

March 5, 2024

West Villages Improvement District

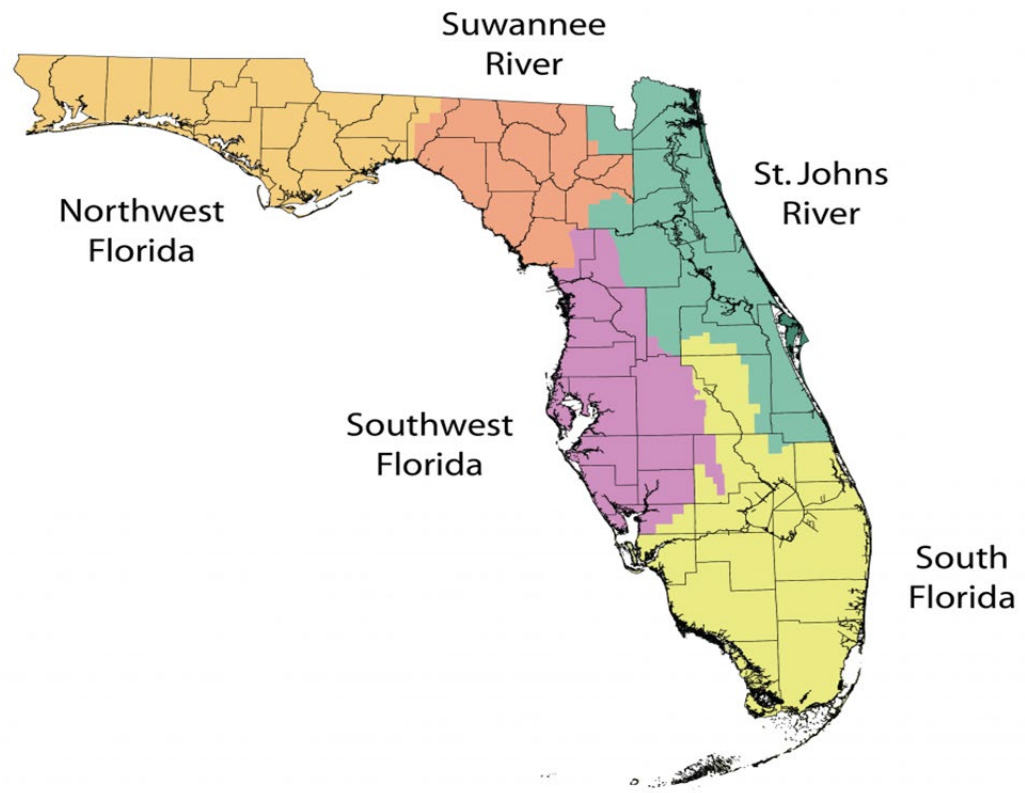
Presentation on WVID Irrigation Program

Water Use Regulation In Florida

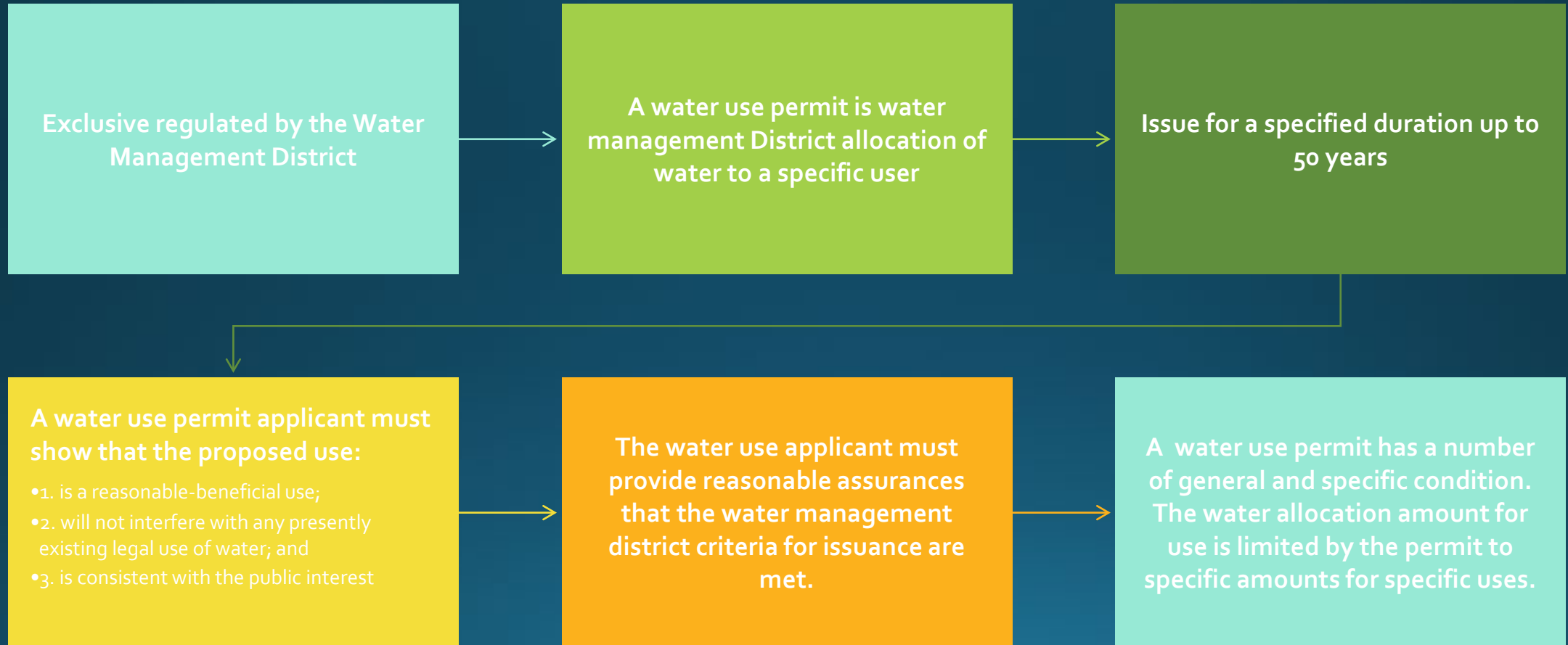
- The State of Florida holds water in trust for use by its citizens and the environment.
- Through the five water management district, Florida provides for the regulation of water use through its water use permitting process.
- The right to water use is limited to the terms and conditions of the water use permit.

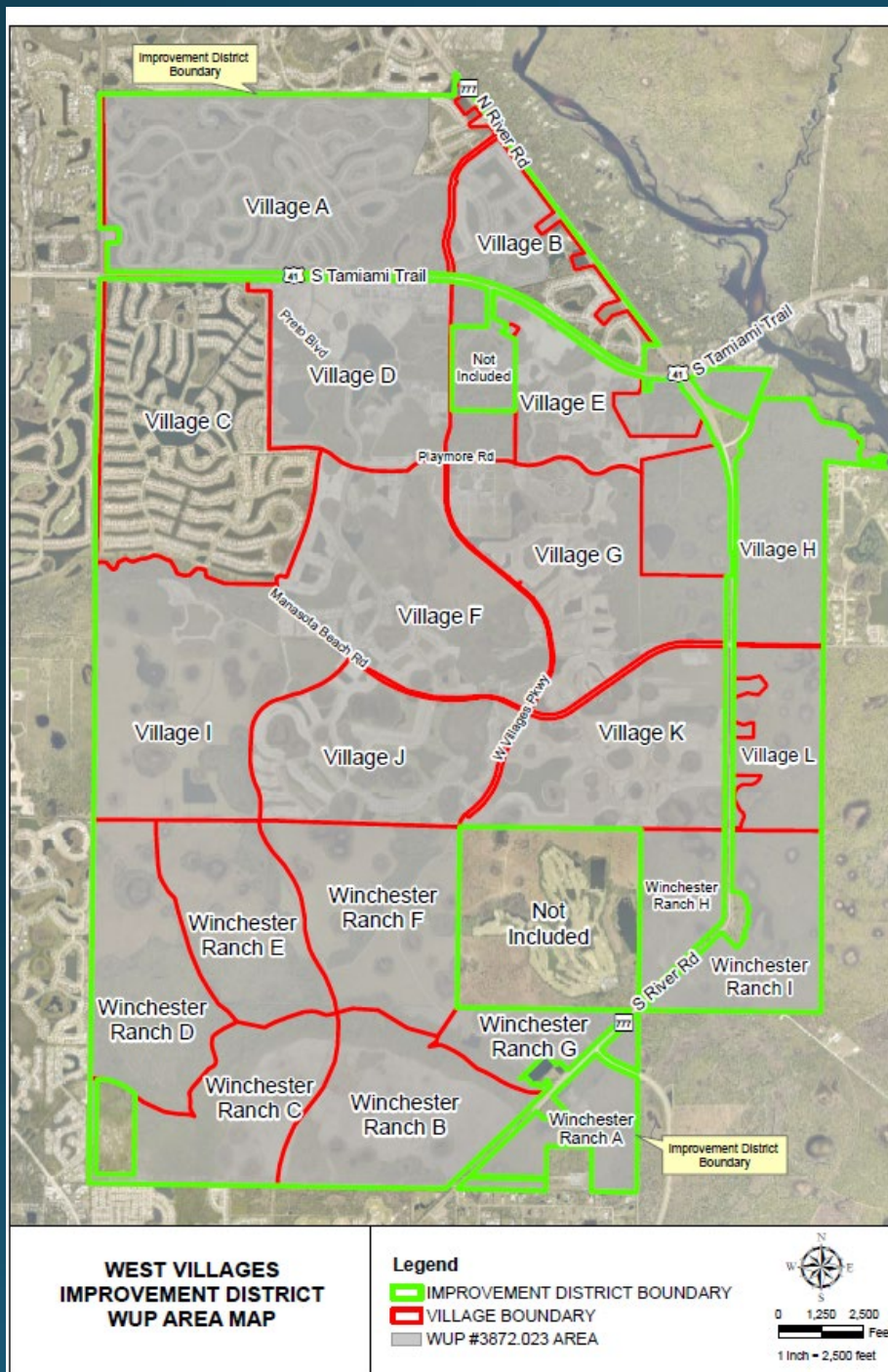
Florida Water Resources Act of 1972

- This Act, codified as Chapter 373 of the Florida Statutes, is the basic document outlining the state's system of water management.
- The Legislature divided the state into five water management districts.



Water Use Permit



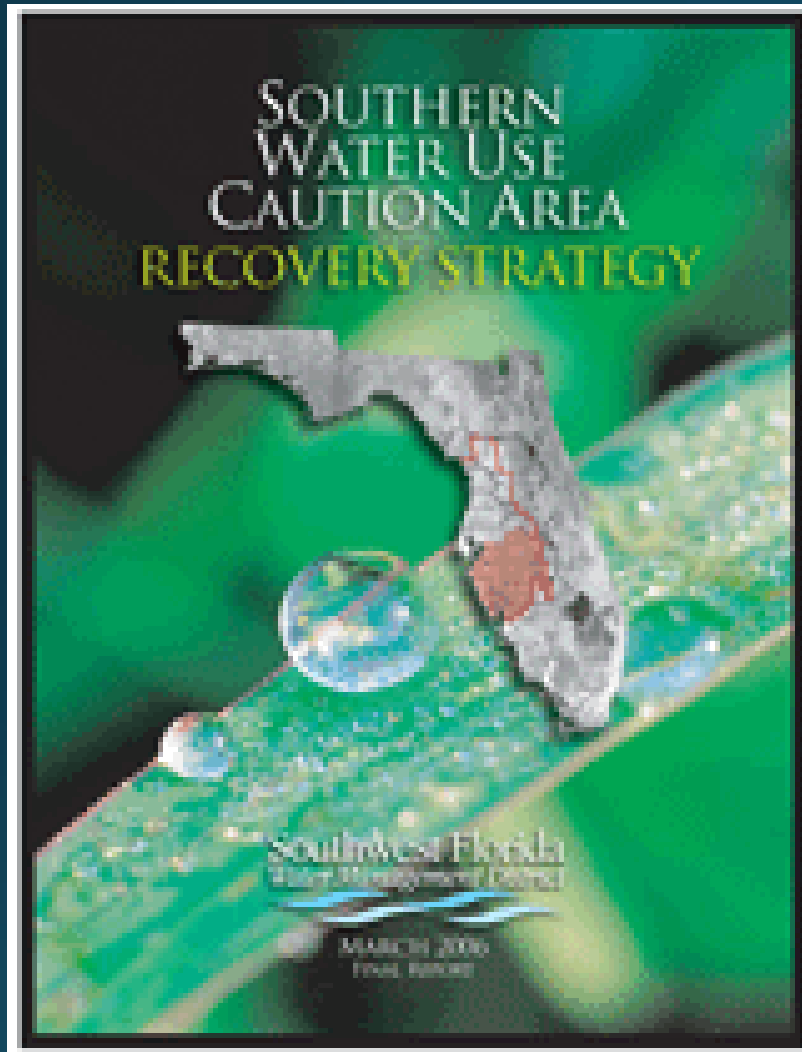


- WVID WUP Boundary and Villages
- Encompasses Approx. 11,400 Acres



Southern Water Use Caution Area (SWUCA)

- Southern Water Use Caution (SWUCA) was designated in 1992 to address declines in aquifer levels due primarily to groundwater withdrawals. Drawdowns in aquifer levels in some areas exceeded 50 feet.
- **Challenges**
 - Reduced flows in the upper Peace River
 - Reduced lake levels in the Ridge Lakes area (extends roughly 90 miles along the center of the state in Polk and Highlands counties)
 - Rate of saltwater intrusion into the Upper Floridan aquifer along the coast, especially in the Most Impacted Area (MIA), an area of about 708 square miles located along the coast of southern Hillsborough, Manatee and northwestern Sarasota counties



SWUCA Recovery Strategy

- Development of a regional water supply plan
- Use of existing rules
- Enhancements to existing rules
- Provide financial incentives for conservation and development of alternative supplies
- Development and implementation of water resource development projects to aid in reestablishing minimum flows to rivers and enhance recharge
- Resource monitoring, reporting and cumulative impact analysis



Most Impacted Area (MIA)

- Drawdowns in aquifer levels in the Southern Water Use Caution Area (SWUCA), due primarily to groundwater withdrawals, are affecting rates of saltwater intrusion into the Upper Floridan aquifer along the coast, especially in the Most Impacted Area (MIA), an area of about 708 square miles located along the coast of southern Hillsborough, Manatee and northwestern Sarasota counties. A minimum aquifer level was set to reduce the rate of intrusion.

Conjunctive Use of Alternative Water Supplies

- An alternative water supply includes using a nontraditional source of water.
- In the SWUCA Alternative Water Supplies include:
 - Surface water
 - Reclaimed water
 - Intermediate Aquifer (Hawthorne Aquifer System)-Groundwater
- **WVID 20+ Years** of planning to develop Conjunctive Use of Alternative Water Supplies



The Wellen Park Water Use Permit

Permit # 20-003872.003 (the "WUP") was originally issued in 1991 to the original developer-Taylor Ranch, Inc.

1991

Fourth Quarter Properties XXII LLC ("Fourth Quarter") acquired the project and was updated as the permittee in 2003

- Wells within Gran Paradiso were added to WUP

- Well Construction began in 2005

2003

The Master Developer acquired the West Villages/Wellen Park project in early 2014

early
2014

Rights to the WUP, including the rights to the wells and the water generated therefrom, were assigned to the Master Developer in June 2014

June
2014

WVID was added as a co-permittee as the irrigation water user on the WUP in 2018

2018

Current AGMOD allocations for the entire Wellen Park project were incorporated into the WUP in 2018


2018

Brief History of the Wellen Park Water Use Permit



Basics of WUP 20-003872.023

- Co-Permittees: The Ranch Land Operations, LLLP and WVID as water user
- The permittee holds the sole and exclusive right to the following within Wellen Park:
 1. Surface water (i.e. irrigation lakes)
 2. Reclaimed water (i.e. supplied by the City of North Port, Sarasota County, and/or Englewood Water District)
 3. Groundwater (i.e. wells)
- Expires: **50 year** WUP up for renewal on **August 24, 2068**
- Use: Landscape/Recreation and Agricultural



WUP 20-003872.023 Wellen Park Irrigation Allocations

- The WUP dictates the amount of irrigation water available to the Wellen Park development, as well as to the individual communities within Wellen Park
- Permitted quantities are based on SWFWMD's irrigation allocation calculation program (AGMOD)
 - The AGMOD calculation is based on the amount of irrigable acres located within a specific project boundary, as well as property use type, irrigation type, and soil type
 - Capacity of the wells, volume of irrigation storage lakes, etc. are not relevant to determination of demands

Demands

Current WUP Service Area	Village Component	Permitted Annual Average (gpd)
PIL 3	Village A (Gran Paradiso)	558,700
PIL 1	US 41, WV Pkwy, NW Commercial Quadrant (Village A) Village D, E, F, G and Braves Facility, River Rd Office Park, Sarasota School Board, SMH, <u>Renaissance</u>	1,495,000
PIL 2	Village H, I, J, K and L	1,336,600
	Totals	3,390,300

Demands

Current WUP Service Area	Village Component	Permitted Peak Month (gpd)
PIL 3	Village A (Gran Paradiso)	1,770,700
PIL 1	US 41, WV Pkwy, NW Commercial Quadrant (Village A) Village D, E, F, G and Braves Facility, River Rd Office Park, Sarasota School Board, SMH, <u>Renaissance</u>	4,726,300
PIL 2	Village H, I, J, K and L	4,166,100
	Totals	10,663,100

Permitted Sources

Source	Annual Average (gpd)	Pk. Month (gpd)
Groundwater	2,489,900	6,735,900
Sarasota Reclaimed Water	250,000	250,000
Englewood Reclaimed Water	250,000	250,000
WVID WWTP Reclaimed Water (Max at Buildout)	3,500,000	3,500,000
Total	6,489,900	10,735,900

Most Probable Sources

Source	Annual Average (gpd)	Pk. Month (gpd)
Groundwater	2,489,900	6,735,900
Sarasota Reclaimed Water	100,000	100,000
New Englewood Reclaimed Water Proposed 7-10 years	562,500	562,500
WVID WWTP Reclaimed Water (Max at Buildout)	2,187,500	2,187,500
Total	5,339,900	9,585,900

Demand and Supply

An. Avg. Demand = 3.39 MGD

Permitted GW=2.49 MGD

Probable Available Reclaimed= 2.85 MGD

Total Source: 5.34 MGD

Demand and Supply

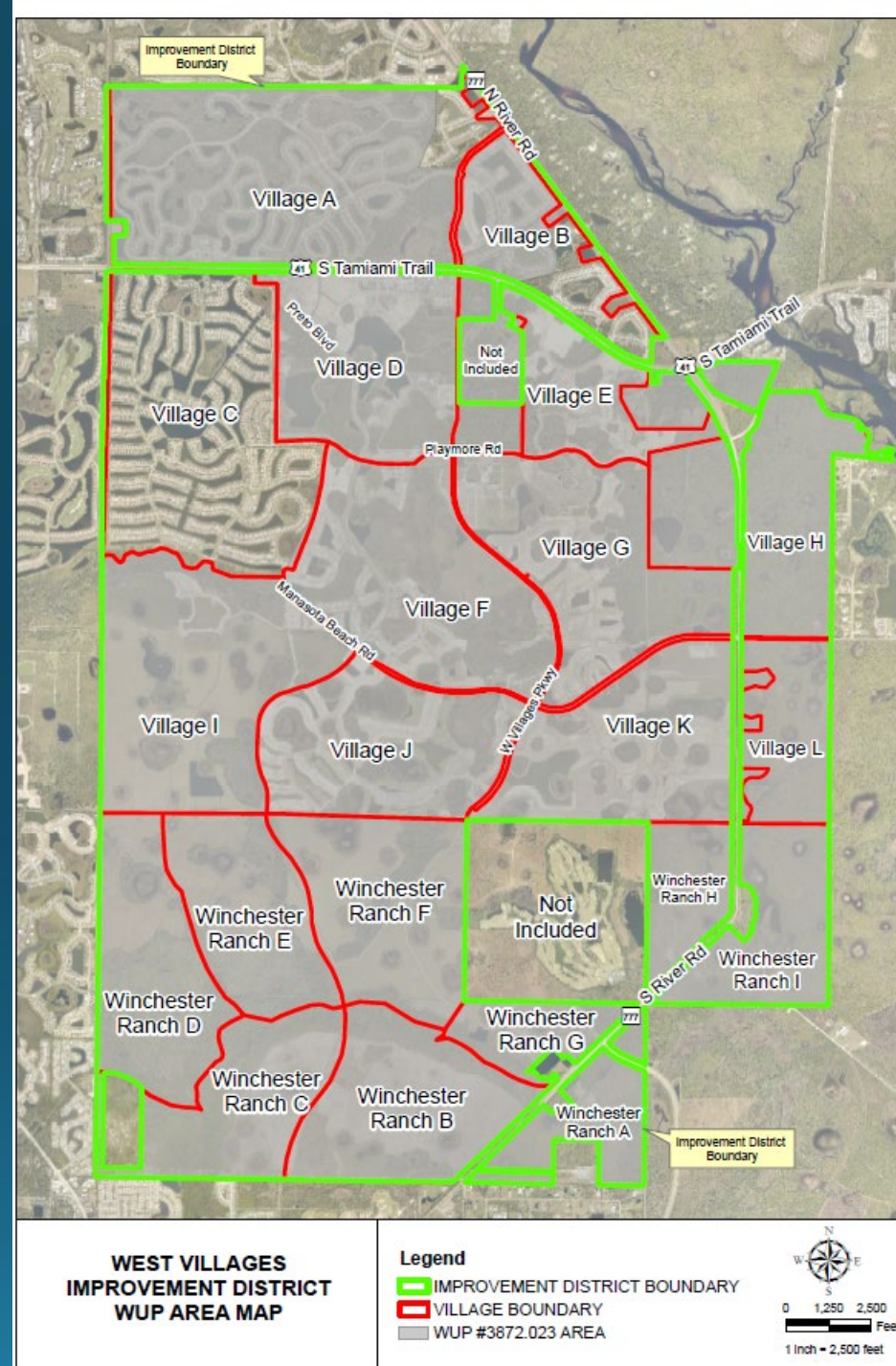
Pk. Month Demand = 10.66 MGD

Permitted GW = 6.74 MGD

Probable Available Reclaimed = 2.85 MGD

Total Source = 9.59

- Demand Projections do not include Winchester.
- Winchester will increase projected 2031 Demands to:
 - An. Avg = 6.29 MGD
 - Current An. Avg Supply = 5.34 MGD
 - Deficit **0.95 MGD**
- Pk. Month = 20.07 MGD
- Current Pk. Month Supply 9.59 MGD
- Deficit **10.48**



Solutions

- **Ongoing Water Supply Planning**
- **Conjunctive Use of Alternative Water Supplies:**
 - Maximize Storage and Use of Storm Water/Surface Water During Wet Season (June-September)
 - Maximize Storage and Use of Reclaimed Water
 - **Efficient and Effective Use of Groundwater During Dry Season (October-May)**
 - Attempting to secure priority use of irrigation sources.
- **Water Conservation**

UPDATE JUNE 2023 WEST VILLAGES IMPROVEMENT DISTRICT WATER CONSERVATION PLAN LANDSCAPE AND RECREATIONAL USE

PREPARED BY
David Kelly, P.G.
Principal, Water Resources

RESPEC
2550 Green Forest Lane
Lutz, Florida 33558

PREPARED FOR
West Villages Improvement District

JUNE 2023

RESPEC.COM



WUP: 20 003872.023 Requires

Special Condition 15:

The Permittee shall immediately implement the District-approved water conservation plan that was submitted in support of the application for this permit. Conservation measures that the Permittee has already implemented shall continue, and proposed conservation measures shall be implemented as proposed in the plan.

Progress reports on the implementation of water conservation practices indicated as proposed in the plan as well as achievements in water savings that have been realized from each water conservation practice shall be submitted as part of the Permit Transition and Expansion Summary Report every ten years (2028).

WUP 20-003872.023 - Conservation Conditions

15. The Permittee shall immediately implement the District-approved water conservation plan that was submitted on May 9, 2018 in support of the application for this permit. Conservation measures that the Permittee has already implemented shall continue, and proposed conservation measures shall be implemented as proposed in the plan. Progress reports on the implementation of water conservation practices indicated as proposed in the plan as well as achievements in water savings that have been realized from each water conservation practice shall be submitted as part of the Permit Transition and Expansion Summary Report every ten years.(449)

- WVID and the Master Developer are required to implement the SWFWMD-approved Water Conservation Plan
 - i.e. violation of the conservation plan is a violation of the WUP
- In relevant part, the Water Conservation Plan, has the following requirements:
 - 1. WVID/Master Developer are to supply irrigation water to the customer (i.e. the community HOAs) based on SWFWMD's AGMOD irrigation allocation program
 - 2. Customers (i.e. the community HOAs) must create and implement their own water conservation plan
 - 3. WVID/Master Developer must ensure the customers' (i.e. the community HOA's) compliance with the AGMOD allocations



WUP 20-003872.023 Conservation Conditions

- 2. Customers must create and implement a water conservation plan
 - “Prior to any customer receiving irrigation water from WVID, the customer must apply a water conservation plan that at a minimum addresses the following practices outlines below.”



WUP 20-003872.023 Conservation Conditions

- 3. Customer compliance with AGMOD allocations

If the customer uses more water for irrigation than their AGMOD allocation, WVID will notify the customer that they are over using irrigation supplies. If the customer does not come into compliance with irrigation demand allocation within 90 days, WVID will inform the customer that they are required to submit a corrective action plan. That plan, at a minimum, will include a review of their existing irrigation conservation plan and address how it is being implemented, along with providing any foreseeable updates to their plan. The corrective action plan will require identification of the cause of the over use, and corrective actions taken to return their use into compliance. Furthermore, the corrective action plan will identify actions taken by the customer to ensure there will not be a recurrence of same issues, which caused the initial over use.

Water Conservation

- The WVID is committed to using the lowest quality water sources in conjunction with water conservation practices to provide all users within its service area with irrigation water in the most effective and efficient manner.
- The WVID as a government entity is a supplier of water that uses an integrated system to distribute water for the use of irrigation within its Current WUP Service Area. The WVID will meter water within its distribution system to measure the amount of water that is provided to each customer. The WVID is not responsible for the customer's irrigation system and its implementation.

Efficient and Effective Use of Groundwater

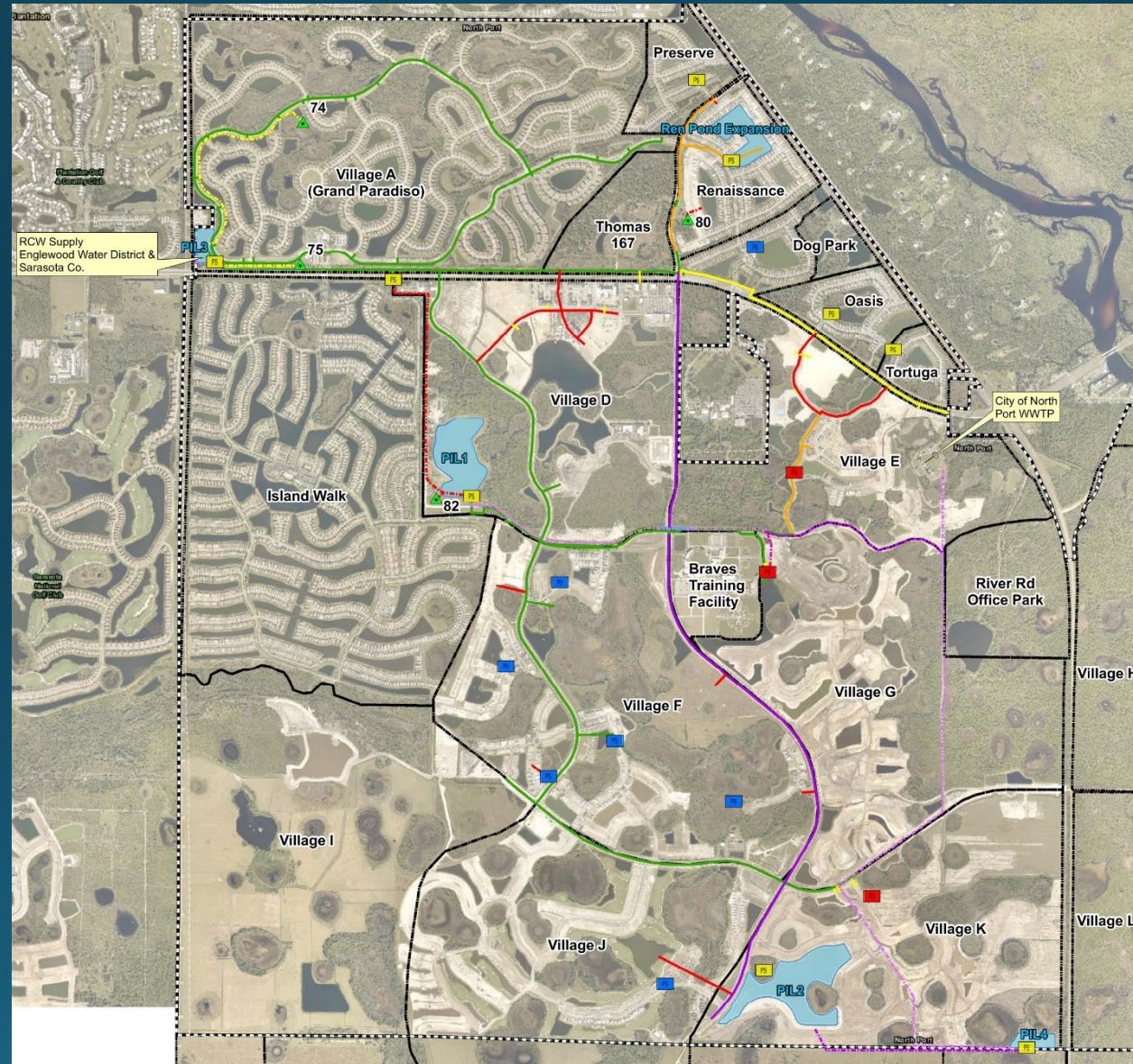
- Everyday Groundwater is not used. The water is “banked” with “interest”.
- WUP Allocated 2,490,000 GPD An. Avg.
- When WVID Irrigation System is fully developed: If Groundwater is used only for 8 months of the year (OCT-May)
 - 2,490,000 GPD becomes **3,735,000 gpd**
 - Used only 6 months of the year = **4,980,000 gpd**

Efficient and Effective Use of Groundwater is Water Conservation

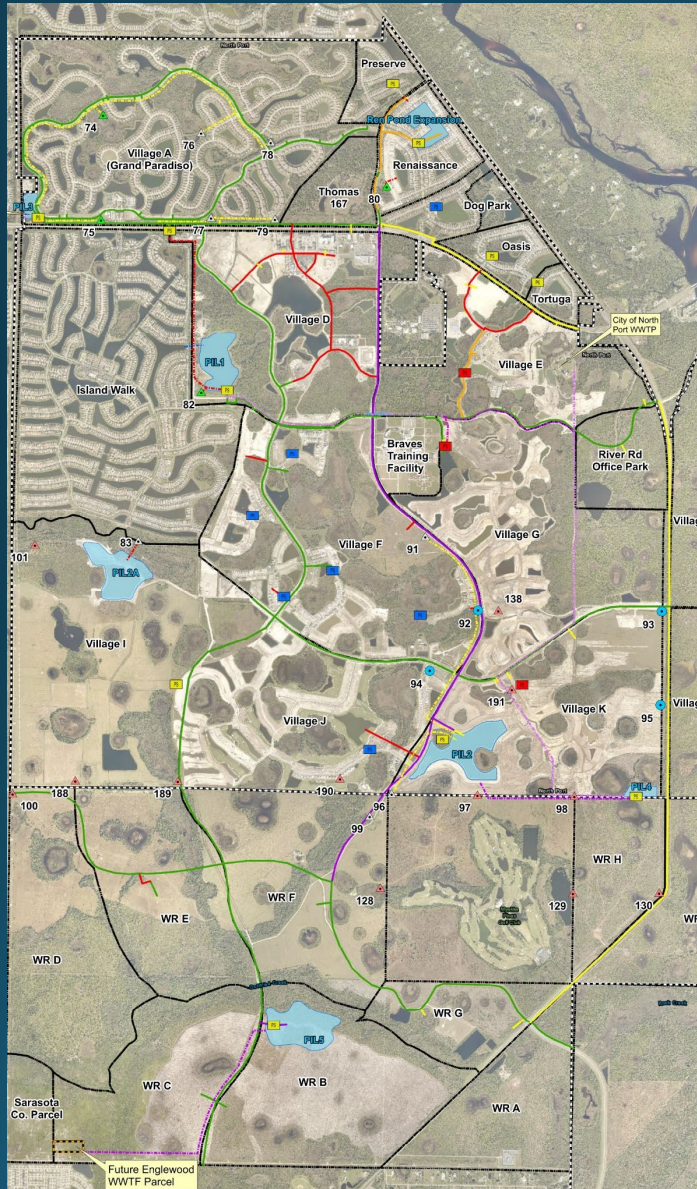
Water Conservation

- Efficient and Effective Management of the WVID Irrigation System Involves Ongoing Water Supply Master Planning and
- Daily Operations to Implement the Master Plan

WVID Existing Master Irrigation System



WVID Master Irrigation System



SUPPLY SYSTEM

- Reclaimed Water effluent from City of North Port Water Treatment Plant to Primary Irrigation Lakes (PIL1 and PIL4)
- Reclaimed Water effluents (Sarasota County and Englewood Water District¹, PIL3)
- Groundwater Well Pumps and pipelines.

DISTRIBUTION SYSTEM

- Master Pump Stations (PIL1, PIL2, PIL2A and future PIL5 Pumps)
- Master Distribution System (Irrigation Mains)
- Point of Connections (POC)

(1). WVID has received notice of termination from EWD on March 27, 2019 and date of termination will go into effect on March 27, 2024

IRRIGATION USERS

- **Direct Connection to Master Distribution System.**

The Irrigation water is delivered to end-users via a meter connected directly to the master irrigation system. (Examples: Commercial properties: Publix, Grand Living).

- **Irrigation Lakes with Private Irrigation Pumps**

This Irrigation water is delivered to Irrigation Lakes via a POC (Point of Connection). End-users utilize private irrigation pumps to distribute irrigation water (examples: Gran Place, Avelina). Some users share the pumps stations (examples: Lakespur & Everly).

- **Irrigation Lakes with WVID Irrigation Pumps**

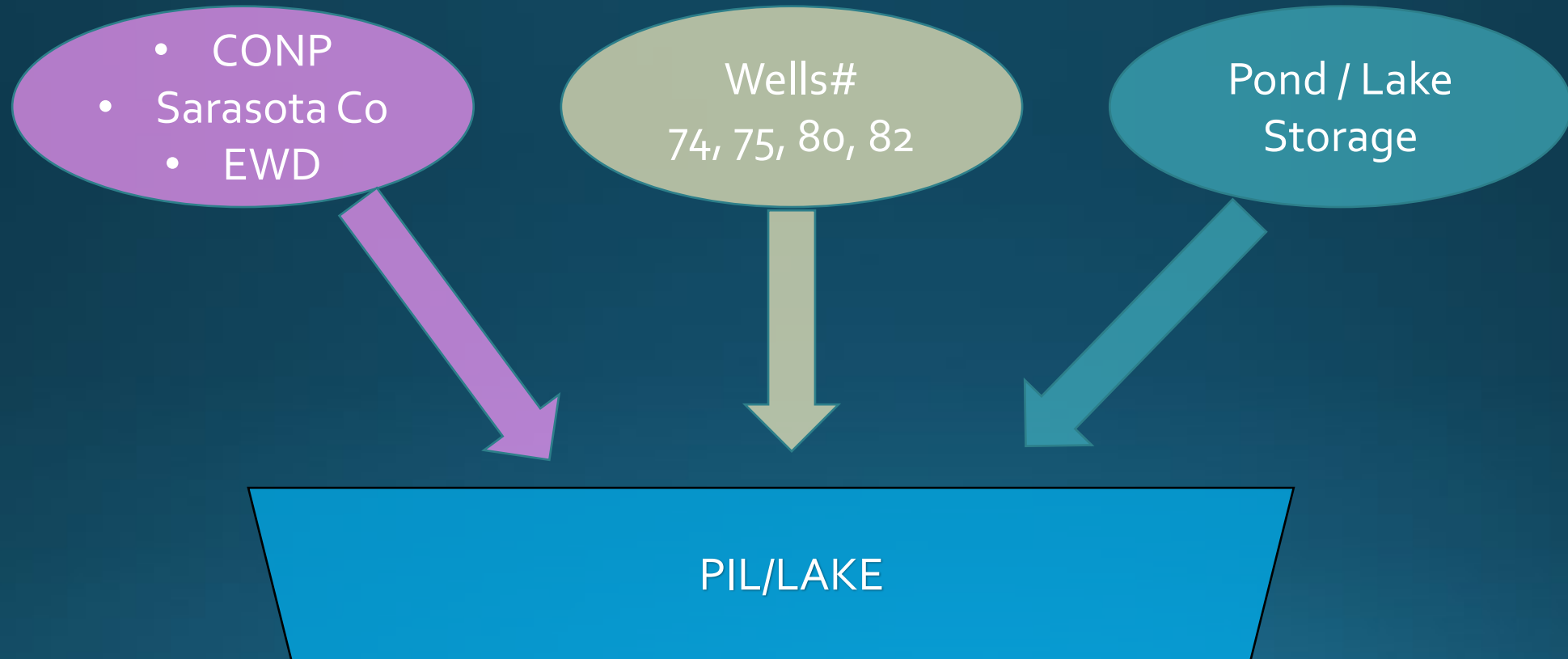
The Irrigation water and groundwater that is delivered to the Irrigation Lakes (examples: Gran Paradiso, Renaissance, Tortuga, Oasis & Preserve). WVID uses secondary pumps to distribute this irrigation water.

Irrigation Water Supply



Irrigation Water Supply

2023



Irrigation Water Supply

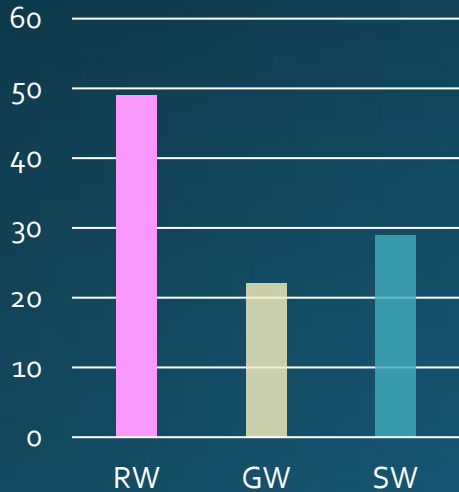
2022/2023

49.0% (2022)
35.8% (2023)

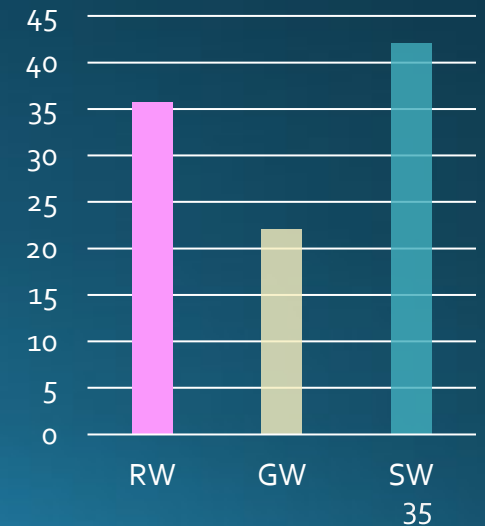
22.0% (2022)
22.1% (2023)

29.0 % (2022)
42.1% (2023)

Irrigation Supply
2022 (%)



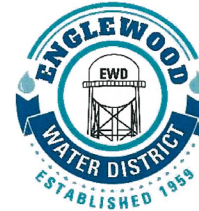
Irrigation Supply
2023 (%)



PIL/LAKE

Loss of Reclaimed Water

- March 27, 2019, Englewood Water District Notified WVID of five (5) year advance notice for termination of Reclaimed Water Agreement.



Board of Supervisors

Robert C. Stern Jr., Chair
Taylor Meals, Vice-Chair
Phyllis Wright
Sydney B. Crampton
Steven Samuels

Ray Burroughs
Administrator

Englewood Water District

201 Selma Avenue
Englewood, FL 34223-3443
Phone: 941-474-3217
Toll Free: 866-460-1080
Fax: 941-460-1025
Email: info@englewoodwater.com
Website: englewoodwater.com

March 27, 2019

Mr. Peter L. Pimentel, District Manager
West Villages Improvement District
c/o Special District Services, Inc.
2501 A Burns Road
Palm Beach Gardens, FL 33410

Dear Mr. Pimentel;

Per Section 11 (a) of the Interlocal Agreement Delivery and Use of Reclaimed Water entered into February 10, 2009, please let this letter serve as the required five (5) year advance written notice for termination. With this notification, we comply with the minimum notice period required by our agreement.

If early termination is preferred, or if you have any questions, I can be reached at 941-460-1010 or rburroughs@ewdfl.com.

Sincerely,

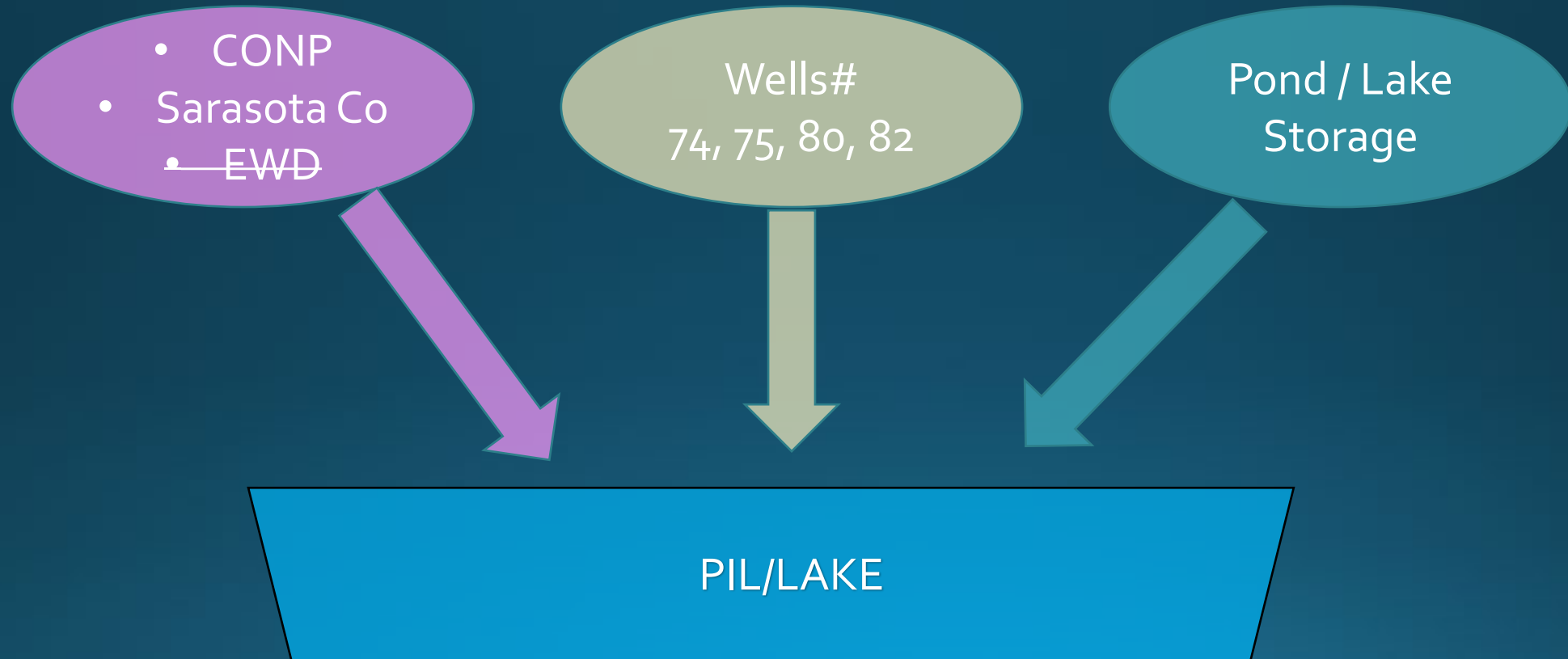
Ray Burroughs
Englewood Water District Administrator

cc: Robert H. Berntsson
Kenneth W. Edwards, Esq



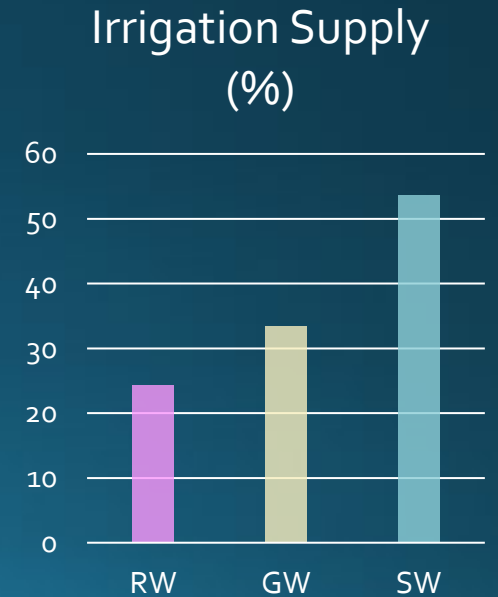
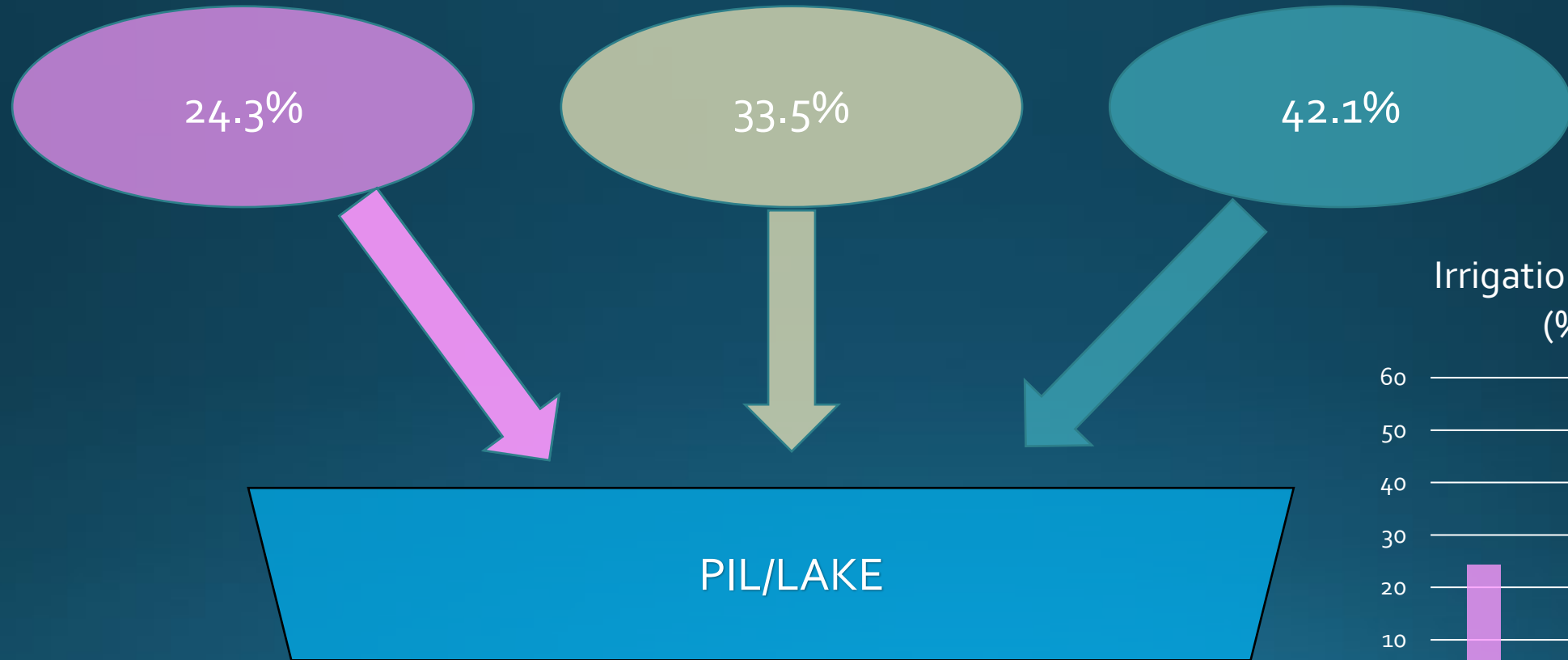
Irrigation Water Supply

2023 without EWD



Irrigation Water Supply

2023 without EWD



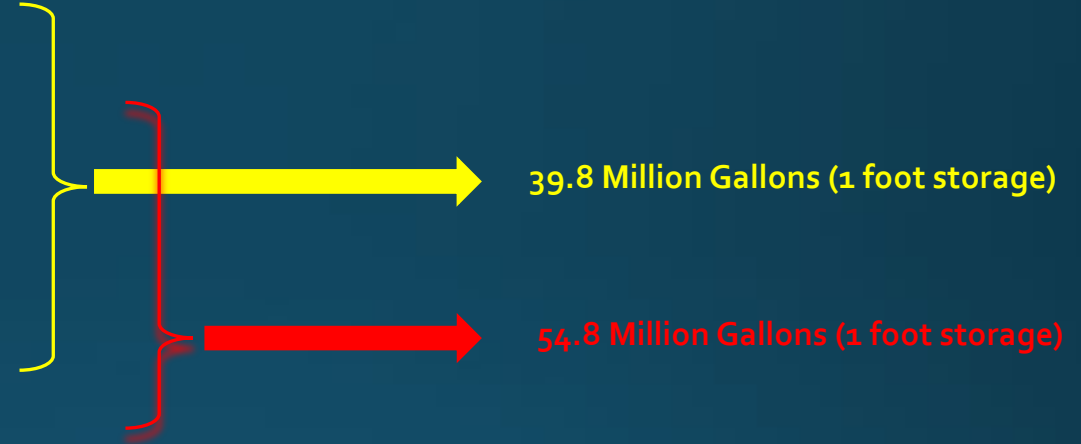
RECLAIMED WATER SUPPLY

- Englewood Water District Reclaimed Water supply will terminate on March 27, 2024.
- Sarasota County did not deliver Reclaimed Water March-August 2023
- City of North Port Supply has not reached the full capacity
- Reclaimed Water is not a reliable source

MAXIMIZE STORMWATER STORAGE

- Large Primary Irrigation (PIL) Lakes

- PIL₁ 32 ac
- PIL₂ 42 ac
- PIL_{2A} 38 ac
- PIL₃ 4.3 ac
- PIL₄⁽¹⁾ 5.9 ac
- PIL₅⁽²⁾ 46 ac



- Coordinate with developers to have a connected stormwater ponds system to maximize the storage capacity.

Village K - 43 ac
Village I - 148 ac



(1) Reclaimed Water Storage Pond
(2) Future Reclaimed Water Storage Pond

STORMWATER CAPTURE FOR OPERATION FLEXIBILITY

Since 2019 the WVID has developed and built a dynamic system that captures and transfers stormwater to and from each PILs

- The system have the ability to transfer water to each PIL other stormwater ponds.
- Public Safety Harvest Pump: Captures stormwater water from Islandwalk outfall and transfers it to PIL1 before it flows to the Myakka River.
- Islandwalk Gravity Outfall Structure: additional outfall to PIL1 to captures stormwater before it flows to the Myakka River.
- Interconnections to other District owned stormwater ponds to increase storage.

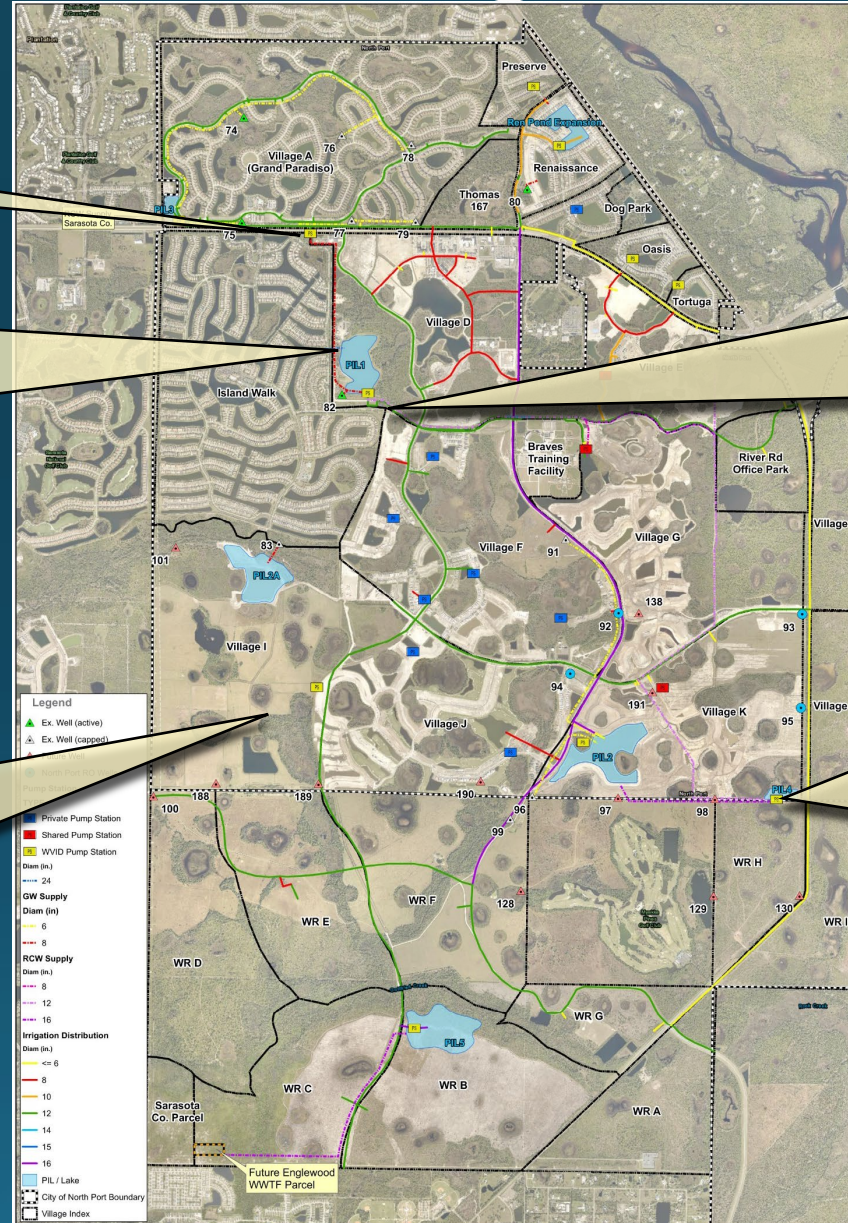
WVID Master Irrigation System

Public Safety
Harvest Pump

Islandwalk Outfall



Village I Pump



PIL1 POC



PIL4 Pump



GROUNDWATER SYSTEM

- All wells are pumped into PILs / Lakes.
- Groundwater is mixed with Reclaimed and Stormwater
- WVID staff test water quality daily.

INCREASE OF GROUNDWATER WITHDRAWAL

- Well #83 is planned to be brought into production in the second quarter 2024
- Well #96 and #191 are being evaluated and planned to be brought into production in the fourth quarter 2024.

MONITORING

- **WVID staff continuously monitors all PILs pond levels and RW Delivery**
 - Remotely monitor with Flowguard software
 - Daily Inspection of the PILs
 - Transfer Water to specific PILs if necessary
- **WVID staff continuously monitors Customer Water Usage**
 - Remotely monitor Irrigation Water Usage
 - Notify Customer when usage exceeds Allocations
- **WVID staff manages Irrigation contractor to make sure pipe breakages are timely fixed.**

PLANNING.....

- WVID Staff is evaluating with the City of North Port the possibility to divert some of the City Reclaimed Water from the Legacy Wastewater Treatment Plant
- WVID Staff is evaluating the use of the SmartPond Technology to increase storage volume in some ponds.
- Continue to promote Conservation

Questions?