



WINTER HAVEN

The Chain of Lakes City

2023 Watershed Summit



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June 2023



Chamber of Commerce - Future by Design
Community Vision (2000):
"Water benefits all aspects of our *Economy,*
Culture and Environment"



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Winter Haven is situated at the headwaters of the Peace River, in the Peace Creek watershed



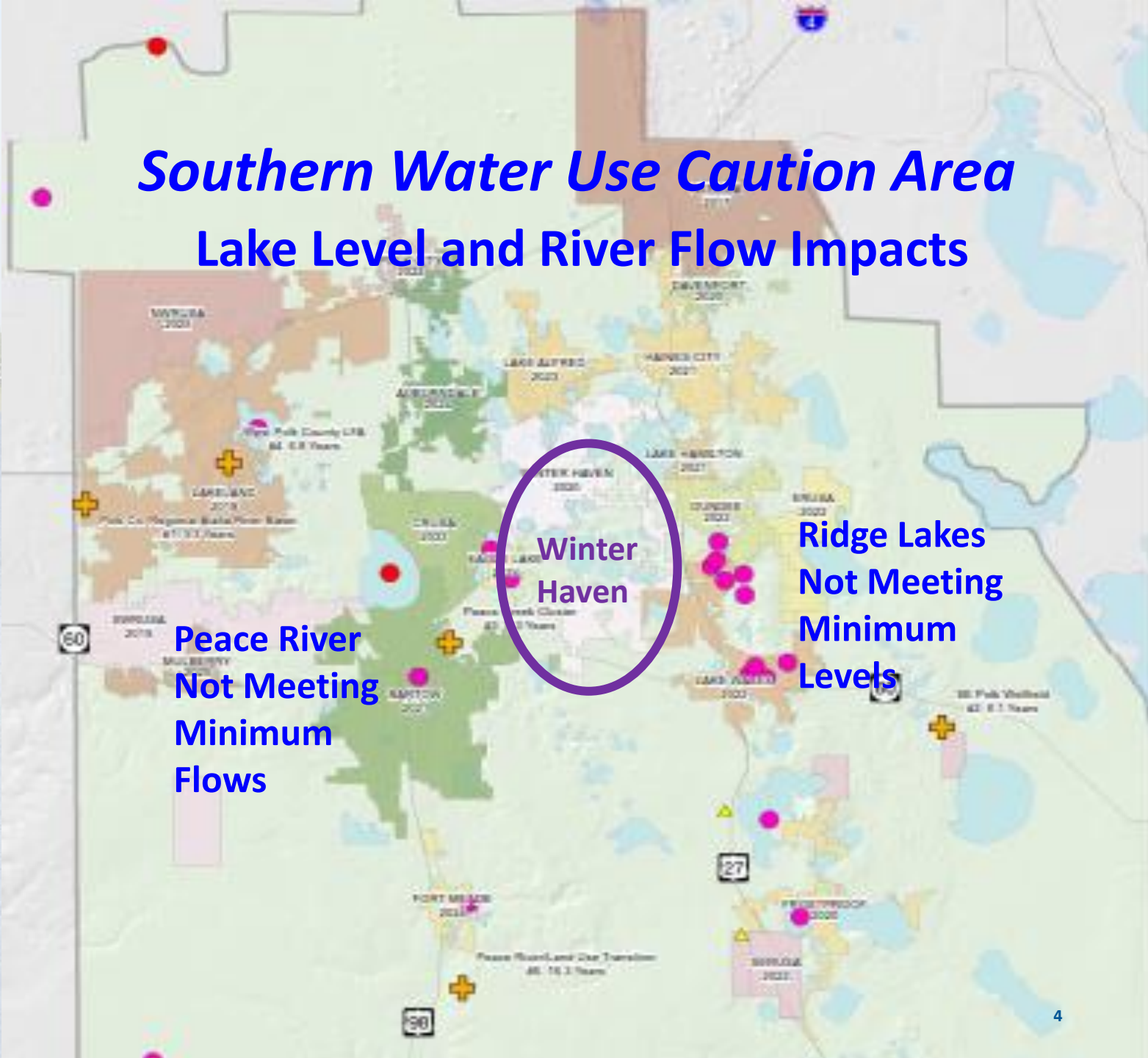
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Hydrologic Impairments



Southern Water Use Caution Area Lake Level and River Flow Impacts



Winter Haven

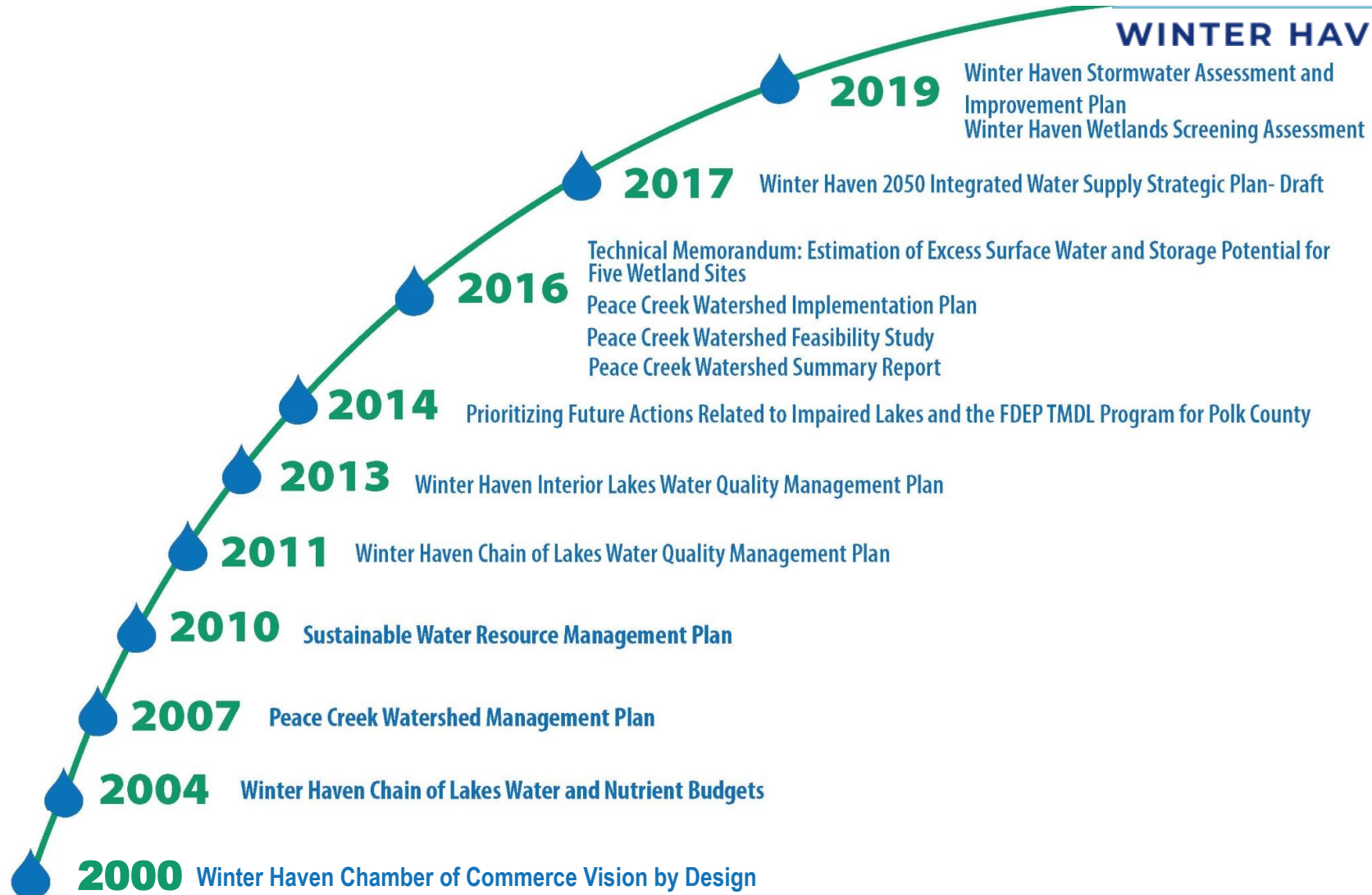
Peace River
Not Meeting
Minimum
Flows

Ridge Lakes
Not Meeting
Minimum
Levels

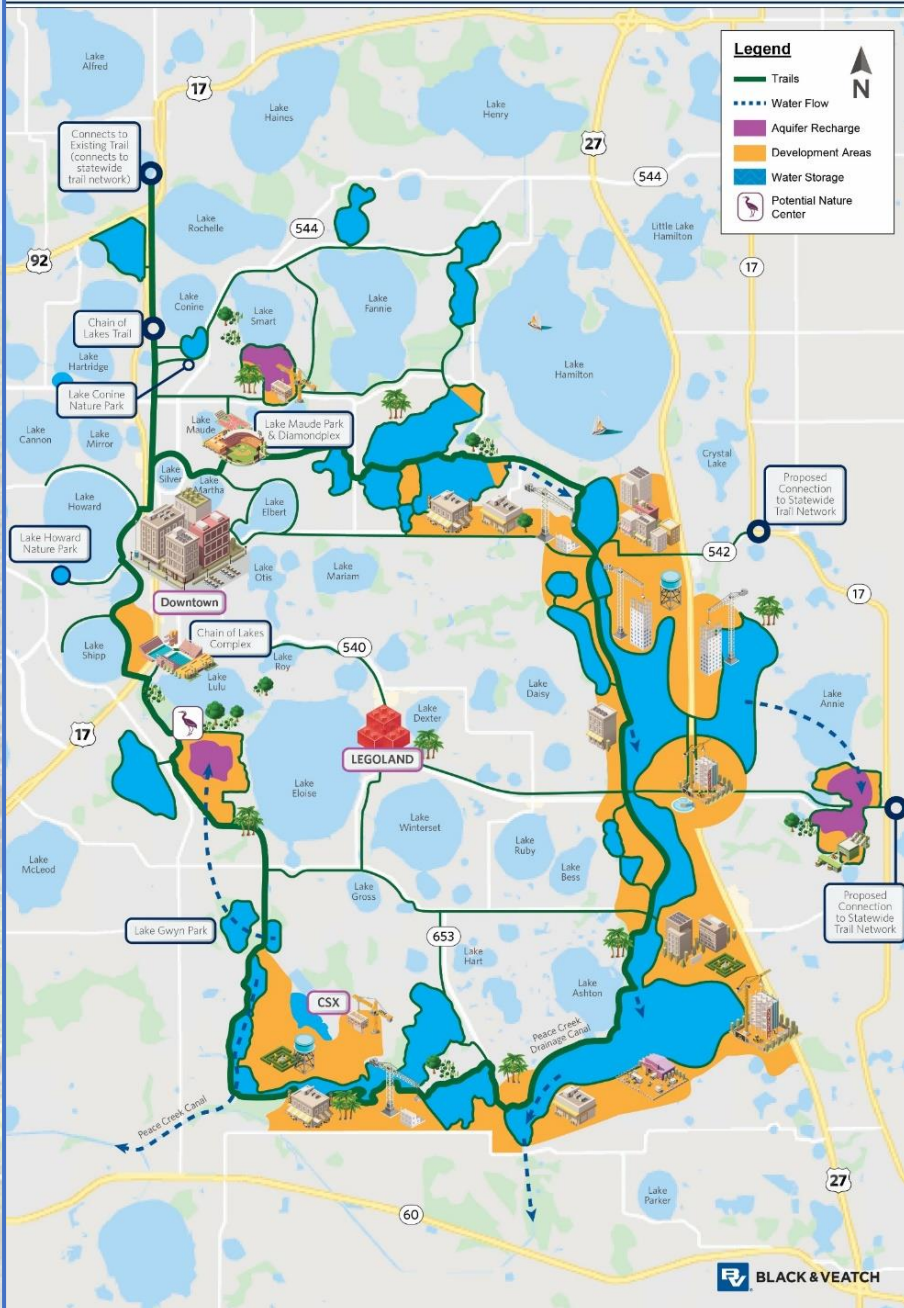
One Water Plan Timeline/History:



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Anticipated Outcomes & Benefits



- *5,000 Acres of restored wetland nature parks*
- *30-miles multi-modal trail system*
- *Improved Flood Control*
- *Improved Water Quality*
- *5 MGD of direct potable reuse*
- *Approx. 70 Billion gallons of new water storage*
- *Long term savings/increased cost-benefit*
- *Balancing the Water Budget*

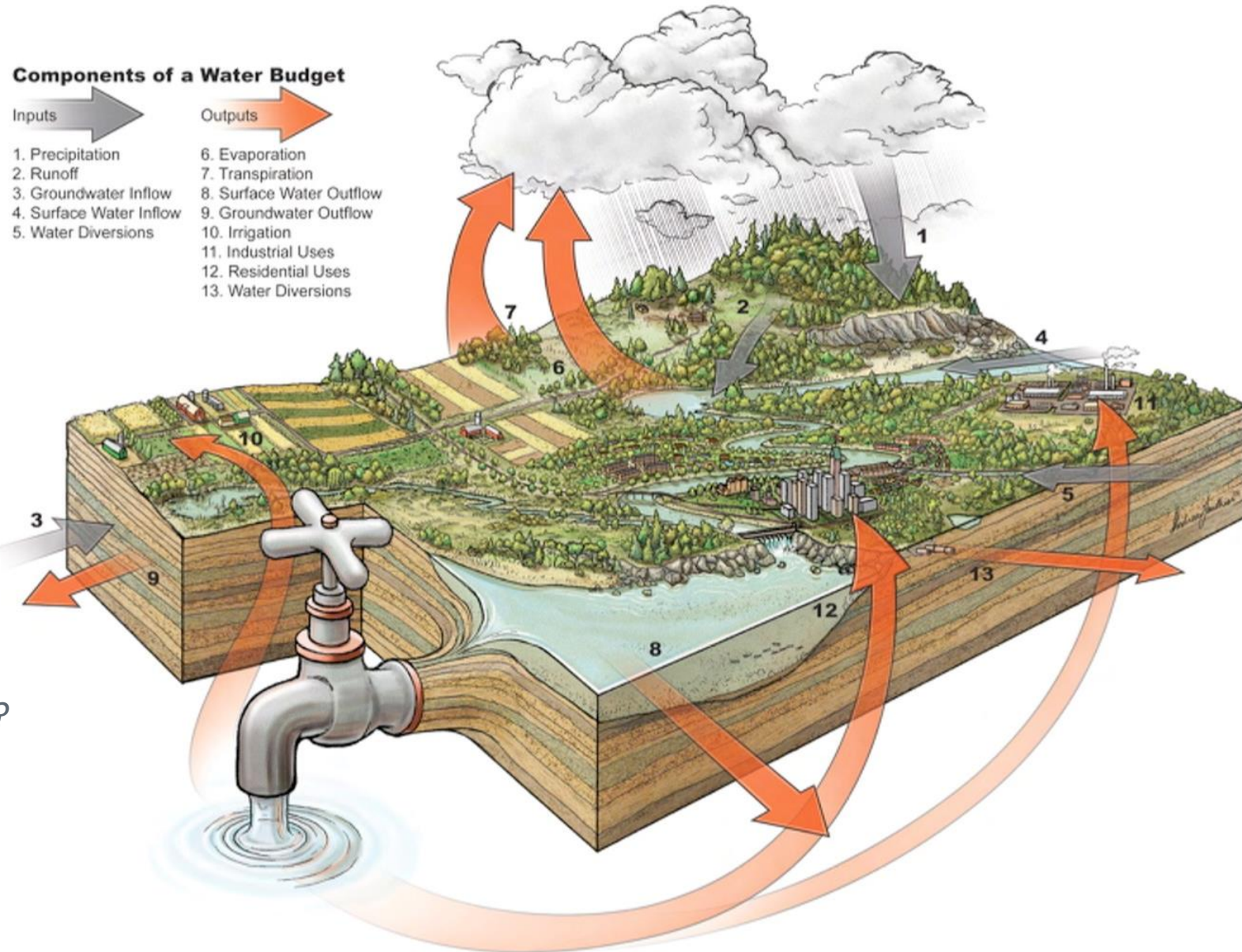
It all Starts with WATER

Water Budget = The relationship between the inflow and outflow of water through a specified region.

- How much do you have?
- How much does it cost?
- What is the quality of the Resource?
- What choices does Winter Haven have to meet current and future needs?
- How shall Winter Haven invest its economic resources for the next 50 years?
- What will be the Value Proposition?

Components of a Water Budget

Inputs	Outputs
1. Precipitation	6. Evaporation
2. Runoff	7. Transpiration
3. Groundwater Inflow	8. Surface Water Outflow
4. Surface Water Inflow	9. Groundwater Outflow
5. Water Diversions	10. Irrigation
	11. Industrial Uses
	12. Residential Uses
	13. Water Diversions

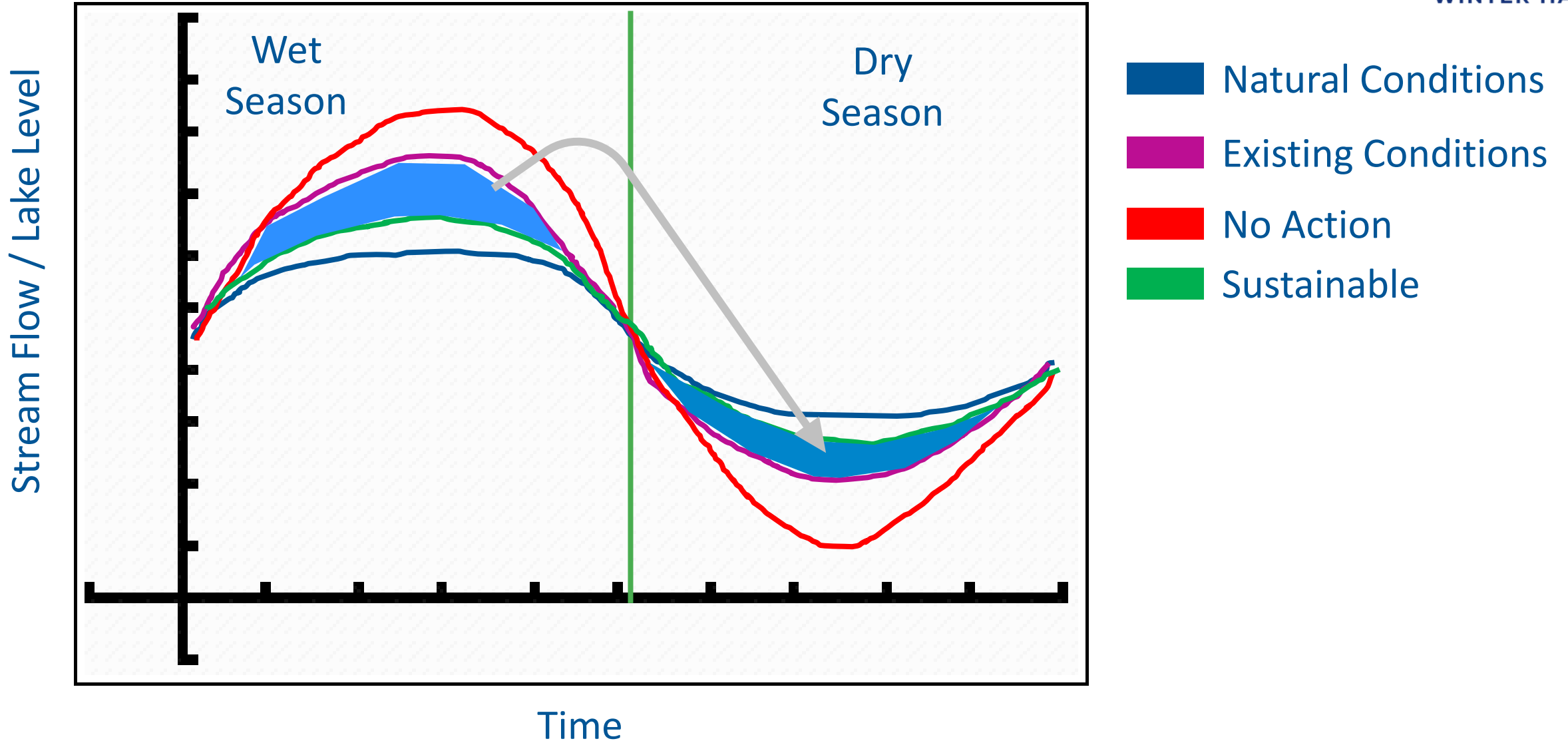


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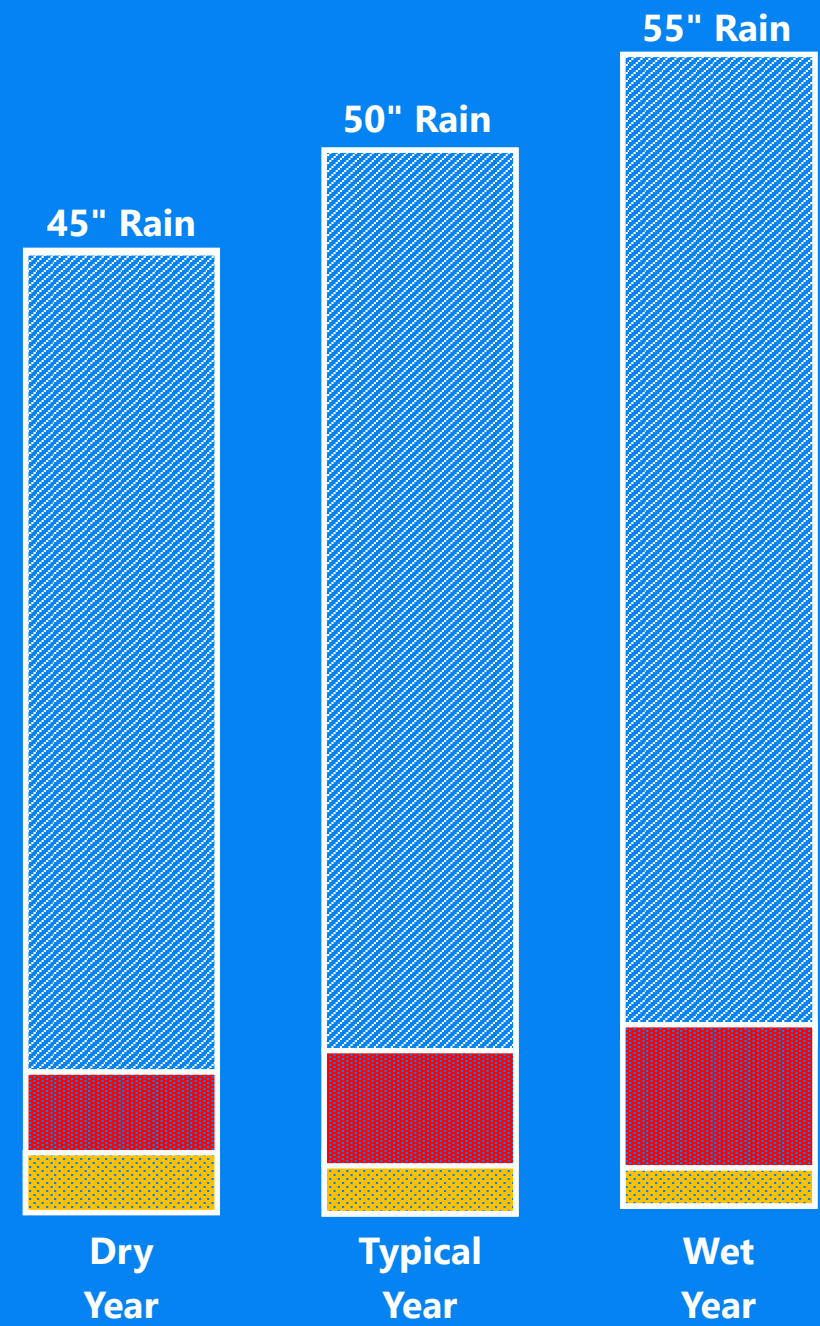
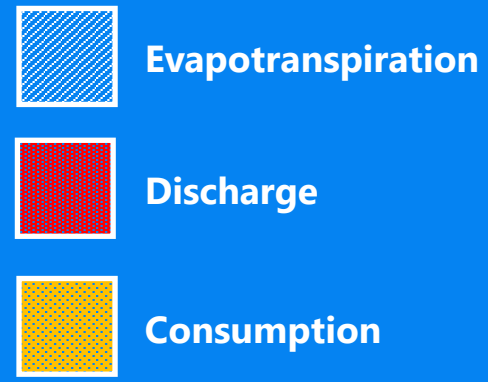
Sustainable Water Budget Streamflow Concept



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50 inches of rainfall in a typical year, but only a small amount is accessible.

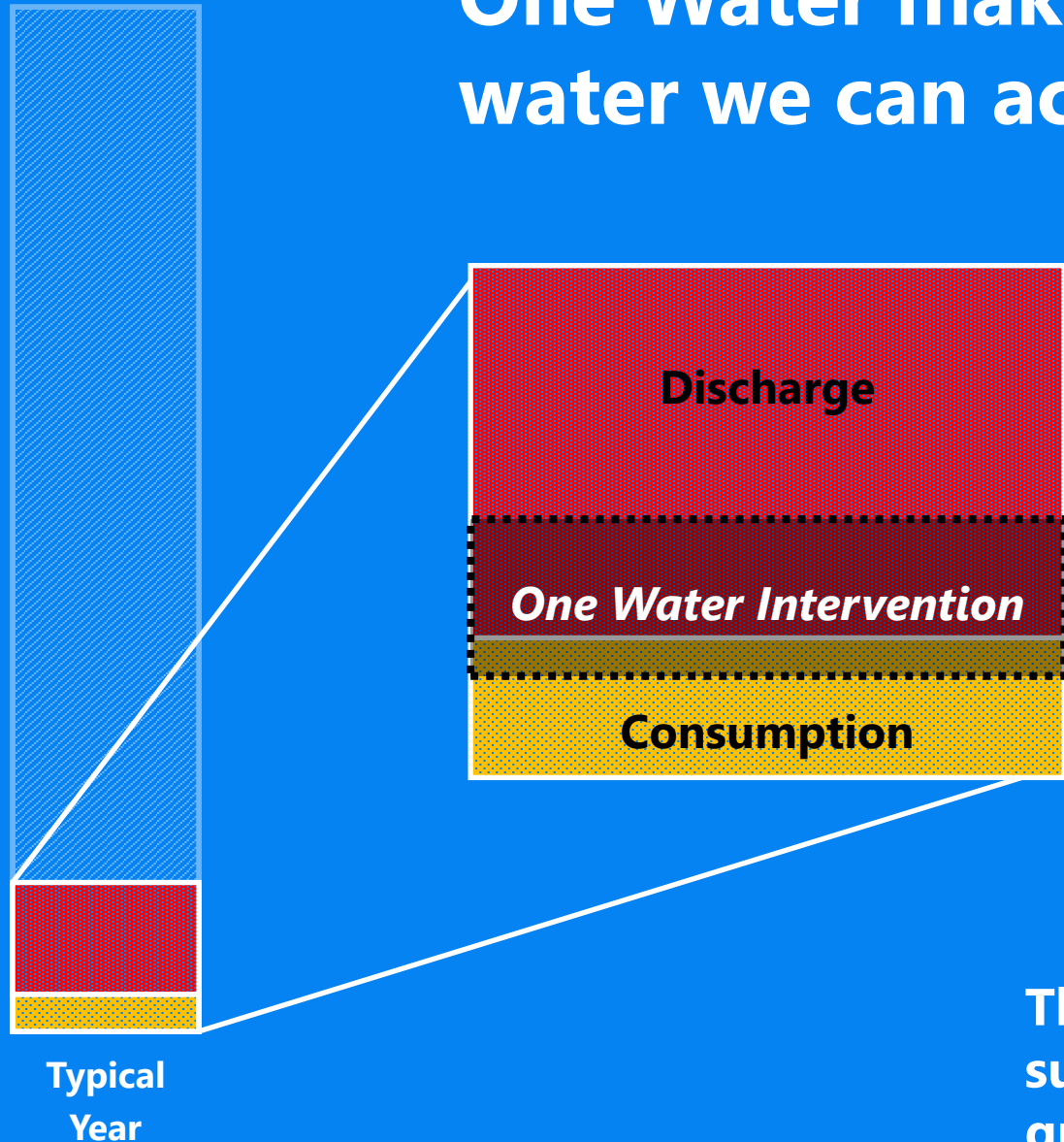


~80% lost to Evapotranspiration, some ability to reduce based on tree canopy cover

What we can access

Consumption may increase in dry years and decrease slightly in wet years based on irrigation use

One Water makes use of the water we can access each year.



- Optimize gray cover
- Maximize green/blue cover
- Reuse/reclaim/recharge water

Capture Excess Discharge

Optimize Consumption

- Smart pricing
- Water efficient technology

The One Water Intervention can achieve a sustainable balance to support capacity for future growth needs while enhancing quality of life.

One Water Master Plan



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One Water – A 50 Year Adaptive Plan



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Restore

Restoring lakes and wetlands that provide natural water storage

Recharge

Replenishing the natural aquifers using nature-based solutions



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One Water – A 50 Year Adaptive Plan

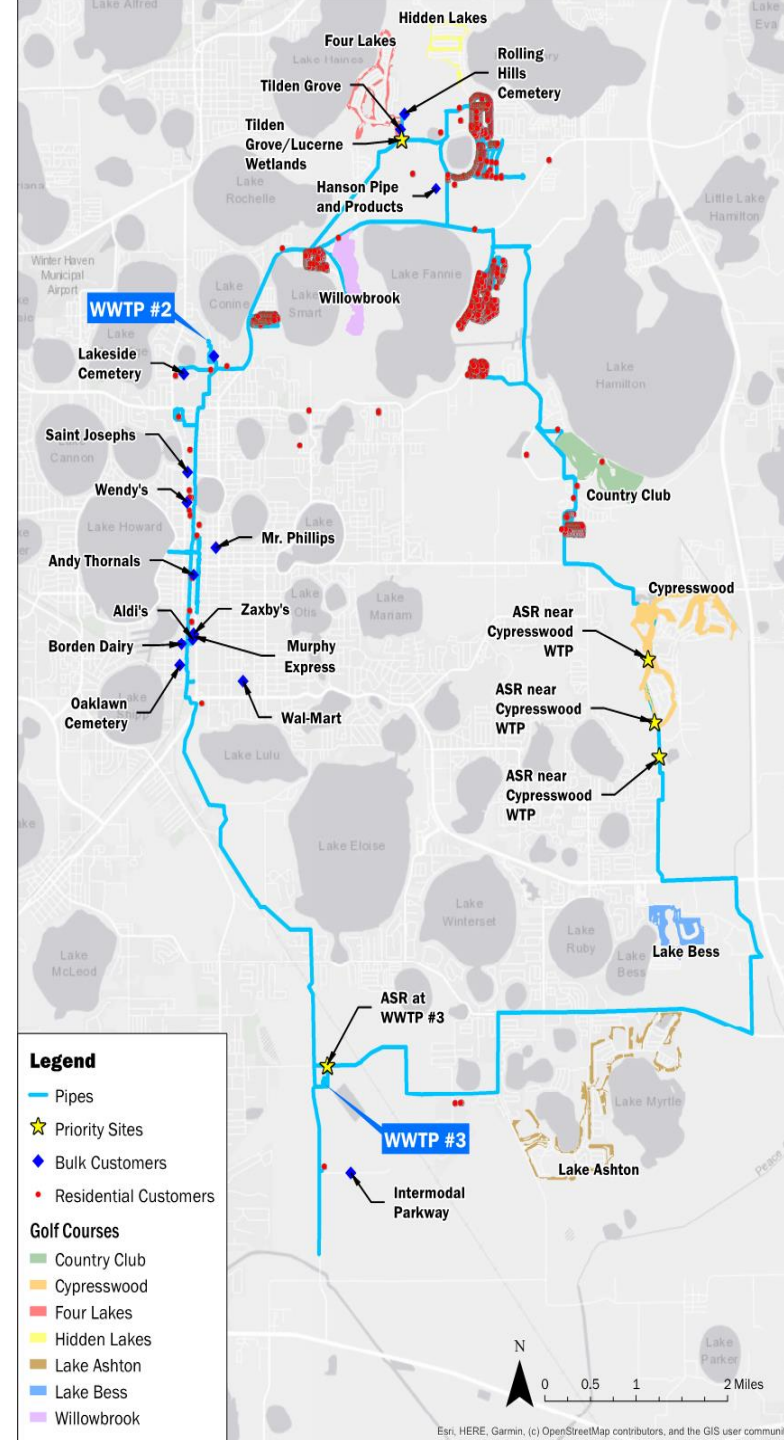
Reclaim

Modernizing reclaim and wastewater treatment technology

Reuse

Increasing the life cycle of water as a renewable resource in Winter Haven

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The amount of water we capture depends on the balance between

GREEN + BLUE

and

GRAY

land cover



filters, stores, and distributes water resources efficiently and cheaply.



supports community life but prevents aquifer recharge and induces runoff

WINTER HAVEN'S WATER DYNAMICS



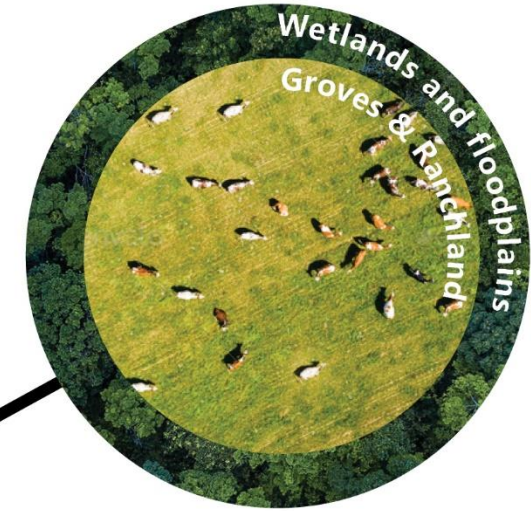
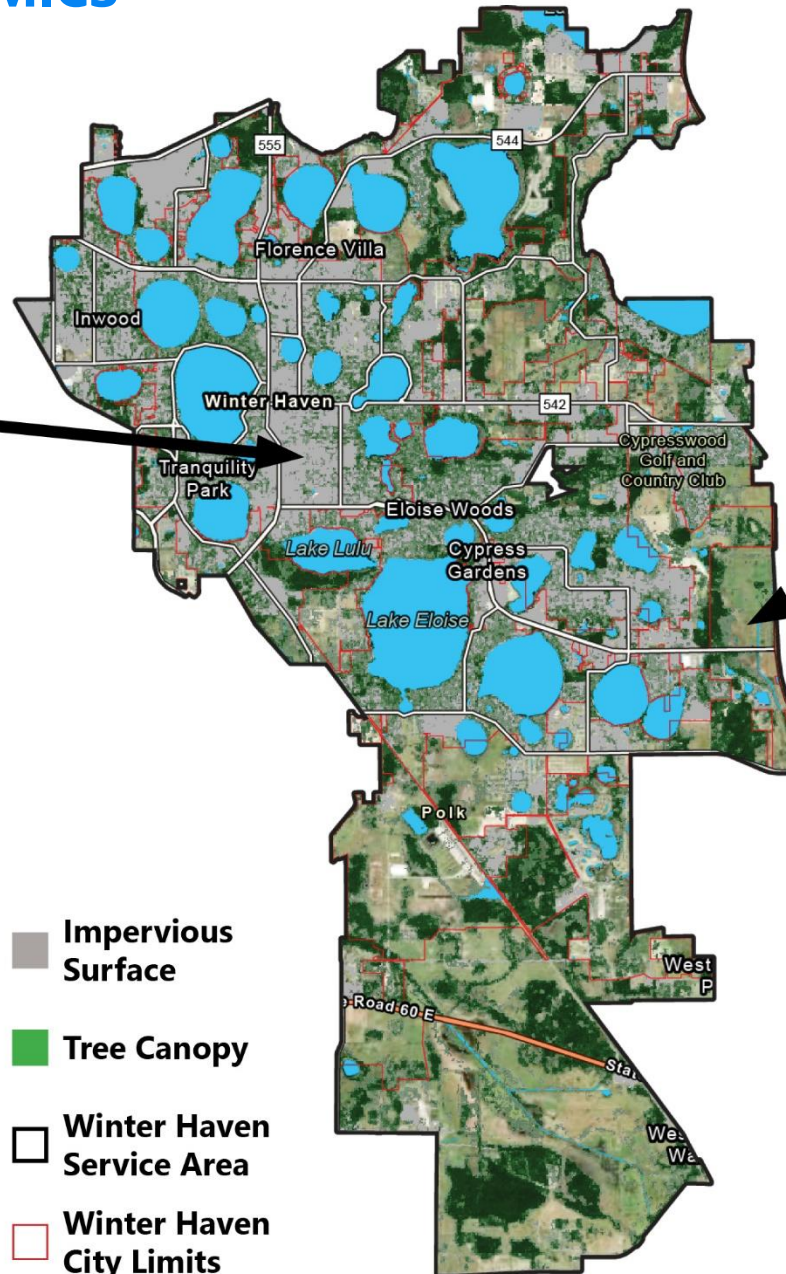
BUILT AREAS

40-90% Impervious

15-20% Tree Canopy

Winter Haven's built areas have gray cover which prevents water from recharging the aquifer and increases the speed in which water moves out of our local system.

-  **Impervious Surface**
-  **Tree Canopy**
-  **Winter Haven Service Area**
-  **Winter Haven City Limits**



UNBUILT AREAS

<1% Impervious

30-35% Tree Canopy

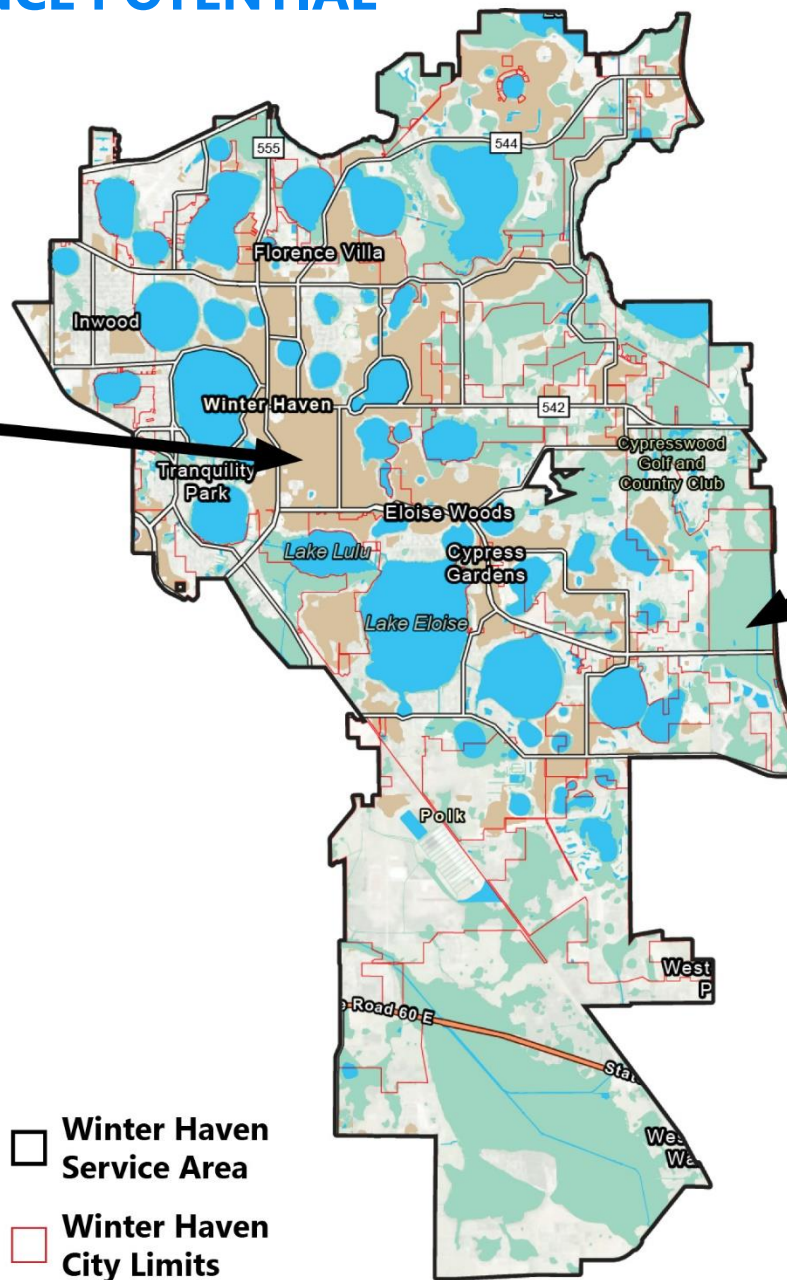
Unbuilt areas have low gray cover, but years of agricultural use and the channelization of water has degraded the quality of floodplains and wetlands.

WINTER HAVEN'S WATER BALANCE POTENTIAL



HIGH RECHARGE POTENTIAL

Soils and elevations in north and central Winter Haven allow for water to quickly recharge the aquifer.



HIGH STORAGE POTENTIAL

The wetlands and floodplains in east and south Winter Haven allow for water to store and slowly seep into the aquifer.

- Winter Haven Service Area
- Winter Haven City Limits

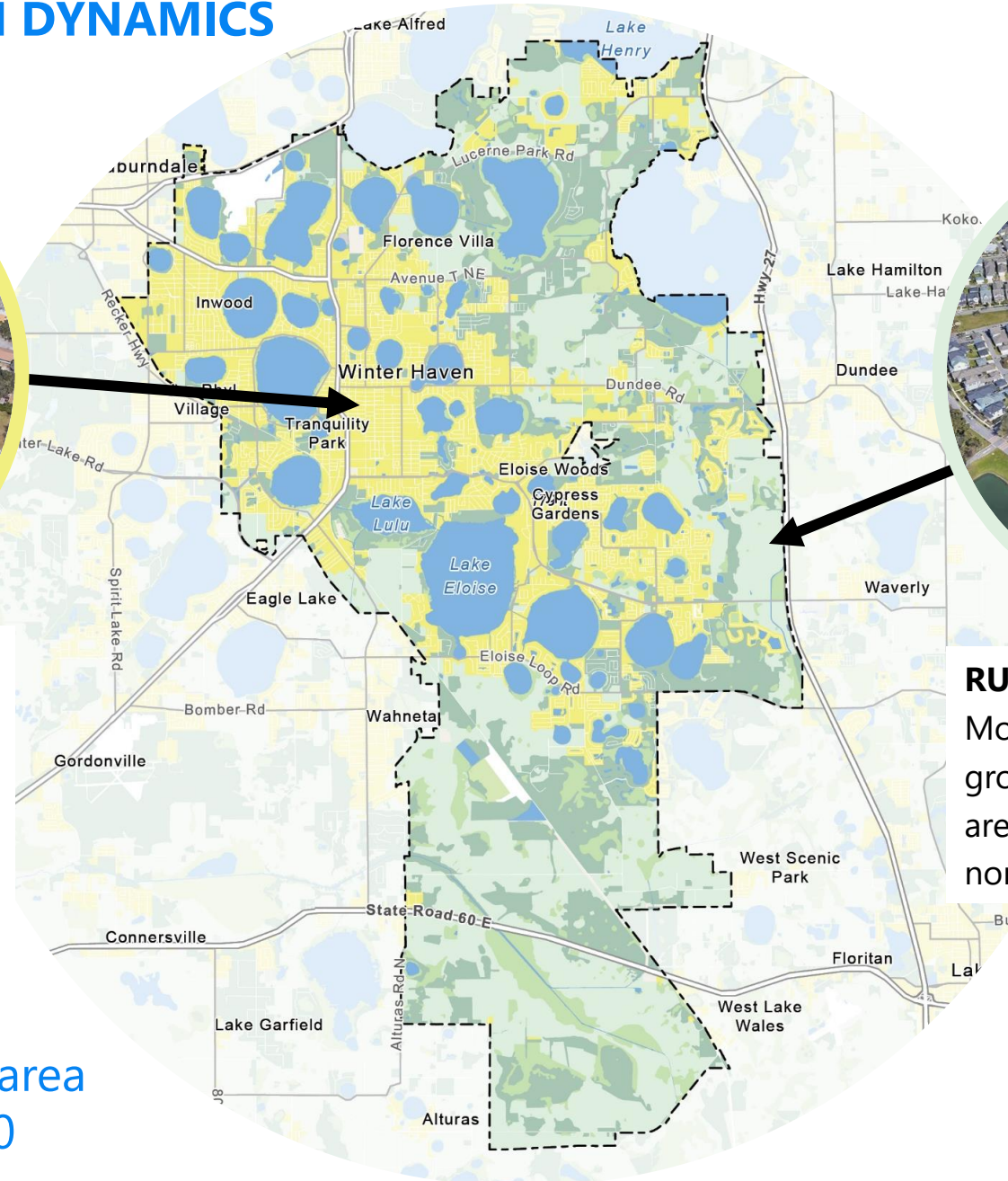
WINTER HAVEN'S GROWTH DYNAMICS



URBAN AREAS

Some of the growth will happen in already built-out areas such as the downtown and surrounding neighborhoods.

Winter Haven's utility service area will grow by more than 75,000 people over the next 50 years.

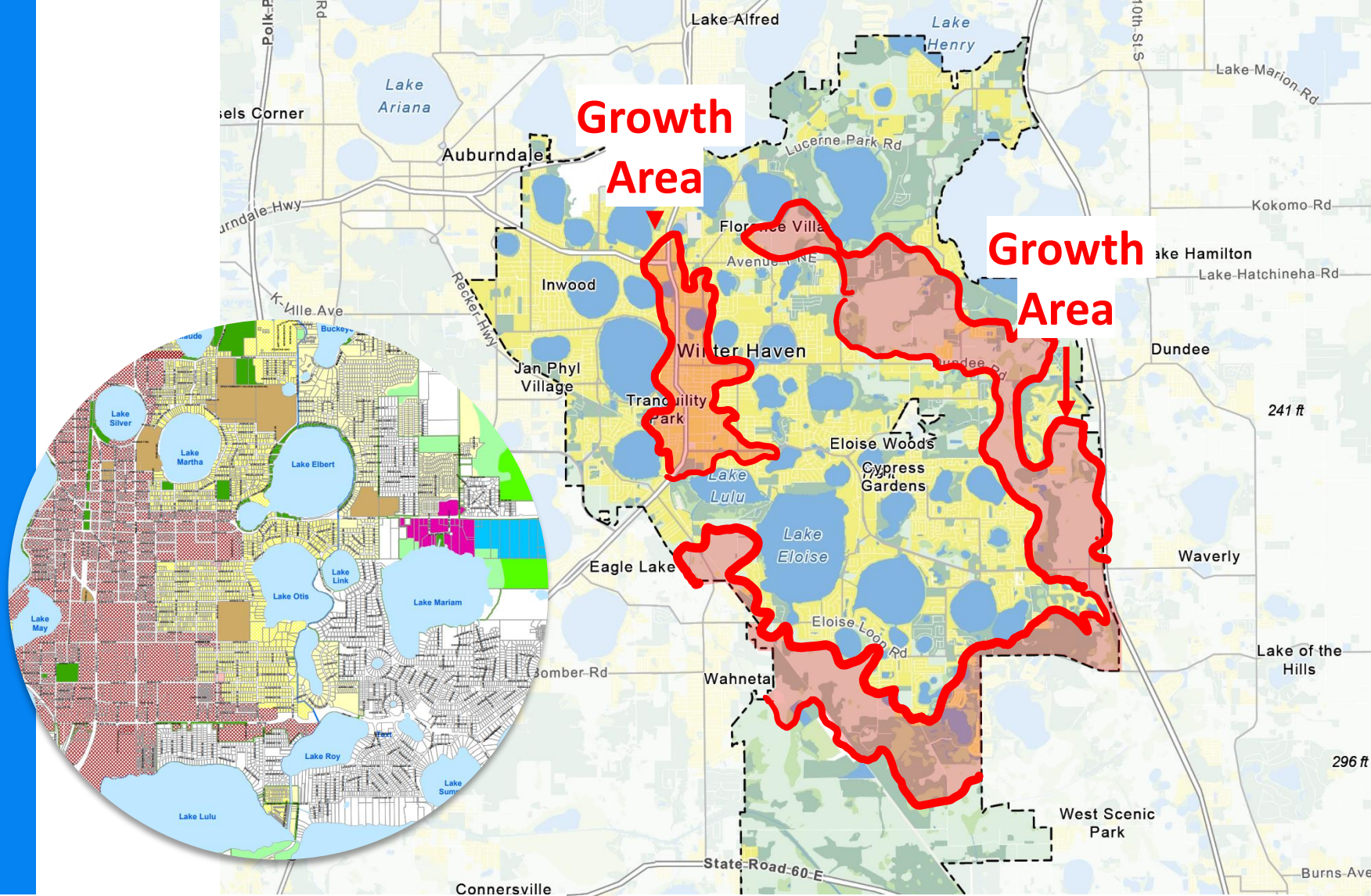


RURAL AREAS

Most of Winter Haven's growth will happen in rural areas along US 27 and north of SR 60.

Simplified Future Land Use (FLU)

Revise FLU to designate areas for growth and conservation, rather than use and intensity.



Much of today's FLU designated for single-use development

Future FLU designates for growth and conservation, rather than use

Our recommendations:

Partner with development to build...

Primary Conservation Network

Conservation strategy to capitalize on new growth opportunities while preserving and restore Winter Haven's natural hydrologic functions.

One Water Development Code

Revision of Winter Haven's Comprehensive Plan and Land Development Code to encourage compact, efficient land development.

Sapphire Necklace Trail

A trail system that connects and activates people with Winter Haven's water-centric resources and community.

Open Discussion/Questions



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