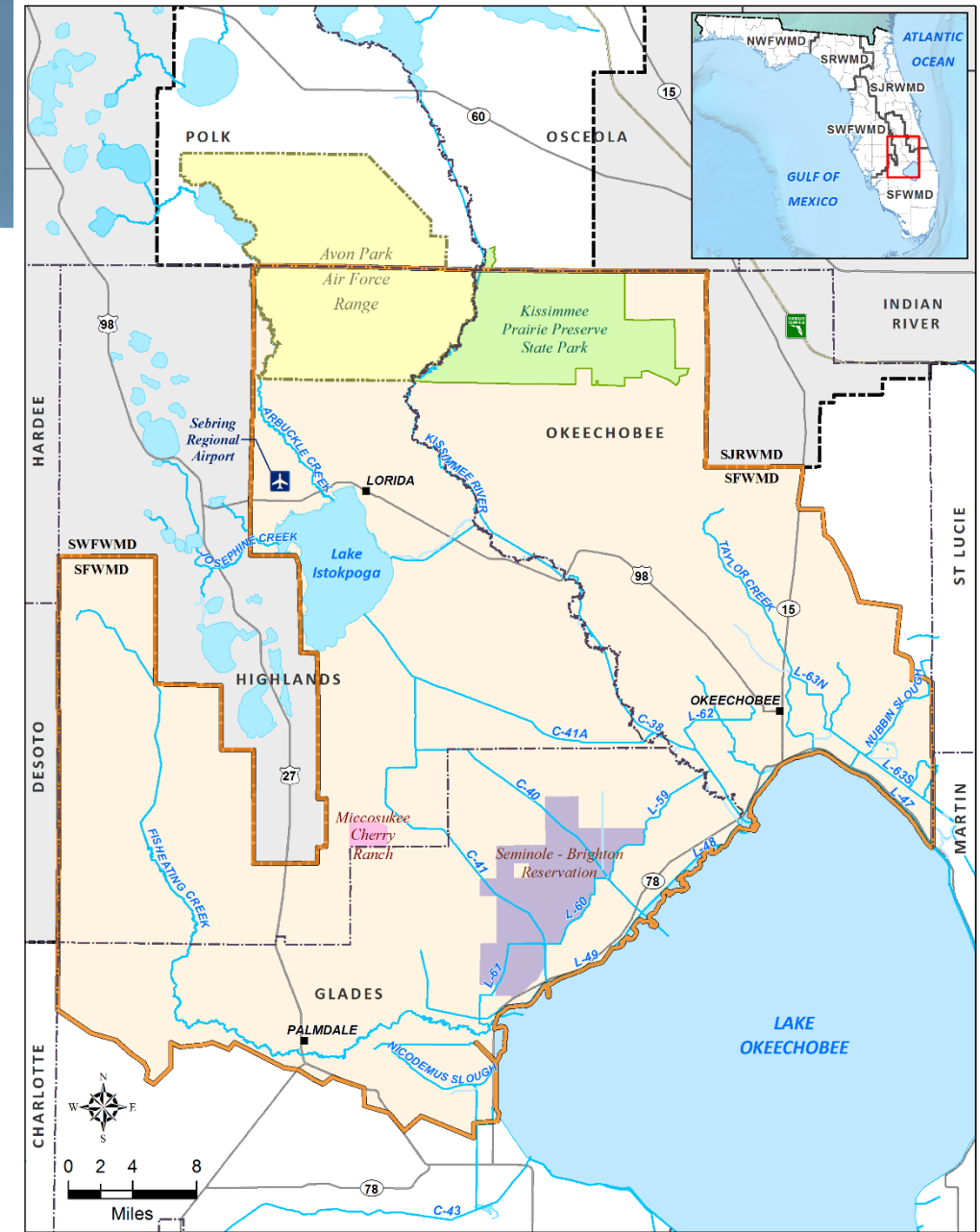
October 24, 2024



LKB Planning Area

- Portions of Okeechobee, Highlands, and Glades counties and tribal lands
- Major agricultural industry
- Population:
 - 2022 52,742
 - 2045 57,508*
- Significant environmental features

*University of Florida (UF) Bureau of Economic and Business Research estimate.



Public Participation

- Governing Board updates
- Two stakeholder workshops
- Discussions with local government, tribal, agricultural, and utility representatives
- Posted draft chapters and an appendix for early review (Ch 1, 2, 3, and App A)
- Full draft LKB document posted online October 14
- Written comments due November 13



2024 LKB Water Supply Plan Organization

- Executive Summary
- Chapter 1: Introduction
- Chapter 2: Demand Estimates and Projections
- Chapter 3: Demand Management: Water Conservation
- Chapter 4: Water Resource Protection
- Chapter 5: Water Source Options
- Chapter 6: Water Resource Analyses
- Chapter 7: Water Resource and Supply Development Projects
- Chapter 8: Conclusions and Future Direction
- Appendix A: Water Demand Projections
- Appendix B: Public Supply Utility Summaries
- Appendix C: MFLs and Prevention and Recovery Strategies
- Appendix D: Wastewater Treatment Facilities

Statutory Goal of Water Supply Plans (Section 373.709, Florida Statutes)

*To identify sufficient water supply sources and future projects to meet existing and future reasonable-beneficial uses during 1-in-10-year drought conditions through **2045** while sustaining water resources and related natural systems.*



Objectives

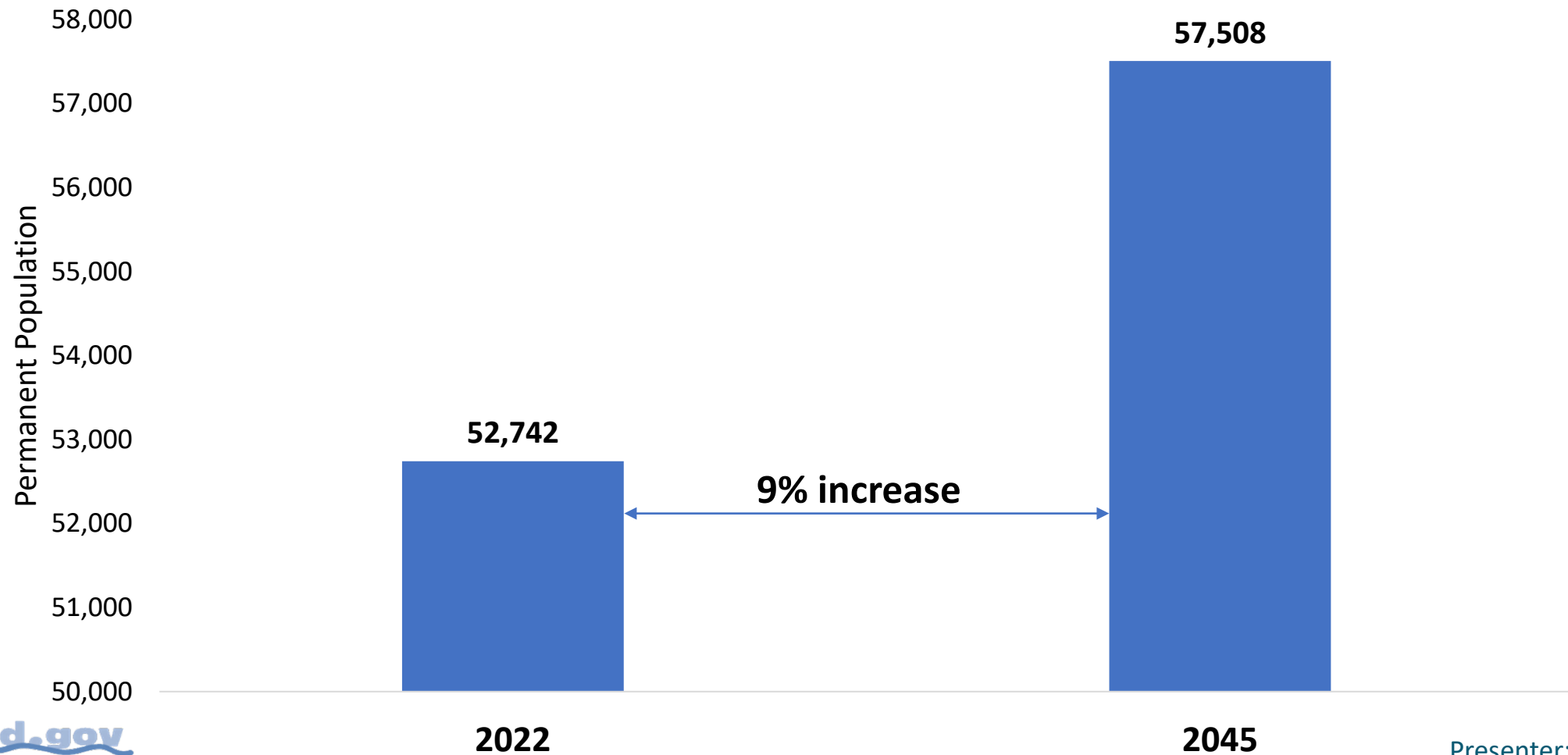
1. Quantify sufficient water supply during 1-in-10-year drought conditions through 2045
2. Identify planned water supply and water resource development projects
3. Ensure natural systems and water resources are protected
4. Encourage water conservation measures and alternative source development
5. Promote compatibility with local government planning
6. Coordinate and integrate with other water resource initiatives

Water Use Categories

1. Public Supply (PS)
2. Domestic Self-Supply (DSS)
3. Agriculture (AG)
4. Commercial/Industrial/Institutional (CII)
5. Landscape/Recreational (L/R)
6. Power Generation (PG)

LKB Population Projections

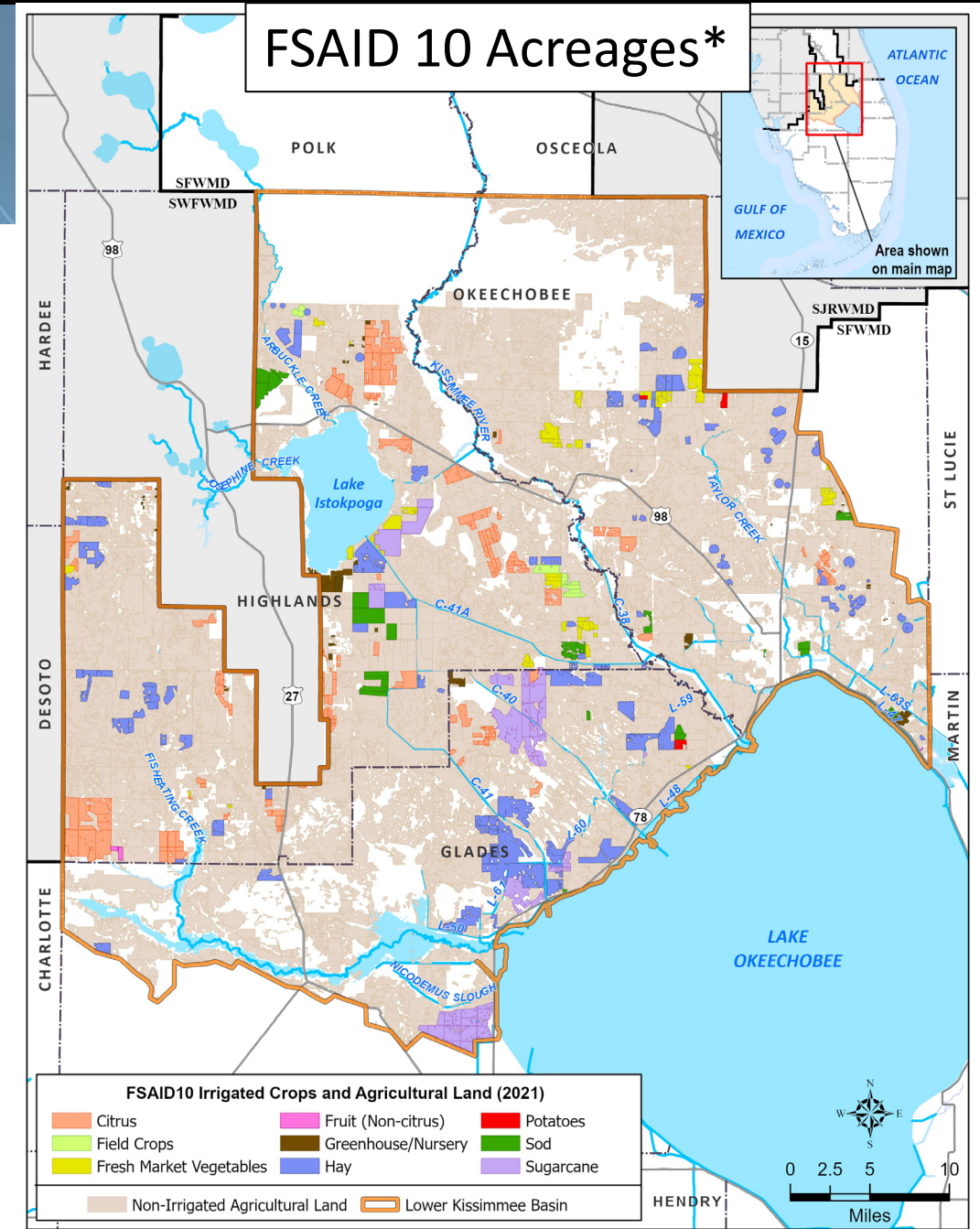
Calculated Using BEBR Medium Projections



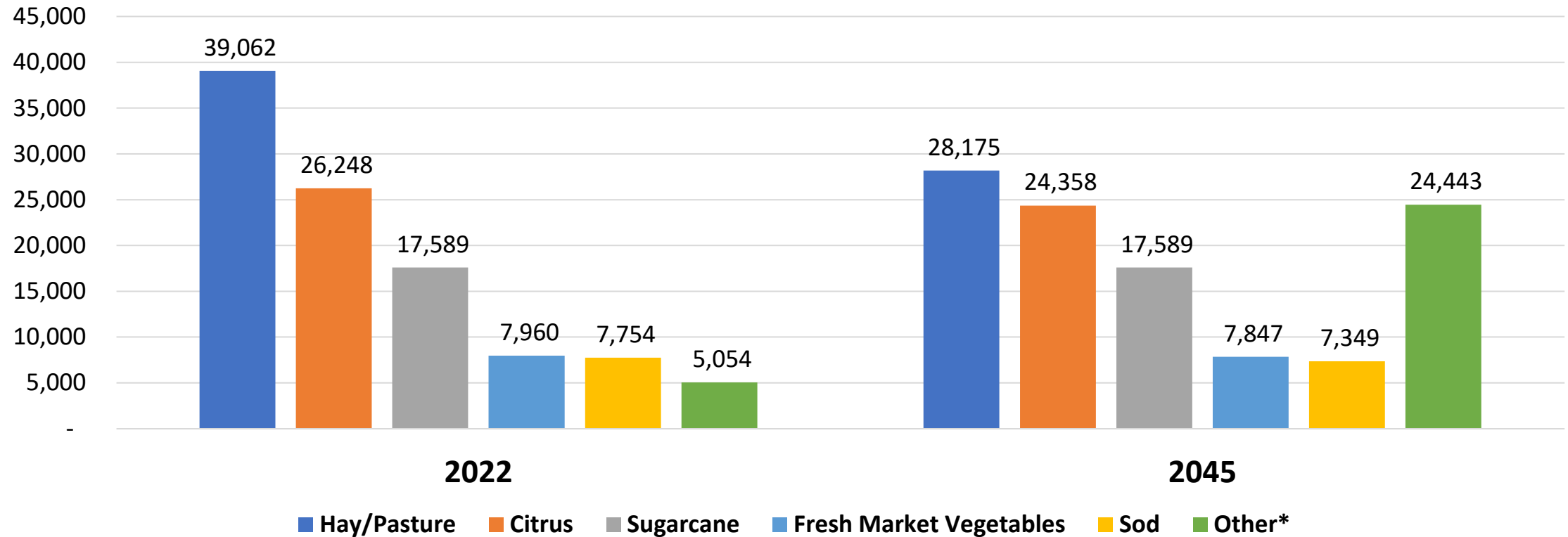
LKB Agriculture

- Largest use category with a projected overall demand increase of 12%
- Predominant crops are hay and irrigated pasture, citrus, and sugarcane
- Greenhouse/nursery has the largest projected increase in acreage and demand

*FSAID = Florida Statewide Agricultural Irrigation Demand Geodatabase



LKB Agricultural Crop Acreage



*Other category includes Fruit (Non-Citrus), Greenhouse/Nursery, Potatoes, and Field Crops

Acres	2020/2022	2025	2030	2035	2040	2045
FSAID 10 Projections (2024 LKB Plan)**	103,667	104,651	111,714	111,282	110,642	109,761
FSAID 5 Projections (2019 LKB Plan)	133,644	134,295	134,552	134,085	134,856	-

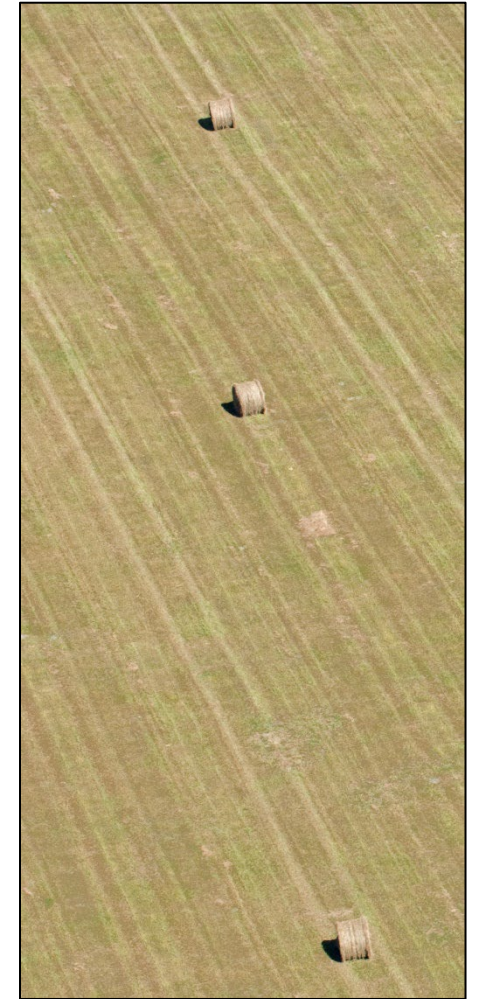
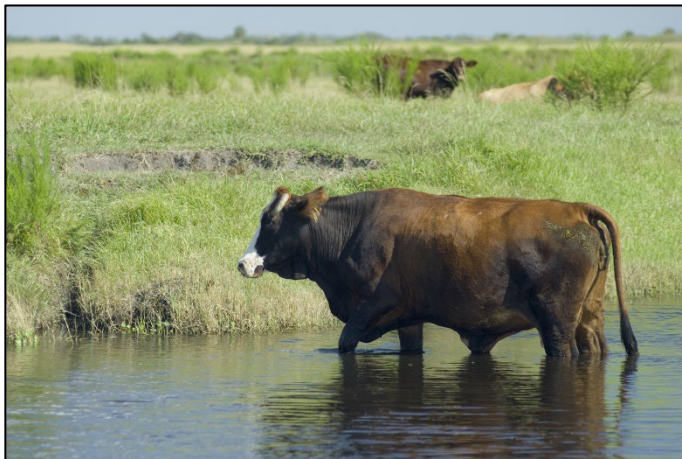
**FSAID acreages were adjusted to reflect projected land use changes in the Third Amendment to the Seminole Tribe of Florida's 33rd Annual Work Plan.

LKB Agricultural Demands Summary

Agriculture Subcategory	2022	2045
Crops	203.26	228.37
Livestock	7.02	7.02
Aquaculture	0.76	0.76
LKB Planning Area Total	211.04	236.15

Demands in million gallons per day.

Total = 12% Increase



Lower Kissimmee Basin Water Demands (mgd) Summary

Water Use Category	2022	2045	2040 From 2019 Plan Update
Public Supply	4.14	5.03	3.39
Domestic Self-Supply	1.80	1.84	2.28
Agriculture (i.e., crop, livestock, and aquaculture)	211.04	236.15	248.14
Commercial/Industrial/Institutional	2.34	2.85	1.95
Landscape/Recreational	6.12	14.68	1.73
Power Generation	0.00	0.00	0.00
LKB Planning Area Total	225.44	260.55	257.49

Demands in million gallons per day.

2024 LKB Demand Total = 16% Increase

Demand Management: Water Conservation

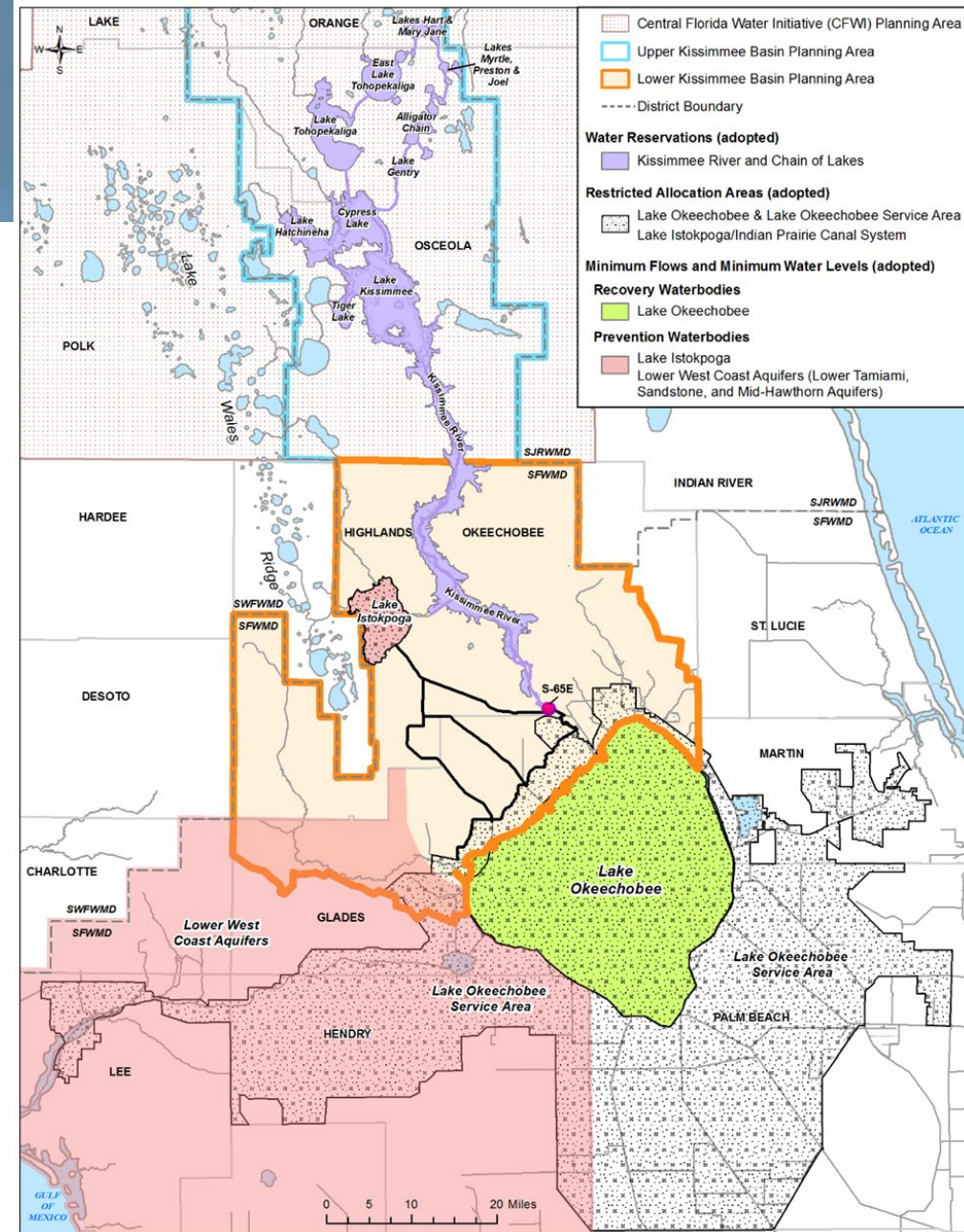
- Agriculture
 - FDACS Best Management Practices
 - More efficient irrigation systems
- Public Supply
 - Outdoor irrigation ordinances
 - More efficient plumbing fixtures
- Potential 2045 savings: 7 mgd



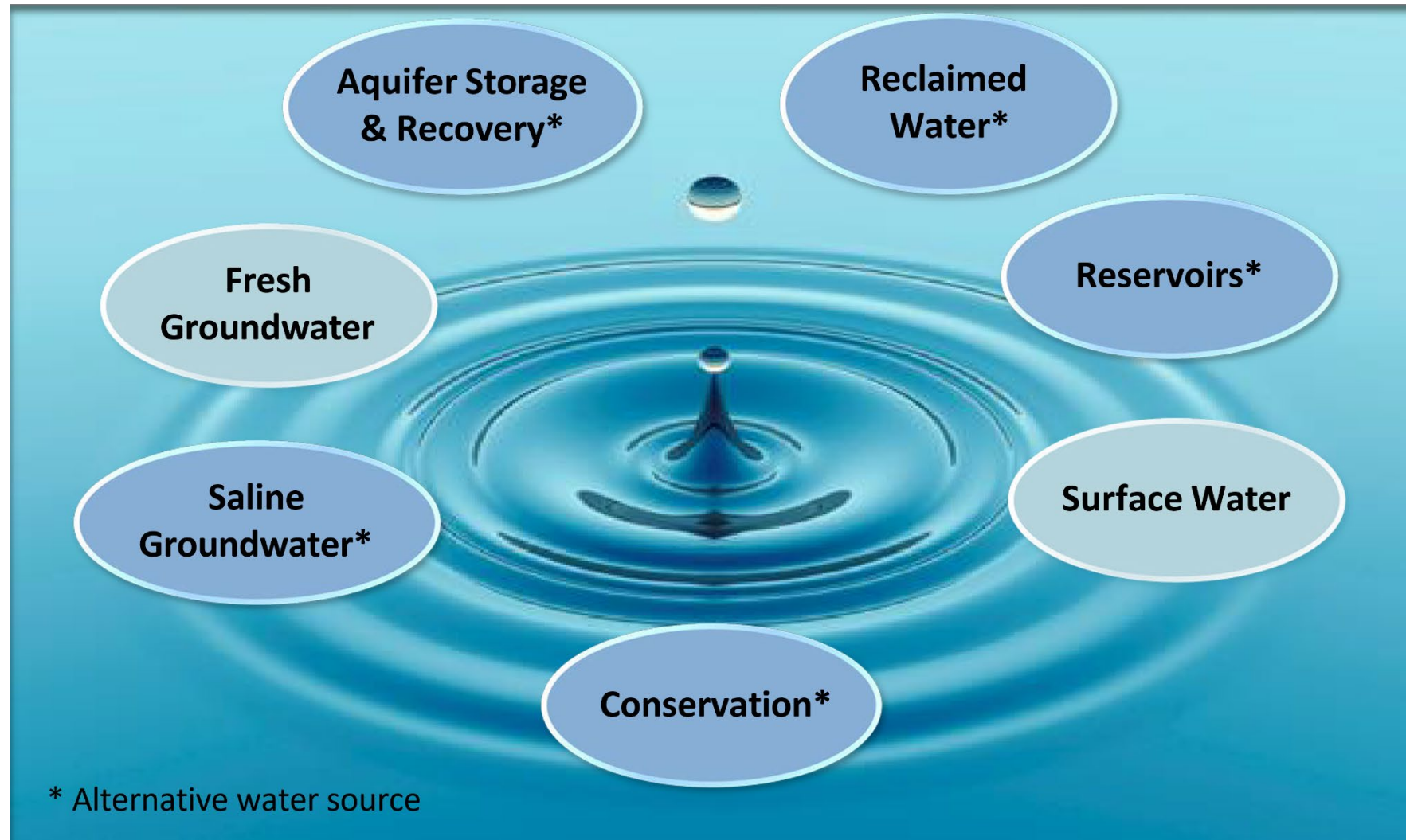
Drip irrigation system

Water Resource Protection

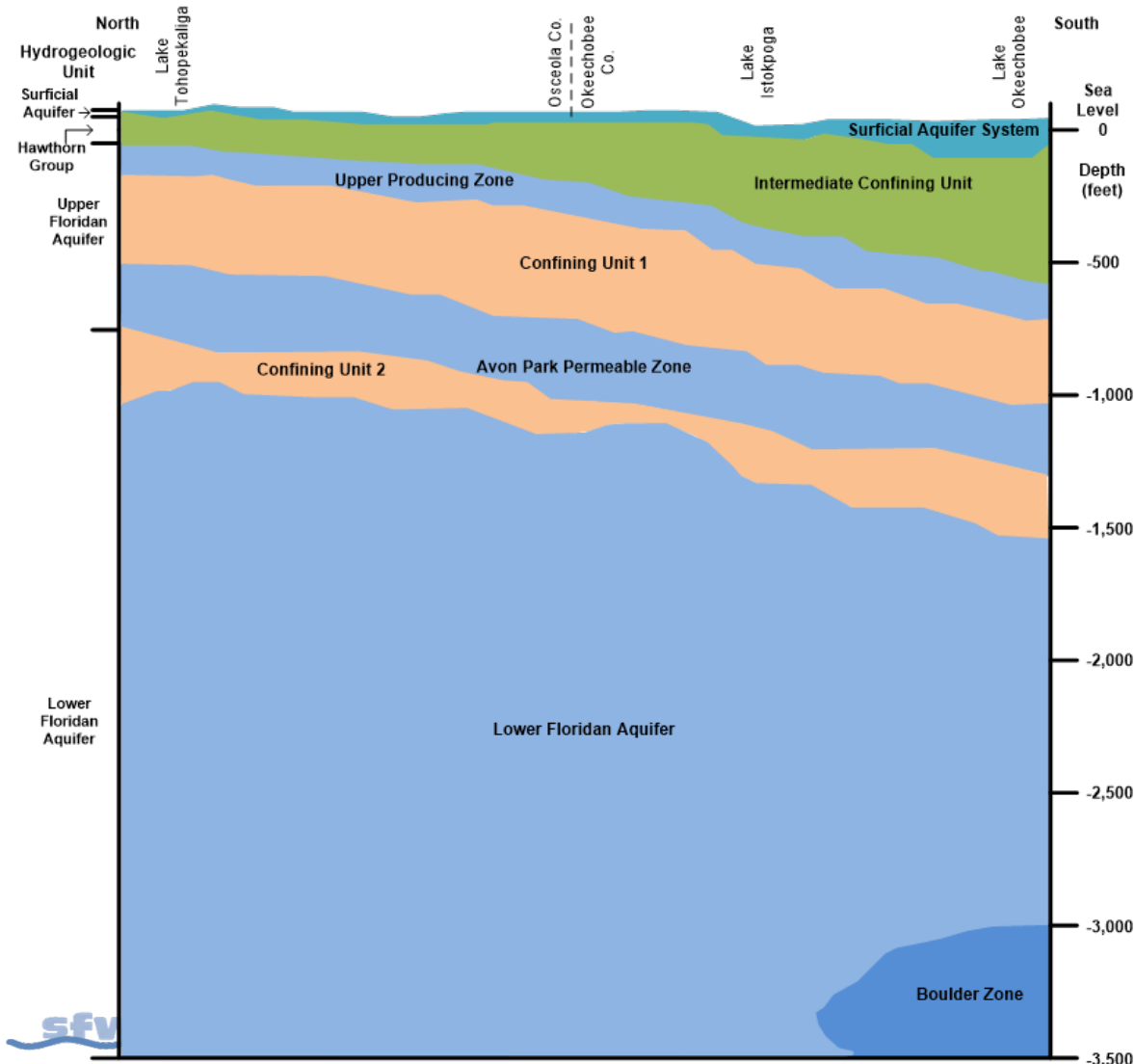
- Minimum Flows and Minimum Water Levels
 - Lake Istokpoga (2006)
 - Lower West Coast Aquifers (2001)
 - Lake Okeechobee (2006)
- Water Reservations
 - Kissimmee River and Chain of Lakes (2021)
- Restricted Allocation Areas
 - Lake Okeechobee Service Area (2008)
 - Lake Istokpoga/Indian Prairie Canal System (1981)



Water Source Options and Alternatives

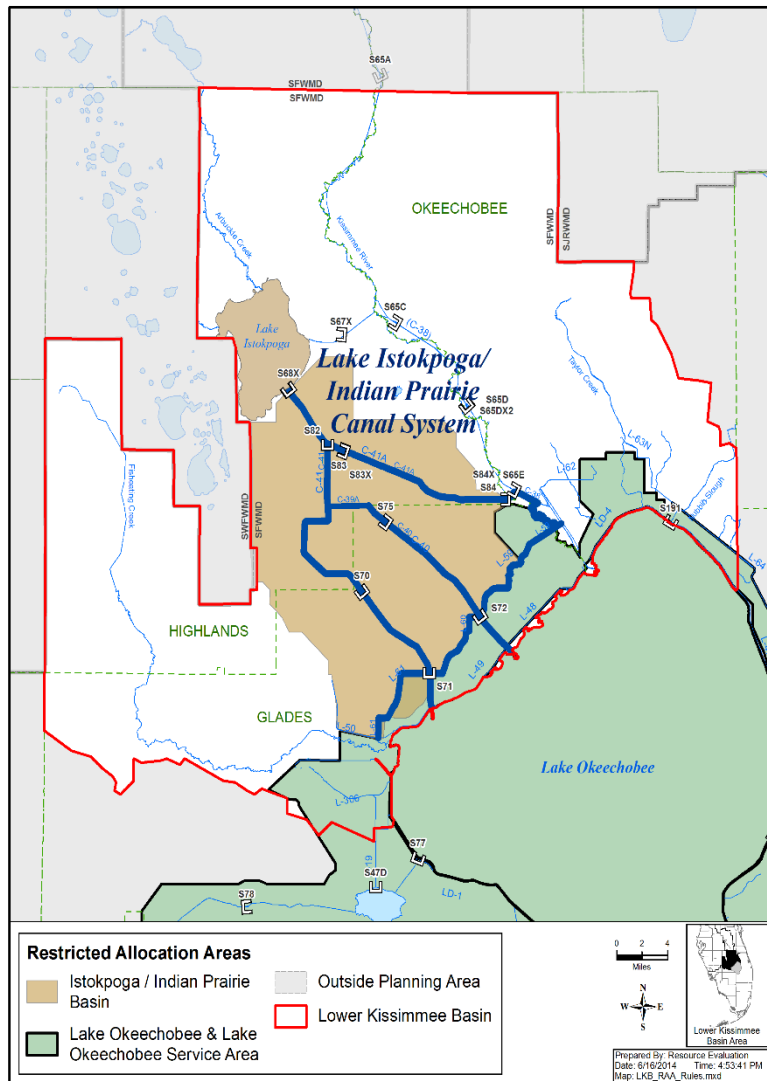


Groundwater of the LKB



- Fresh Groundwater
 - Surficial aquifer system
 - Upper Floridan aquifer (north)
- Saline Groundwater (*chloride >250 mg/L*)
 - Upper Floridan aquifer (south)
 - Avon Park permeable zone
 - Lower Floridan aquifer

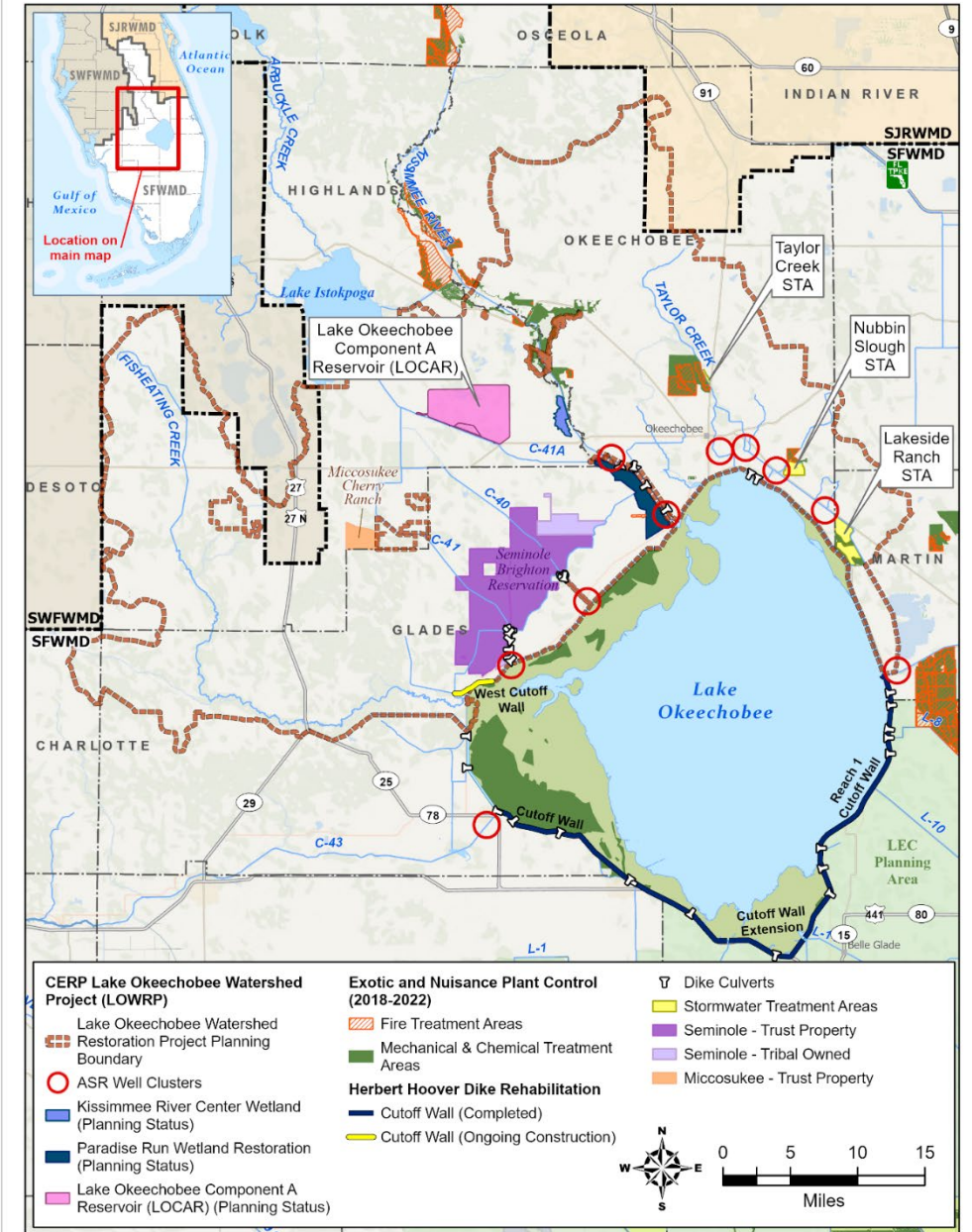
Water Resource Considerations



- Limited surface water availability
 - Lake Istokpoga/Indian Prairie Basin
 - Lake Okeechobee and LOSA
 - Kissimmee River and Upper Chain of Lakes water reservations
- Seminole Tribe of Florida Brighton Reservation water rights
- Groundwater considerations
 - Minimum Flows and Minimum Levels (MFLs) – SFWMD and SWFWMD (Lake Wales Ridge lakes)

Water Resource Development Projects

- Kissimmee River Restoration Project
- Lake Okeechobee Watershed Restoration Project
- Lake Okeechobee Component A Reservoir
- Northern Everglades and Estuaries Protection Program
 - Lake Okeechobee Protection Plan
 - Taylor Creek & Nubbin Slough STAs
- Dispersed Water Management Program



Future Direction

- Continue coordination with utilities, agricultural operations, state agencies, and other stakeholders
- Complete the Kissimmee River Restoration Project
- Implement environmental restoration projects
 - Lake Okeechobee Watershed Restoration Project
 - Lake Okeechobee Component A Reservoir
- Continue to encourage use of alternative water supplies and water conservation practices where appropriate

2024 Water Supply Plan Conclusion

The 2024 LKB Plan Update concludes that the future water demands of the region can continue to be met through the 2045 planning horizon with appropriate management and conservation.



2024 LKB Plan Update Schedule

Topic	Dates
<i>Stakeholder Meeting 1</i>	<i>April 30, 2024</i>
<i>Post Draft Plan for public review & comment</i>	<i>October 14, 2024</i>
<i>Stakeholder Meeting 2</i>	<i>October 24, 2024</i>
Public comment period ends	November 13, 2024
Governing Board Meeting	December 12, 2024

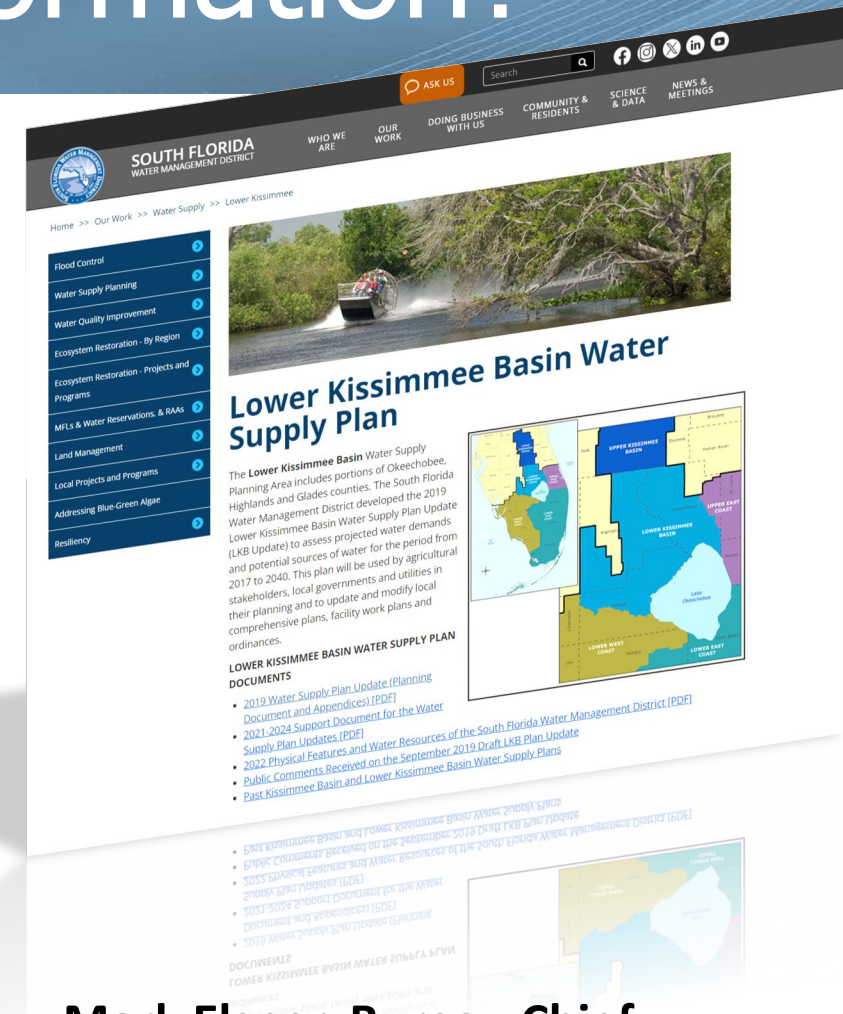
Need Water Supply Information?

- Plan information can be found at www.sfwmd.gov/lkbplan
- Workshop announcements sent via email
- To sign up for emails
 - Go to this webpage: <https://www.sfwmd.gov/news-events>
 - Click on the “Subscribe for Email” icon.
 - Enter email address and click the “Submit” button.
 - In the Subscription Topics list, find the header “SFWMD Water Supply Efforts.”
 - Click in the “Water Supply Planning” box to select this item.
 - Click the “Submit” button.

Chad Brcka, Plan Manager
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Tom Colios, Section Leader
tcolios@sfwmd.gov

Mark Elsner, Bureau Chief
melsner@sfwmd.gov



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Cattle ranch along the Kissimmee River