



**WINTER HAVEN**  
*The Chain of Lakes City*

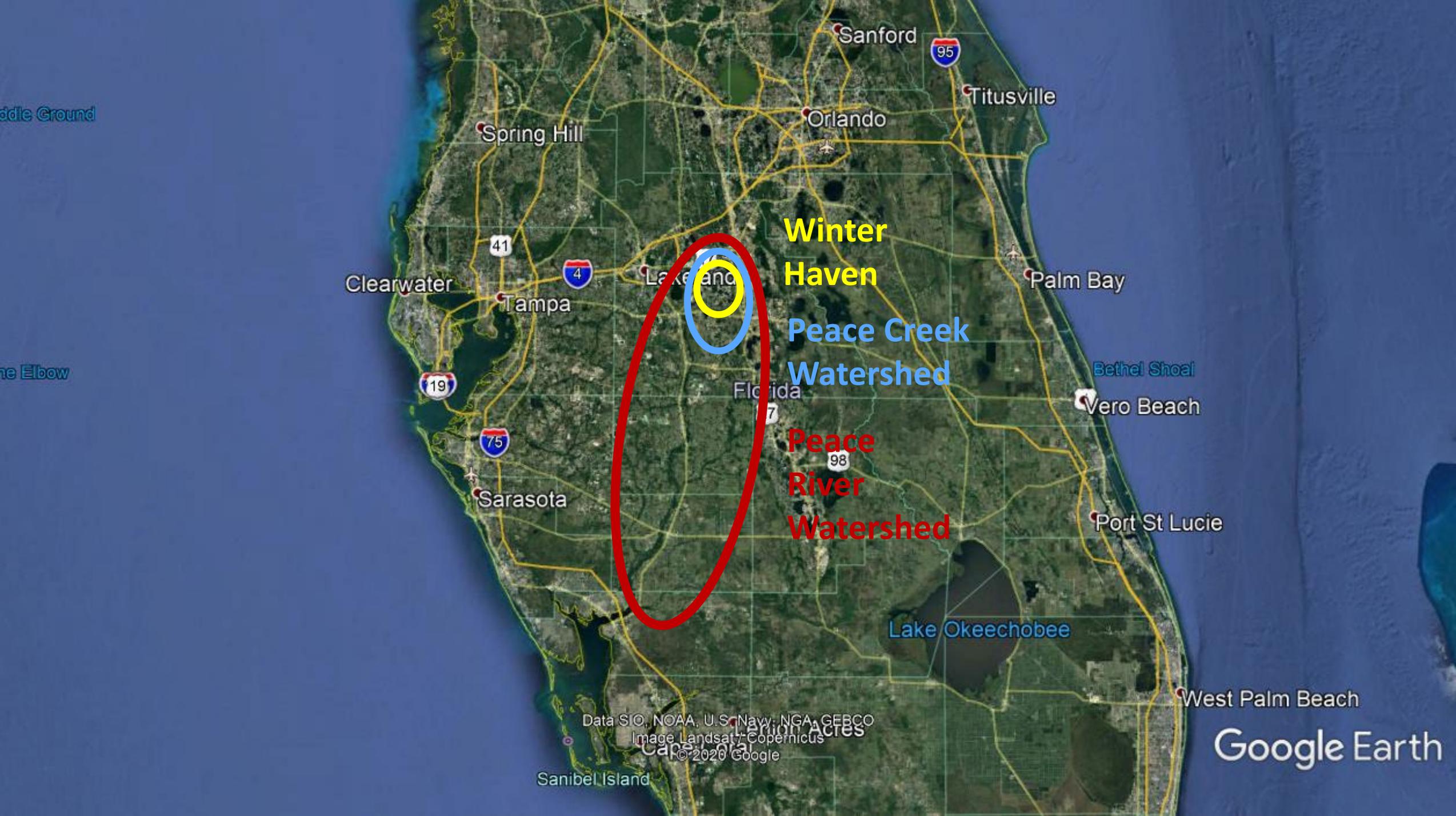
Integrated/One Water  
Master Plan

25 February 2019

University of Florida Water Institute Symposium

BUILDING A WORLD OF DIFFERENCE®





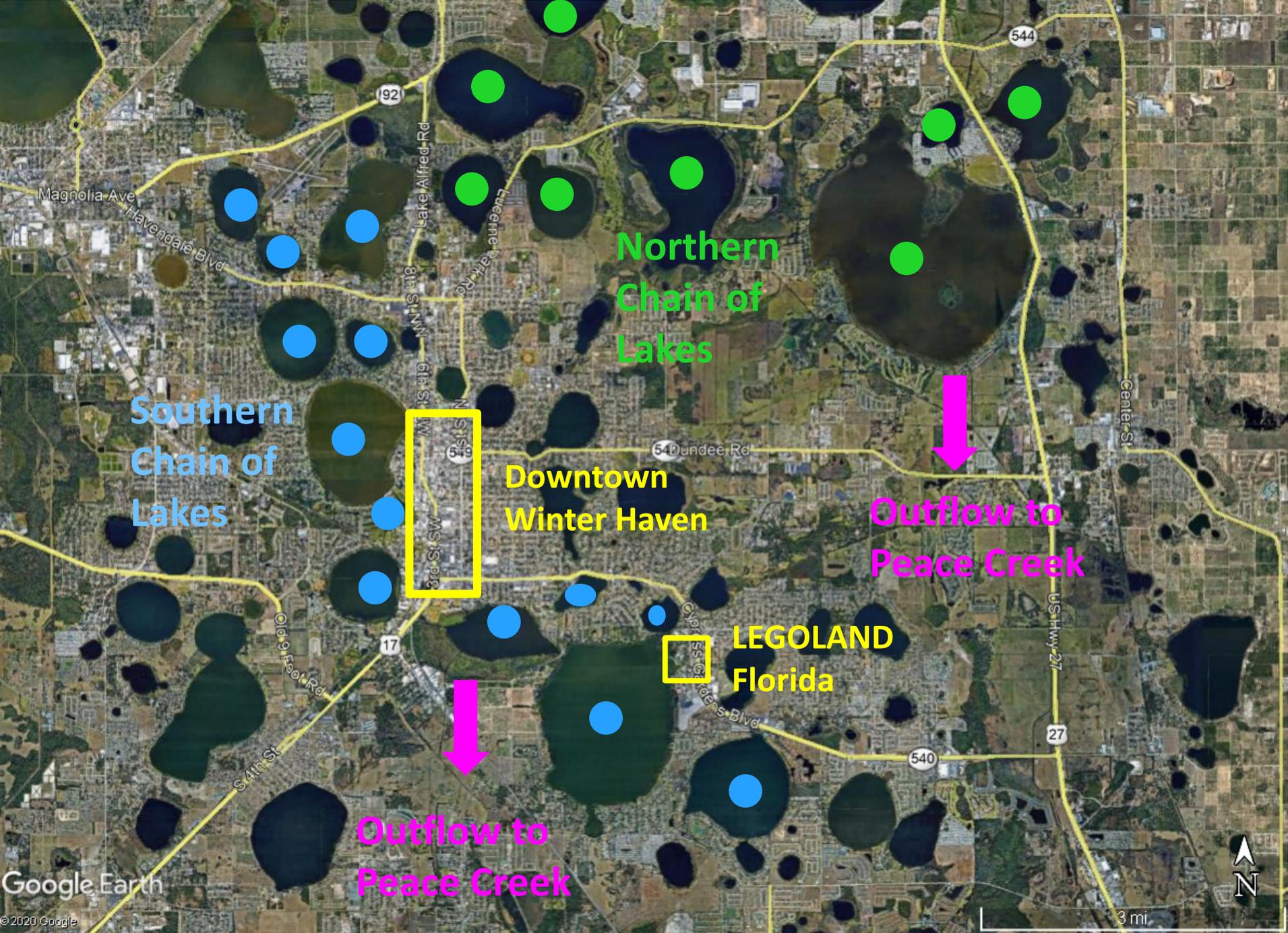
**Winter  
Haven**

**Peace Creek  
Watershed**

**Peace  
River  
Watershed**

Google Earth

Data SIO, NOAA, U.S. Navy, NGA, GEBCO  
Image Landsat/Copernicus  
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**Southern Chain of Lakes**

**Northern Chain of Lakes**

**Downtown Winter Haven**

**LEGOLAND Florida**

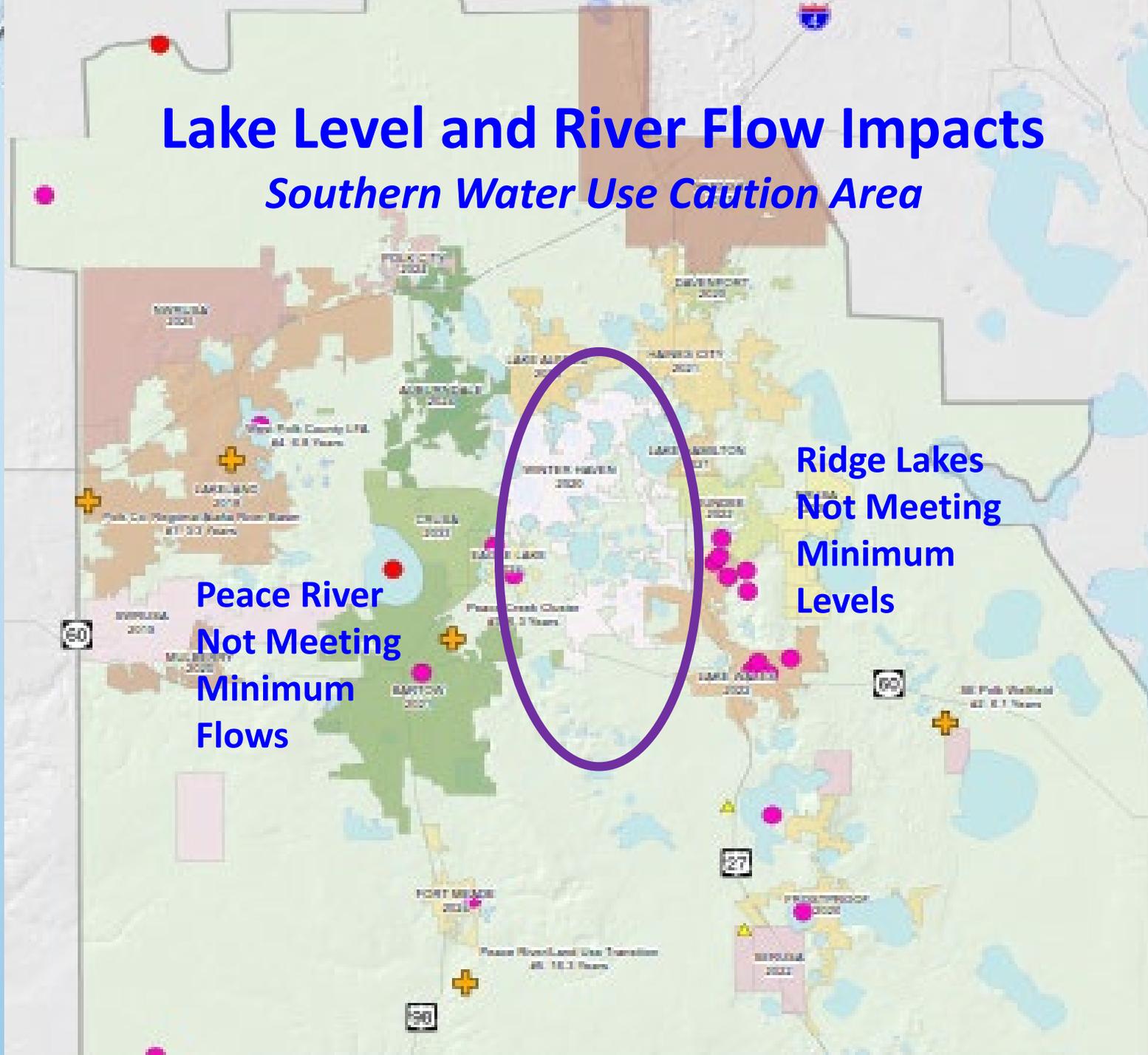
**Outflow to Peace Creek**

**Outflow to Peace Creek**



# Lake Level and River Flow Impacts

## *Southern Water Use Caution Area*



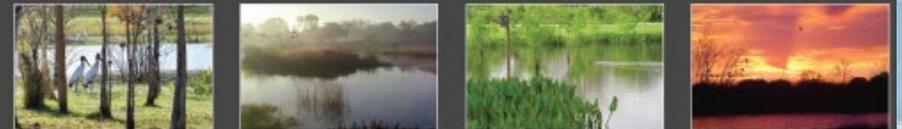
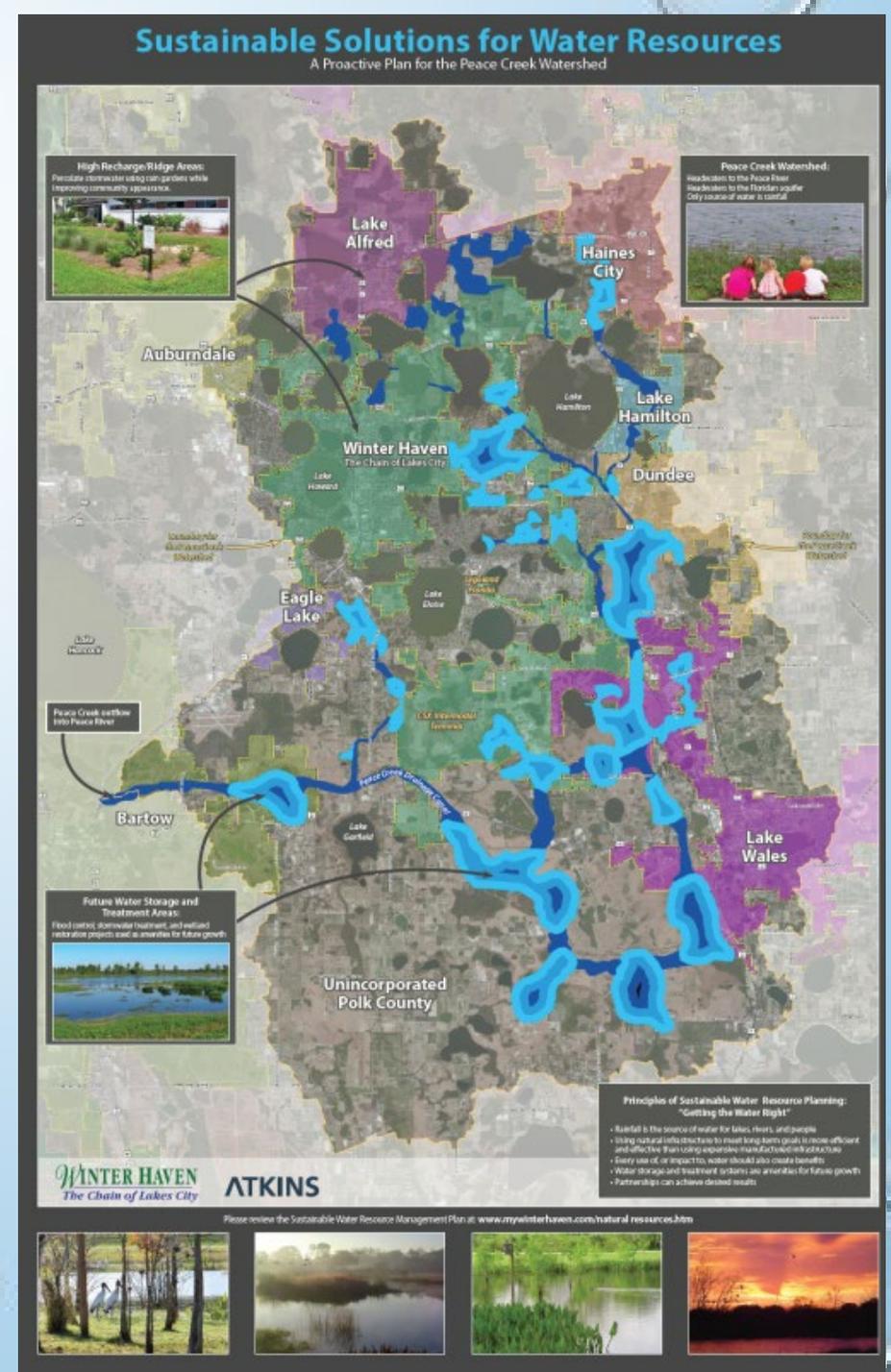


**Future by Design Community Vision (2000):**  
***“Water benefits all aspects of our Economy,  
Culture and Environment”***



# December, 2010 Winter Haven's Sustainable Water Resource Management Plan

- Adopted by City Commission
- “Under the Current Approach, Water is not Sustainable”
- Store More Water in Headwaters
- Restore Natural Wetland Storage
- Multiple Benefit/Natural Infrastructure Approach



# Winter Haven One Water Master Plan



# What is One Water?



In Winter Haven: “a *collaborative and innovative water management approach to enhance **sustainability** of our essential resources and overall **quality of life** resulting in multiple local and regional **benefits.**”*”



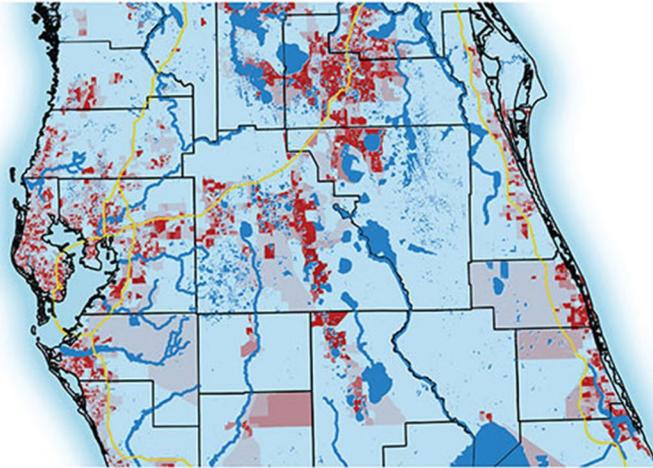
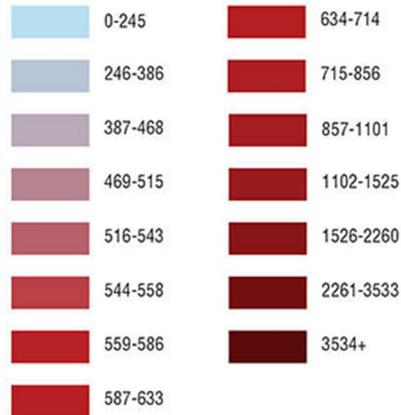
# Essential Elements

- **Public engagement - Communications/Stakeholder Plans**
- **Water Conservation Plan**
- **Water, Wastewater, and Reuse Master Plans**
- **Master Planning for stormwater and restoration**
- **Hydrologic Model**
- **Cost/Benefit Analysis of Nature-Based Solutions**
- **Future Land Use Planning**
- **Funding Strategies and Support**

# Comprehensive Approach

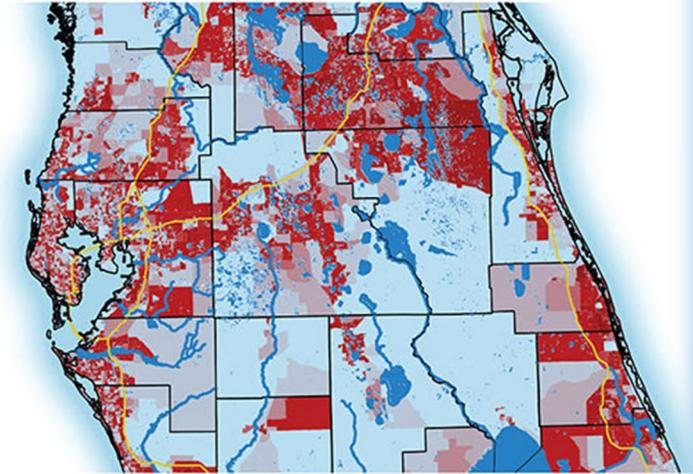
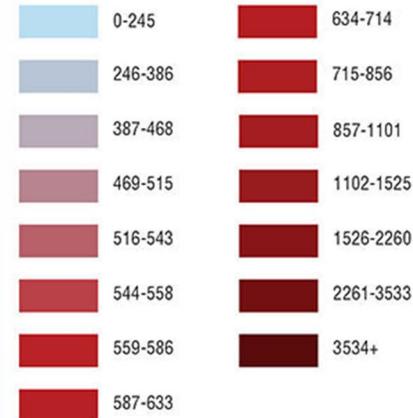
- **Economic Analysis of Nature-Based Solutions**
- **Hydrologic Model/Water Budget**
- **Future Land Use Planning**





### Central Baseline

*(Total demand by census block in gallons per day per acre)*



### Central Trend

*(Total demand by census block in gallons per day per acre)*



A joint project of ...



UF GeoPlan Center

This map uses a mathematically-generated geometric scale to better visualize the results due to the wide range in values. Each category has roughly the same number of data entries.

November 2016



A joint project of ...

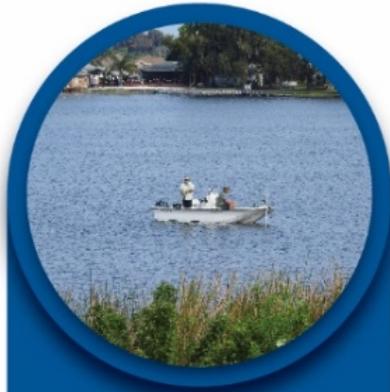


UF GeoPlan Center

This map uses a mathematically-generated geometric scale to better visualize the results due to the wide range in values. Each category has roughly the same number of data entries.

November 2016

# Benefits/Expected Outcomes



Healthy Lakes & Wetlands



Resilient Water Utilities



Thriving Community



Strong & Growing Economy



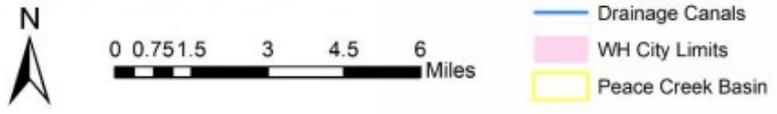
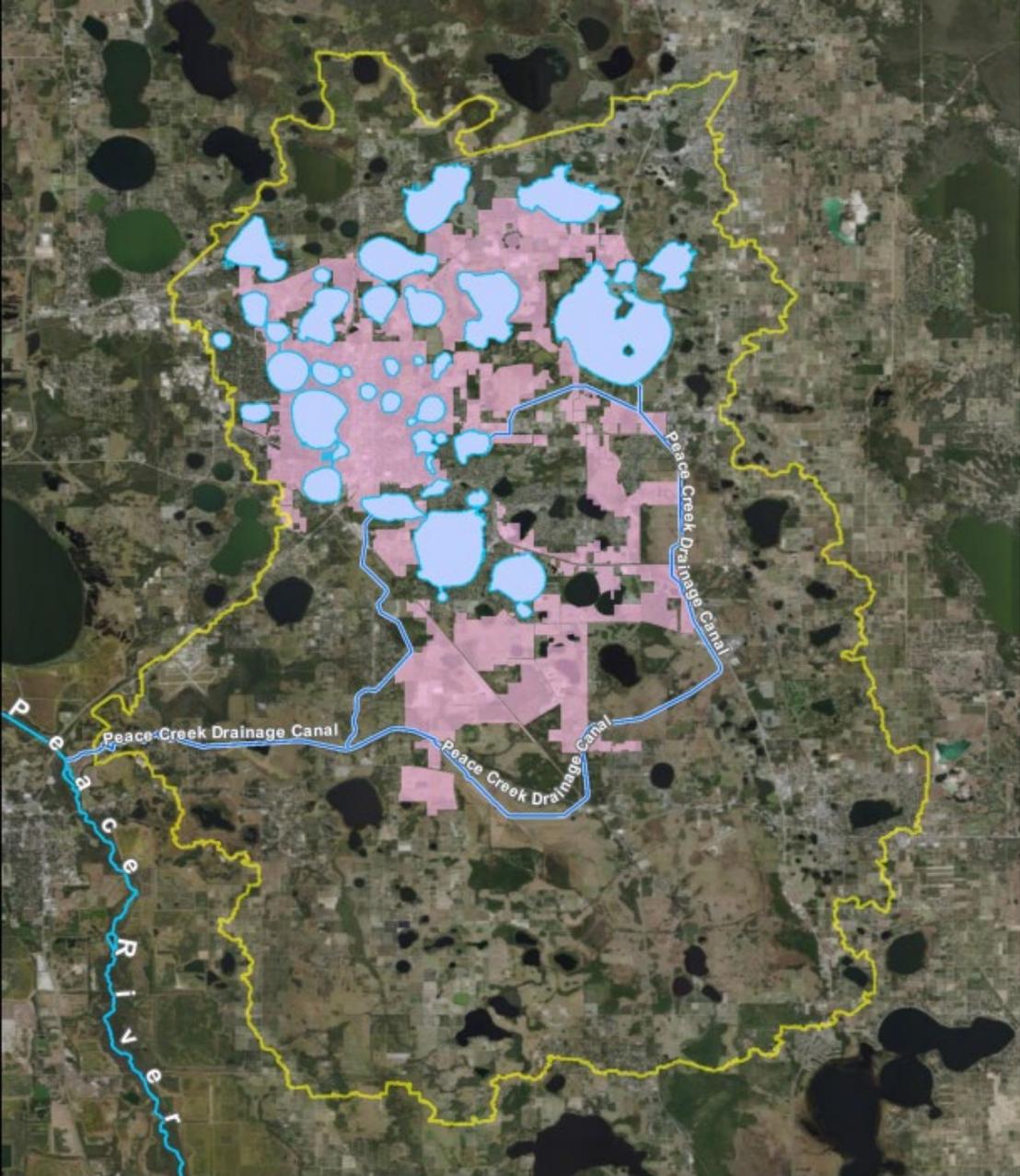
Sustainable Agriculture



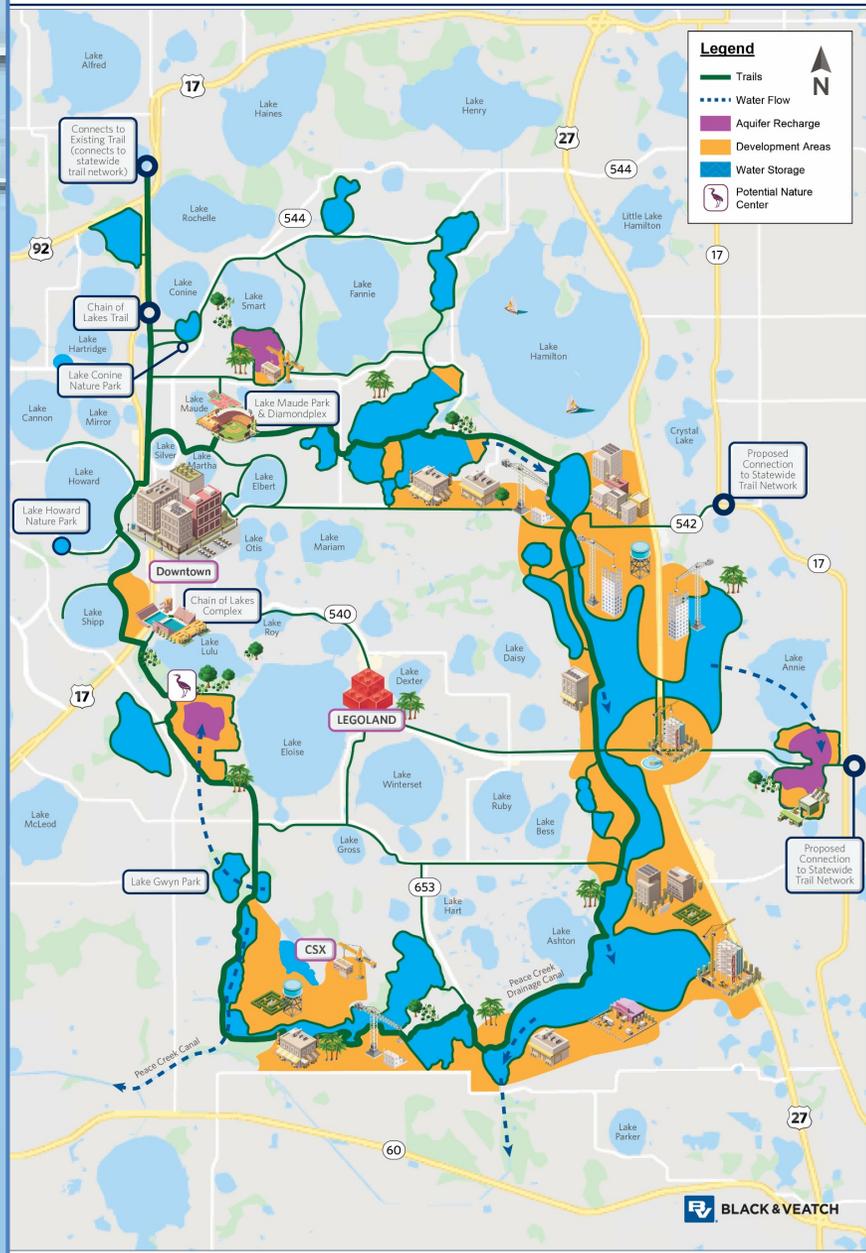
Partnerships

← WINTER HAVEN ONE WATER FRAMEWORK →

# Peace Creek Canal



**WINTER HAVEN**  
*The Chain of Lakes City*



# WINTER HAVEN

## The Chain of Lakes City

### Winter Haven's "Sapphire Necklace"

Restoring Water Resources, Adding Community Value



## Conclusions

- **Water benefits all segments of our economy, culture, environment and quality of life;**
- **Money spent on water should create multiple benefits: supply; flooding; water quality; lake levels; habitat; recreation; tourism; economic growth.**
- **Natural Infrastructure approach necessary.**
- **Build out of communities and watersheds is a reality: different approach required in the face of limited resources.**