## One Water Master Plan for the City of Winter Haven, Florida



May 11, 2023

A webinar of the Water and Planning Network

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- 3. 500 W&P Network members
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# One Water Master Plan for the City of Winter Haven, Florida







#### Today's Presenting Team

City of Winter Haven
Water Director



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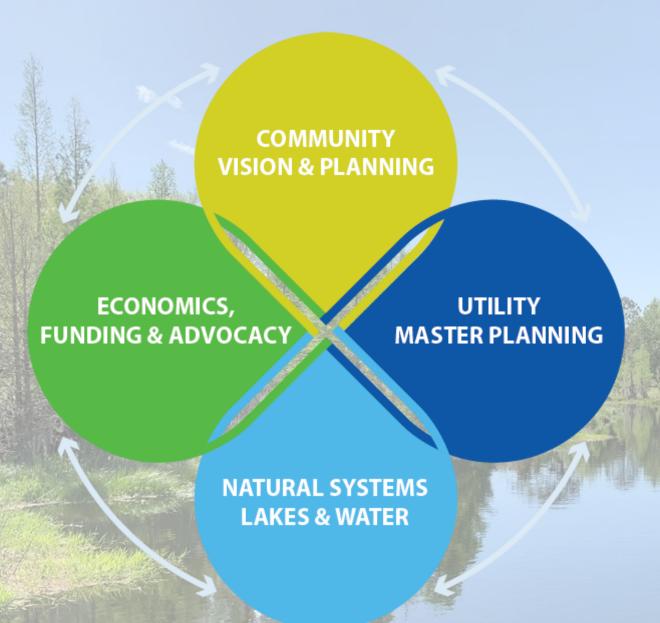
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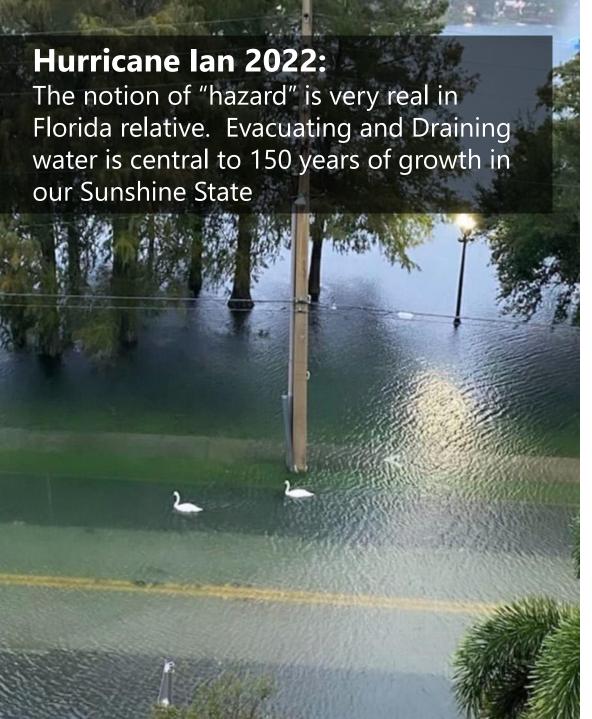
### City of Winter Haven Integrated Water Management Team

- Black & Veatch Corporation
- Brown and Caldwell
- GAI Consultants, Community
   Solutions Group
- GIS Associates (BEBR Support)
- RAND Corporation
- David MacIntyre
- David Rathke
- Brian Wheeler
- Eric Draper



## Why is Winter Haven working on a One Water Plan?















# Nevertheless, there's a story about Winter Haven and we already know how it ends.

#### A story about growth and environmental impact





#### Polk County is one of the fastestgrowing areas in the nation, U.S. Census says

Maya Lora The Ledger

Published 3:04 p.m. ET May 7, 2021













### The Floridan aquifer: Why one of our rainiest states is worried about water

Florida's booming population is writing a water check its aquifers can't cash; from lawn sprinklers to kitchen faucets, Florida needs to cut back and use less water.



#### **Aquifer depletion**

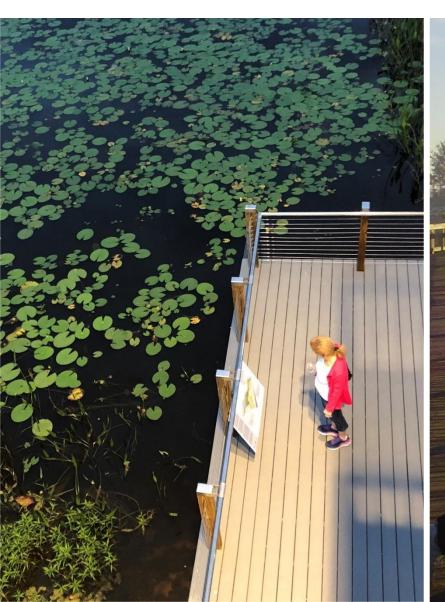
### **Reduced quality of life**

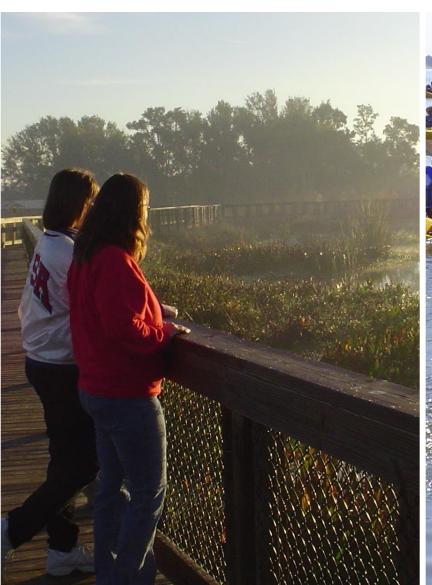






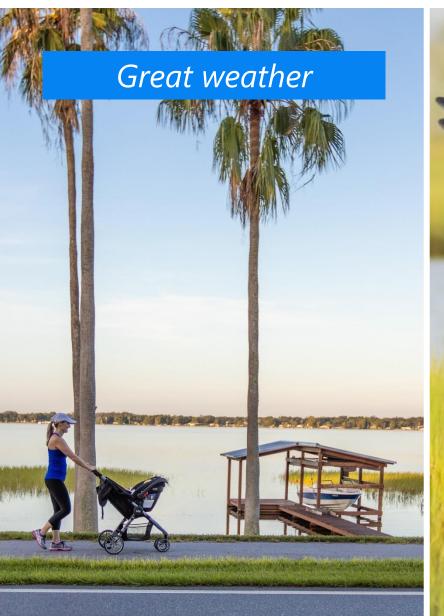
### Winter Haven can tell a different story.







#### This story starts the same









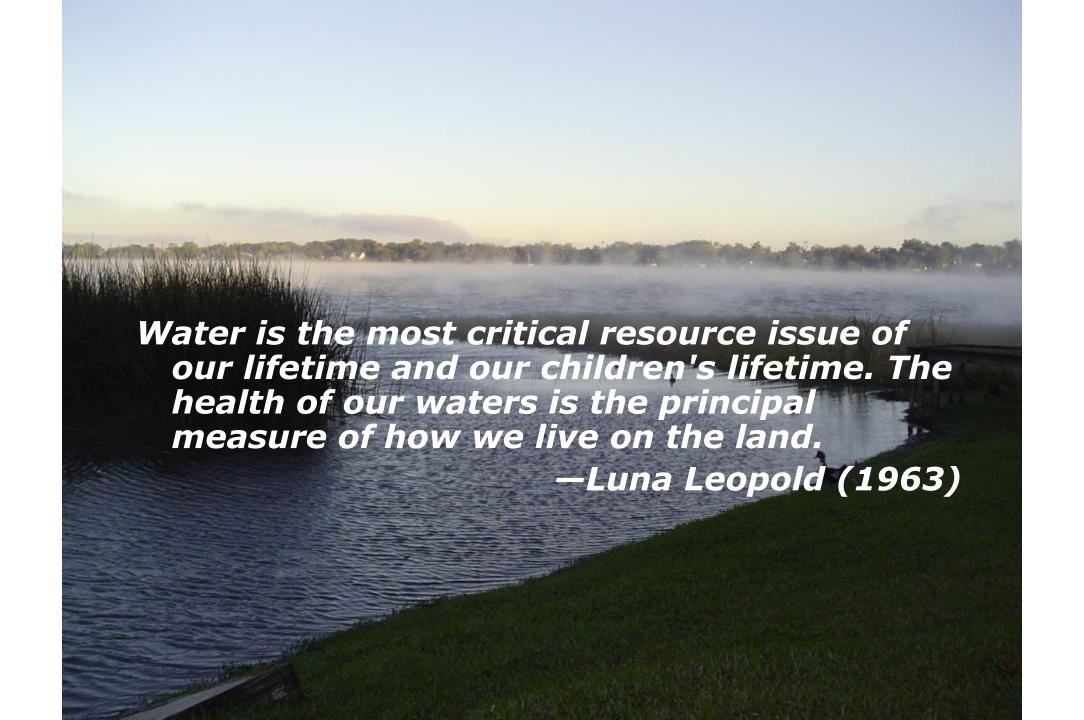






## One Water Master Plan + Sapphire Necklace Projects





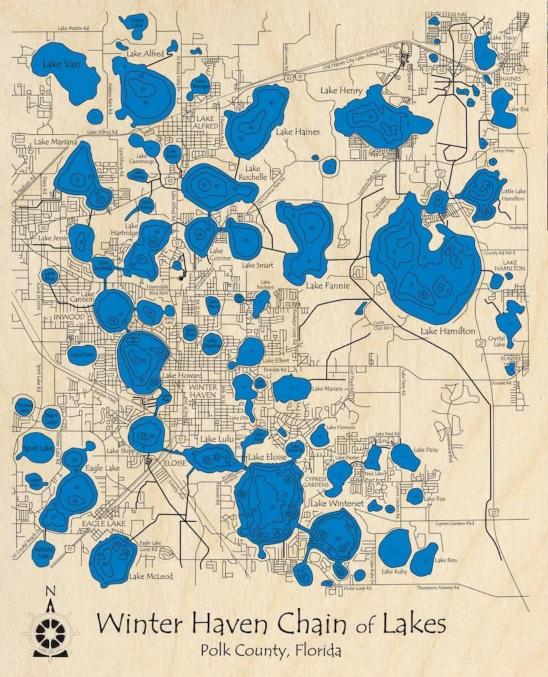








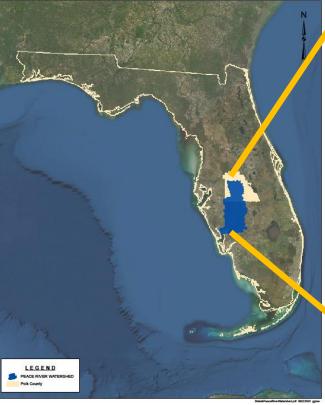




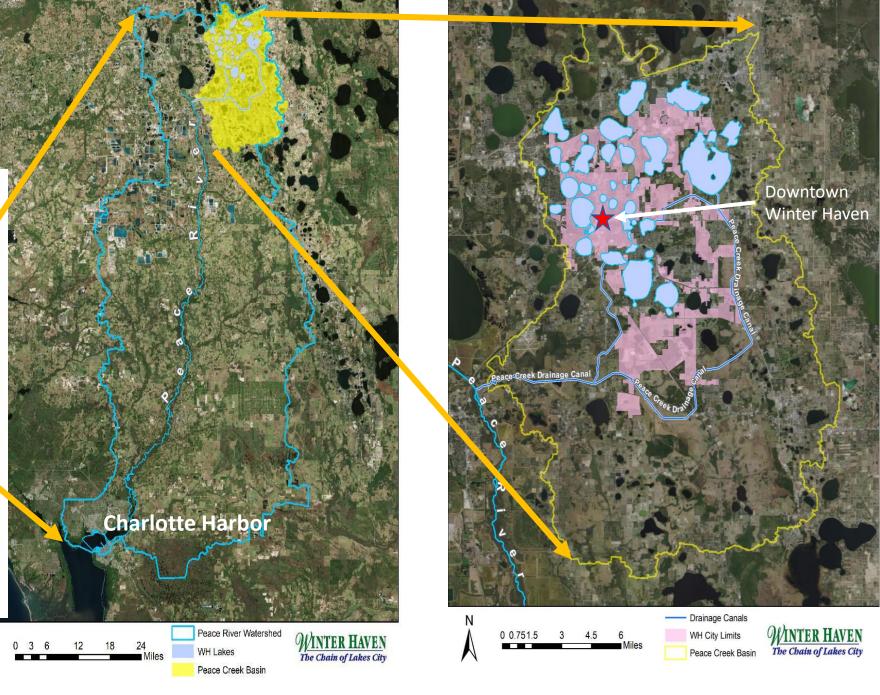


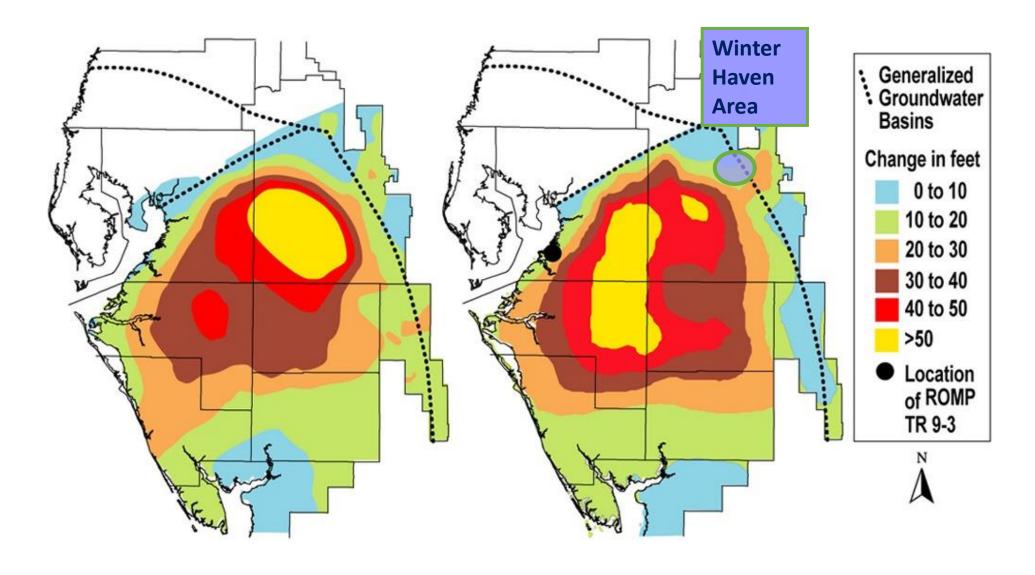


Top of the Surface Watershed



PEACE RIVER WATERSHED AREA





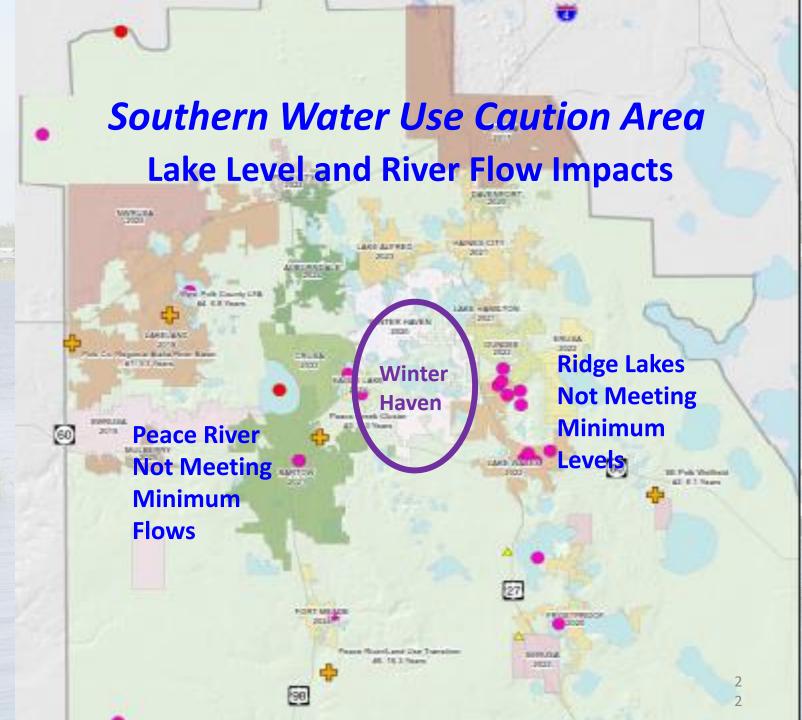
**Predevelopment to 1975** 

Predevelopment to 2000

### Hydrologic Impairments







Too Little Water...





**SR 542 - 2004 Hurricanes Looking East** 



**SR 542 - 2004 Hurricanes Looking South** 

#### ...Too Much Water

#### **One Water Plan Timeline/History:**





#### **Existing Water Management Nature Parks**



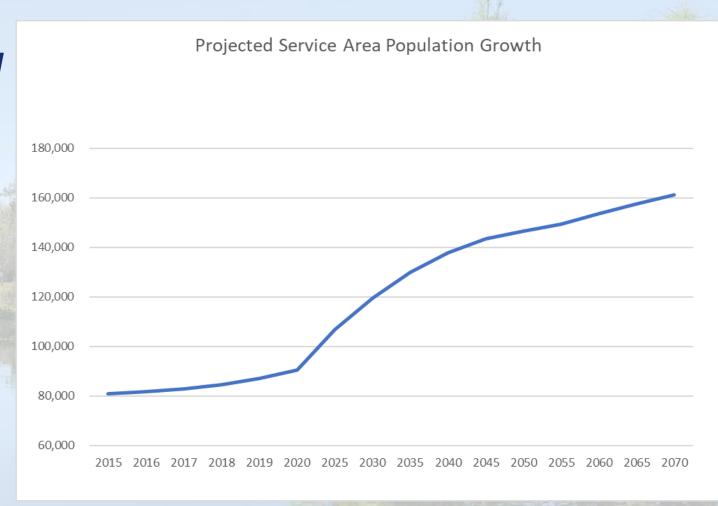


### **Anticipated Growth**

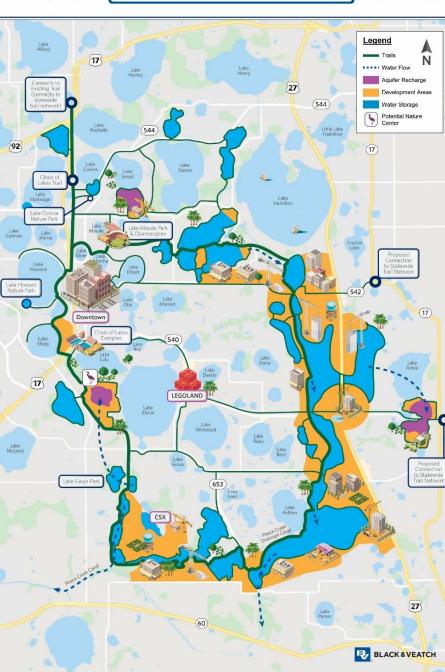
Water demand increases from 8 mgd in 2015 to 18 mgd in 2070

Current estimates indicate Winter Haven could exceed its aquifer consumptive use permit by 2035

- > Increased Water Costs
- > Degraded Quality of Life







### Sapphire Necklace/GI Benefits:

- 5,000 Acres of restored wetlands
- Approx. 70 Billion gallons of water storage
- 30-miles multi-modal trail system
- Scenic Beauty
- **Improved Flood Control**
- Sustainable Lakes
- **Waterfront Development**
- Extension of 'Chain of Lakes City'
- Increased cost-benefit

## How do we plan for a better One Water future?

#### **One Water Master Plan – Purpose Statement**

"...ensure that the right investments are being made to benefit all aspects of water and the community."

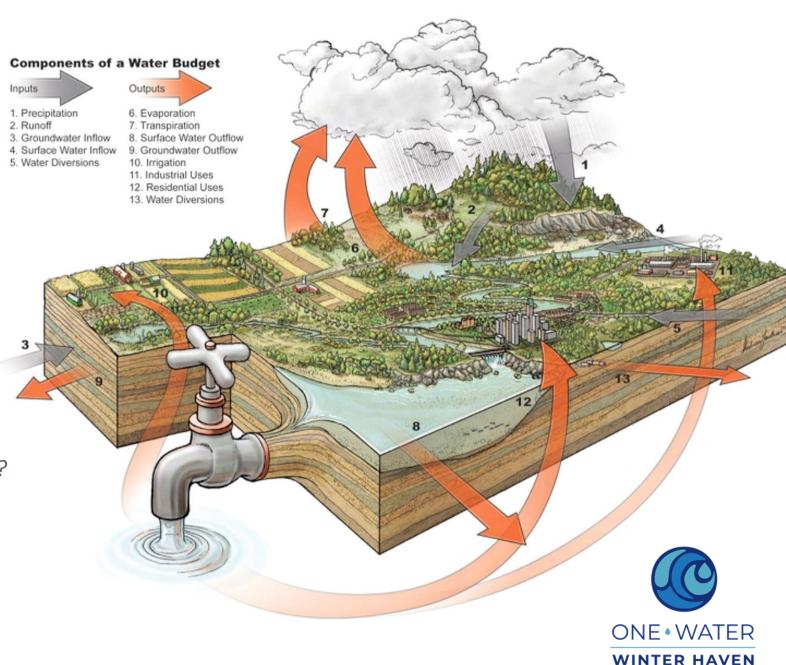


In Winter Haven, One Water is a **collaborative and innovative water management approach** to enhance sustainability of essential resources and overall quality of life resulting in multiple local and regional benefits. Our vision is to be a **vibrant, innovative community embracing a One Water culture** that promotes responsible stewardship of social, environmental and economic resources. In that Vision, we will grow and develop in a way that restores our natural systems that provide water supply and protects the City's 50 lakes. We believe that integrated thinking about one of our most precious resources will set the stage for other areas of the state to ensure that the right investments are being made to benefit all aspects of water and the community. It is envisioned that implementation of the One Water Master Plan will have **regional benefits to Polk County, the Peace Creek watershed, the Peace River, and the Charlotte Harbor Estuary.** 

## It all Starts with the WATER BUDGET

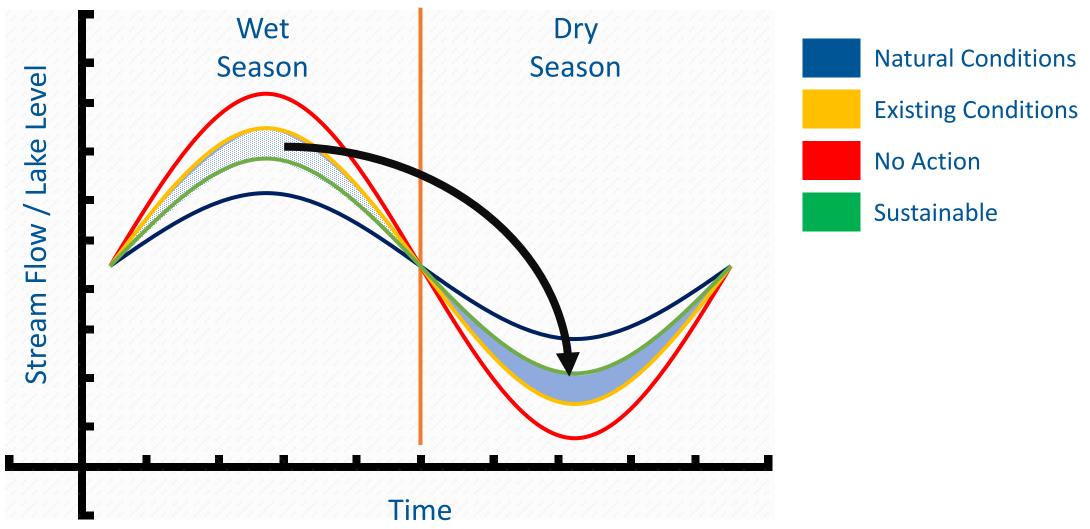
Water Budget = The relationship between the inflow and outflow of water through a specified region.

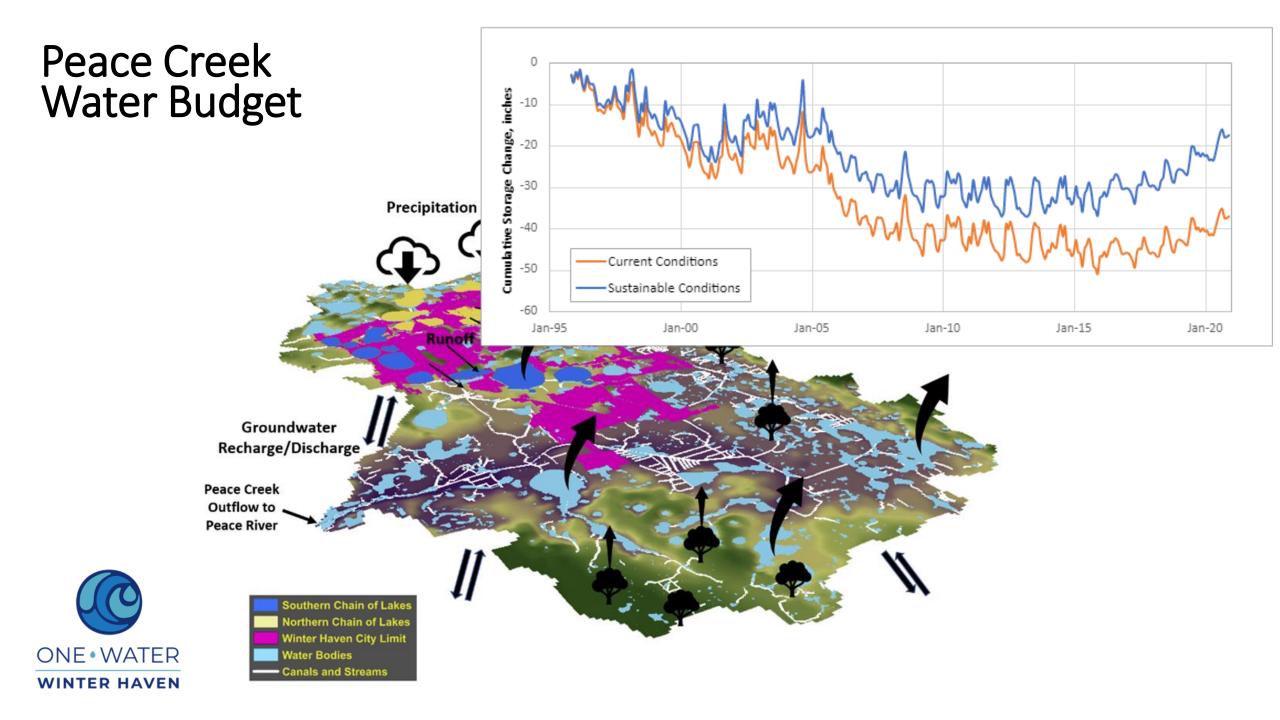
- How much do you have?
- How much does it cost?
- What is the quality of the Resource?
- What choices does Winter Haven have to meet current and future needs?
- How shall Winter Haven invest its economic resources for the next 50 years?
- What will be the Value Proposition?









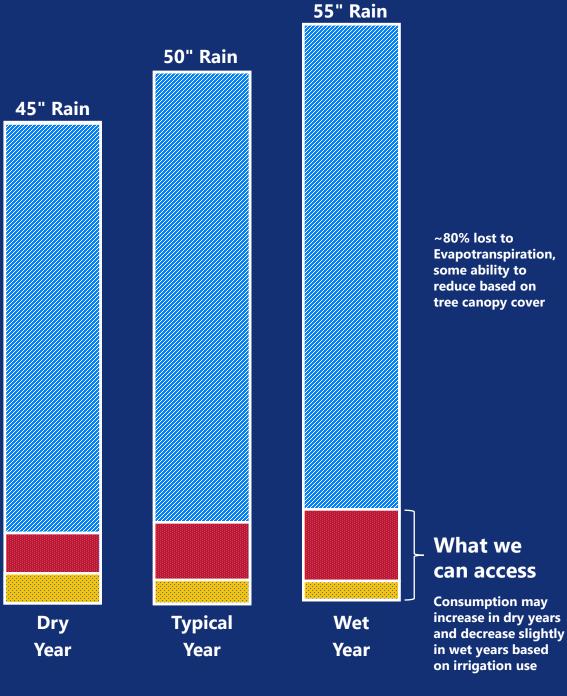


# 50 inches of rainfall in a typical year, but only a small amount is accessible.

**Evapotranspiration** 

**Discharge** 

Consumption



#### Where is the line of scrimmage? Where can we make a play?

Discharce **One Water Intervention** Consumption

- **Optimize Consumption**
- Smart pricing
- Water efficient technology

One Water Interventions can achieve a sustainable

balance to support capacity for future growth needs while enhancing quality of life.

**Typical** Year

#### One Water – A 50 Year Adaptive Plan



#### Restore

Restoring lakes and wetlands that provide natural water storage

#### Recharge

Replenishing the natural aquifers using nature-based solutions





# One Water – A 50 Year Adaptive Plan

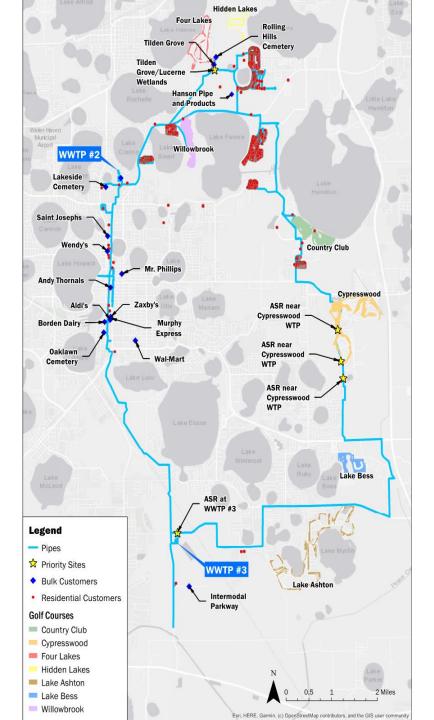
# Reclaim

Modernizing wastewater treatment technology

## Reuse

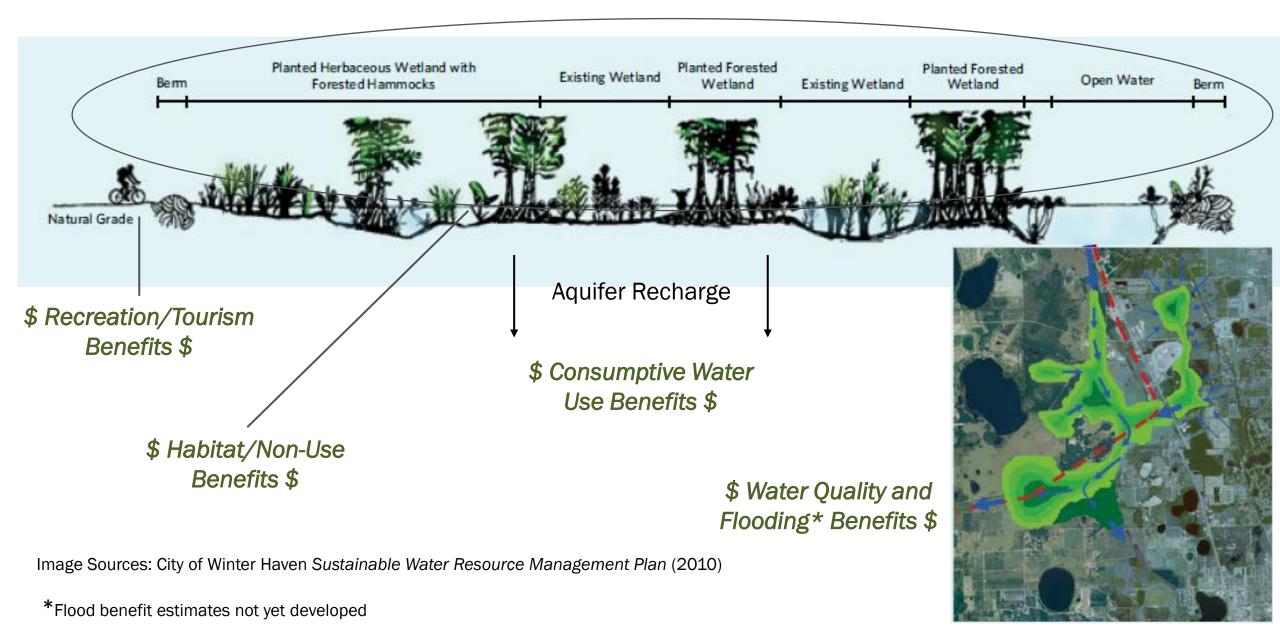
Increasing the life cycle of water as a renewable resource in Winter Haven







# **Economic Evaluation Framework**



## **One Water Master Plan**







# What is the role of urban planning as an intervention?

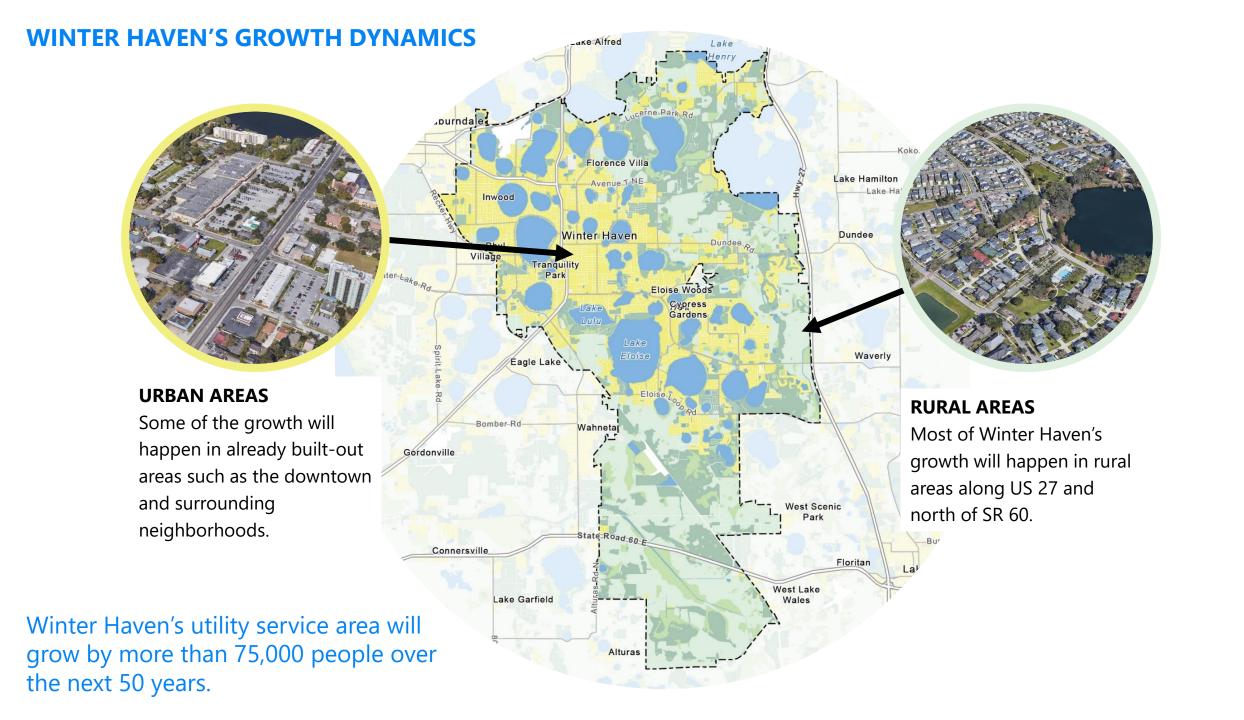
## Our role as urban planners & designers:

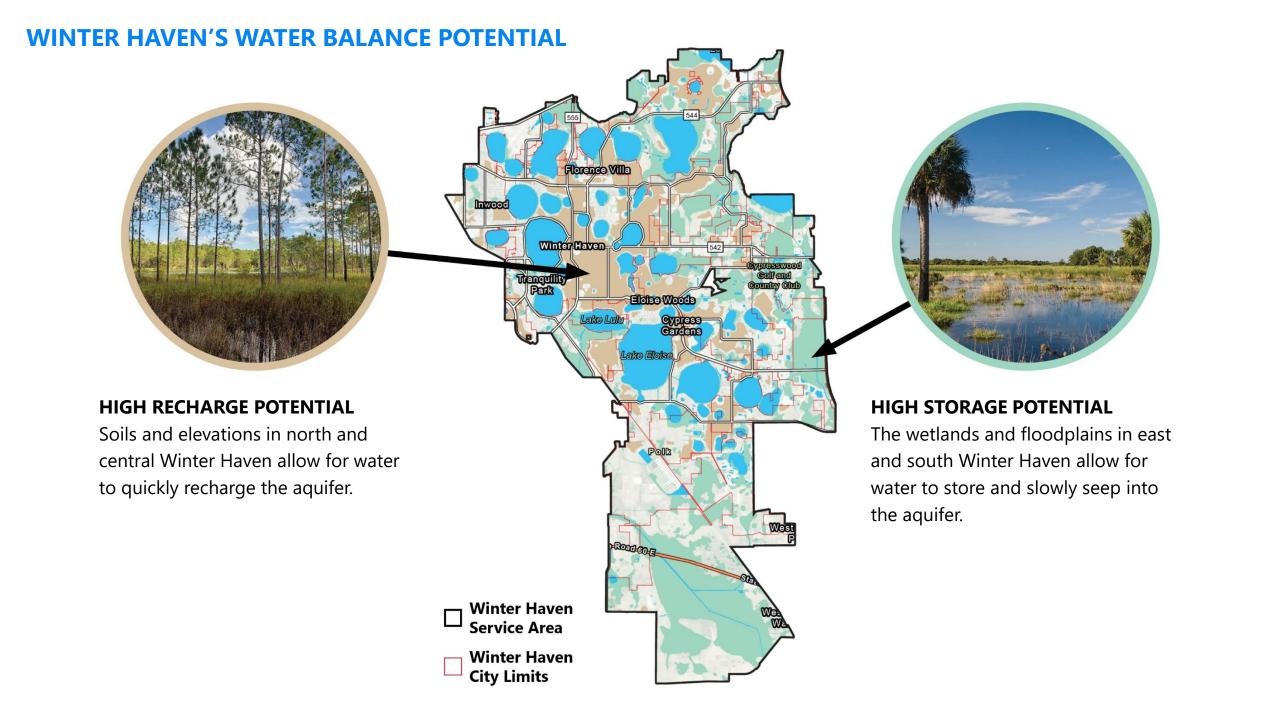
Understand the dynamics of growth in Winter Haven

Understand the dynamics of water in Winter

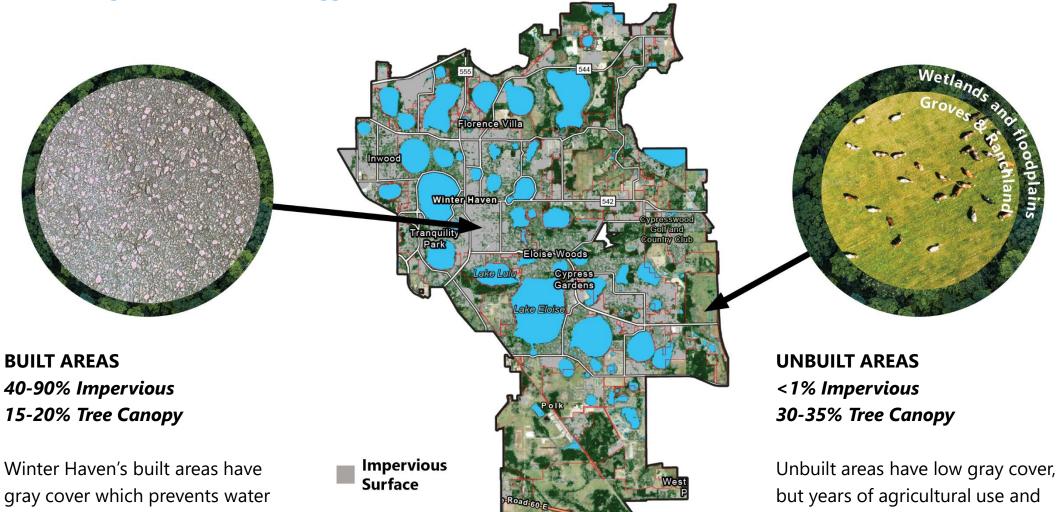
Haven

Provide recommendations for development policy change





#### **WINTER HAVEN'S WATER DYNAMICS**



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.

Tree Canopy

コ Winter Haven Service Area

Winter Haven City Limits

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

# 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

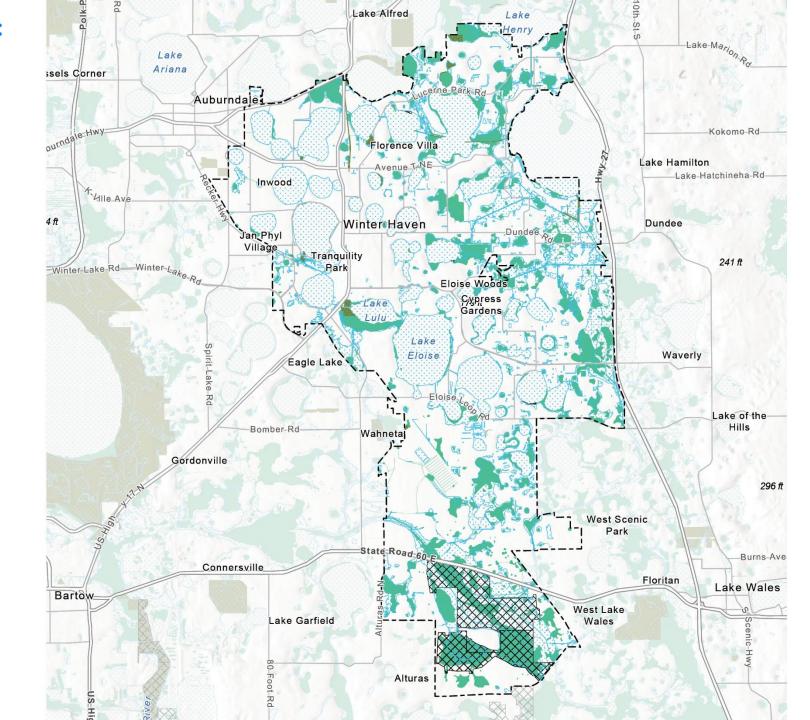


#### **TYPES OF PLACES IN WINTER HAVEN:**



**Natural** 

Preserve and enhance the quality and quantity of the backbone Green + Blue systems in Winter Haven



#### **TYPES OF PLACES IN WINTER HAVEN:**



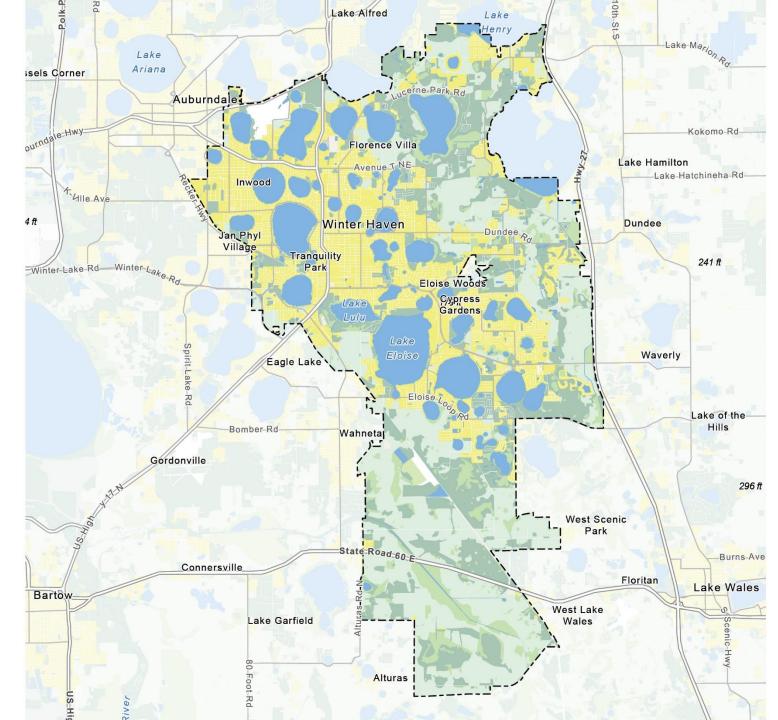
## Infill + Reinvestment

Retrofit land use and infrastructure policies and practices to renew Green + Blue systems in these areas



#### **New Growth Areas**

Use development to leverage new Green + Blue systems to maintain the integrity of the water cycle in these areas



#### APPLY THESE RECOMMENDATIONS TO THE THREE MAJOR PLACE TYPES

#### **Natural**



**ENHANCE** 

Preserve and enhance the quality and quantity of the backbone Green + Blue systems in Winter Haven

#### **Infill + Reinvestment**



**New Growth Opportunity Areas** 



**OPTIMIZE** 

Retrofit land use and infrastructure policies and practices to renew Green + Blue systems in these areas

Use development to leverage new Green + Blue systems to maintain the integrity of the water cycle in these areas

#### **DEVELOPMENT TYPOLOGIES**

#### Infill + Reinvestment













EXAMPLE LOCATIONS:

EXAMPLE LOCATIONS:

#### **DEVELOPMENT TYPOLOGIES**

#### **New Growth**



NEW NEIGHBORHOOD: CONSERVATION



Impervious Cover: 45 50%

R.O.W.: 18 20%

Parks/Open Space: 18 - 20%

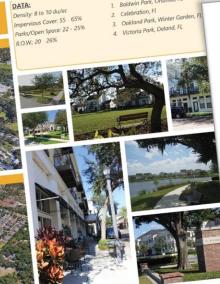
1. Lake Nona Preserve, Orlando, FL 2. South Bay, Orlando, FL



















EXAMPLE LOCATIONS:

2. Ashlin Park , Windermere, FL

3. Horizon West, Orlando, FL

4. Avalon Park, Orlando, FL



#### EXAMPLE LOCATIONS: 1. Baldwin Park, Orlando, FL



#### Added Density: 20 to 22 du/oc Impervious Cover: 85-90% Parks/Open Space:10-15% R.O.W.: 24 26%

#### EXAMPLE LOCATIONS:

- Celebration Town Center, Celebration FL
- Baldwin Park Town Center, Orlando, FL
- Avalon Park Town Center,
   Orlando, FL













- Publix Distribution Center, Orlando, FL
- 3. Lockheed Martin, Orlando, FL
- Lowe's Regional Distribution Center, Kissimmee, FL





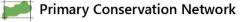




#### **ALTERNATIVE LAND DEVELOPMENT SCENARIO**



#### Natural Green/Blue



Lake



#### Infill and Reinvestment

Neighborhood: Stable

Neighborhood: Targeted Infill

Workplace: Limited

Workplace: Targeted Infill

Downtown Core

Corridor: Limited

Corridor: Targeted Infill

Corridor: Intensification



#### **New Growth Areas**

New Neighborhood: Traditional

🔰 New Neighborhood: Hybrid

New Neighborhood: Conservation

New Workplace

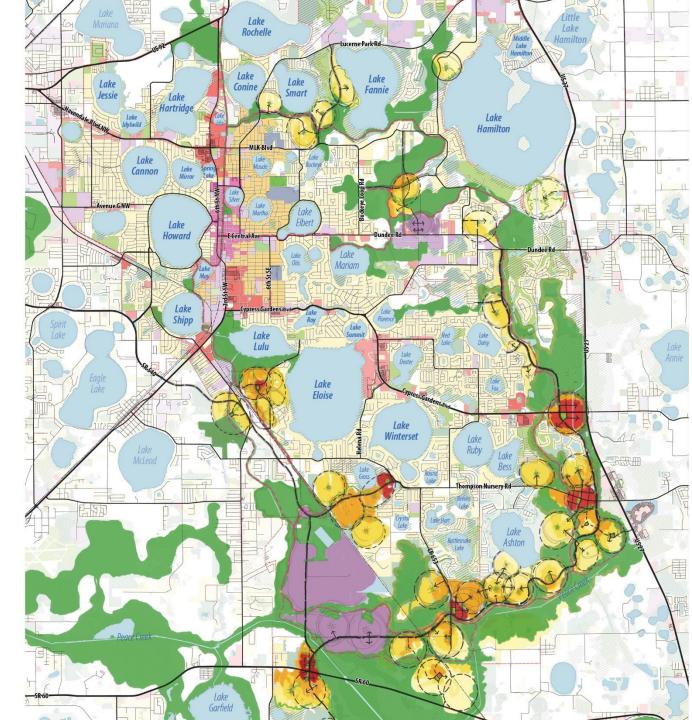
New Mixed-Use Center

#### **Community Elements**

Main Trail Alignment

--- New Road Connection

Neighborhood



#### **Our recommendations:**

Leverage 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

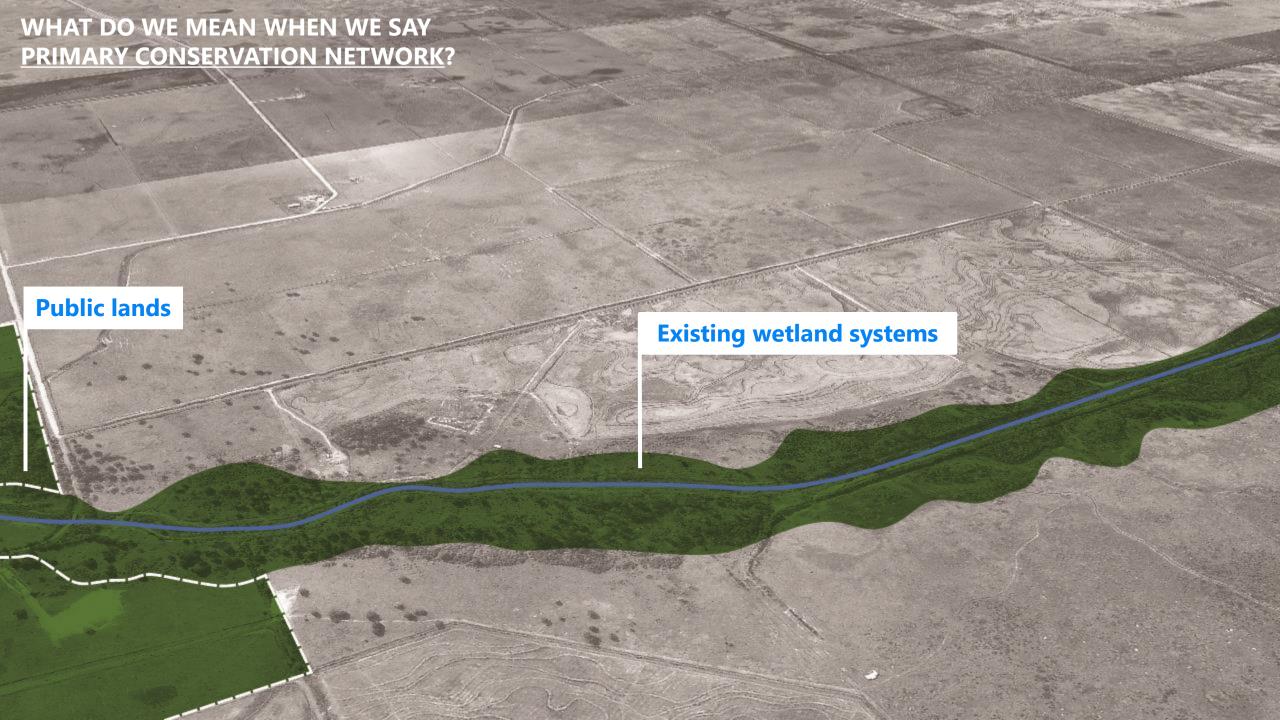
A trail system that connects and activates people with Winter Haven's water-centric resources and community.

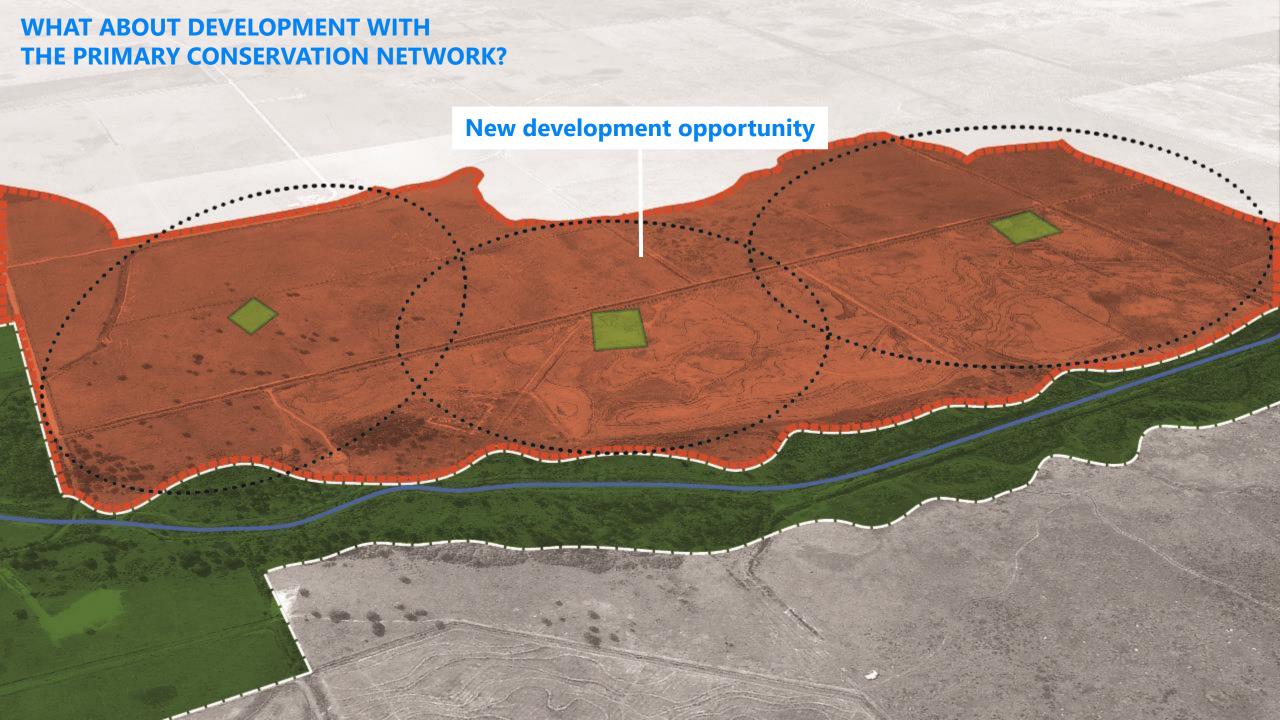
## Why?

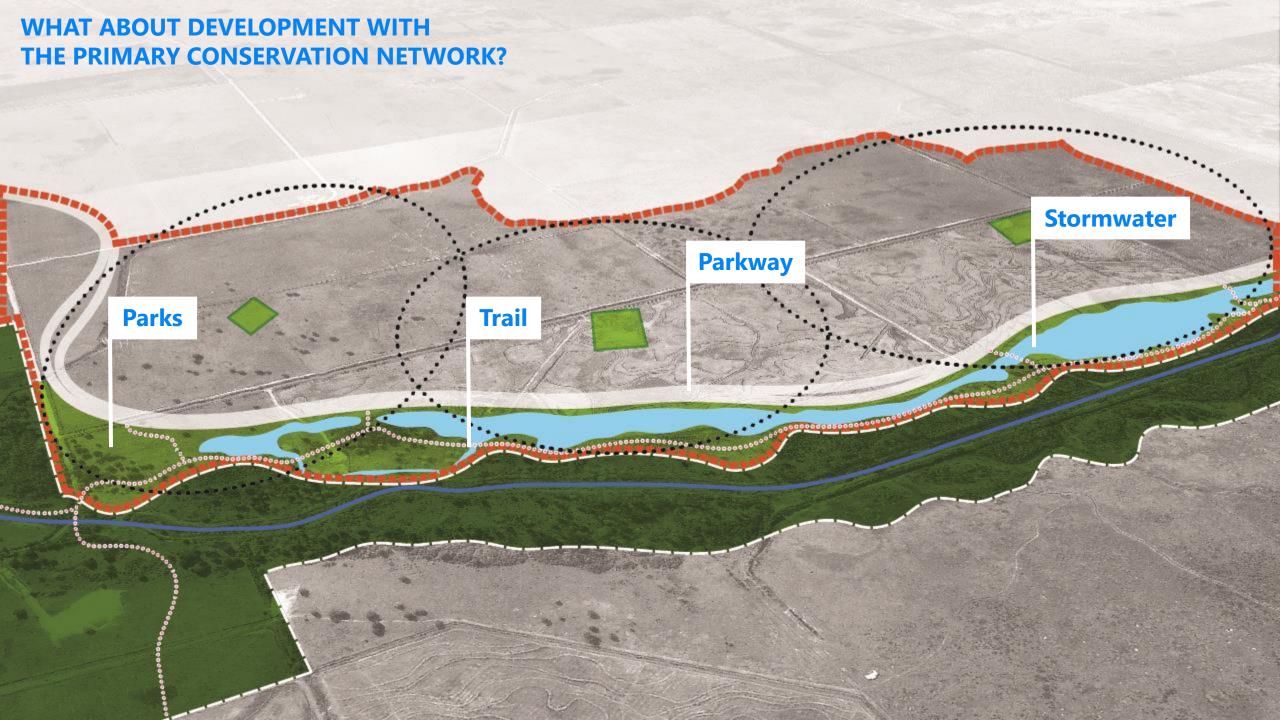
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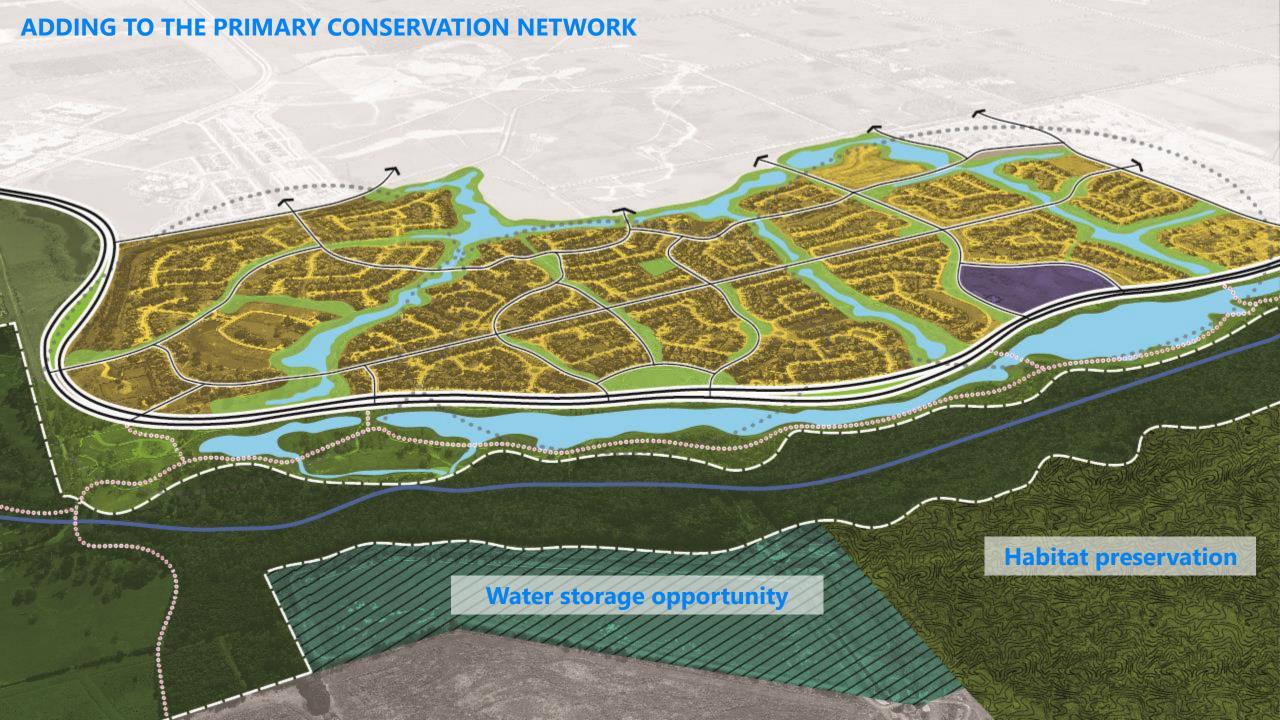








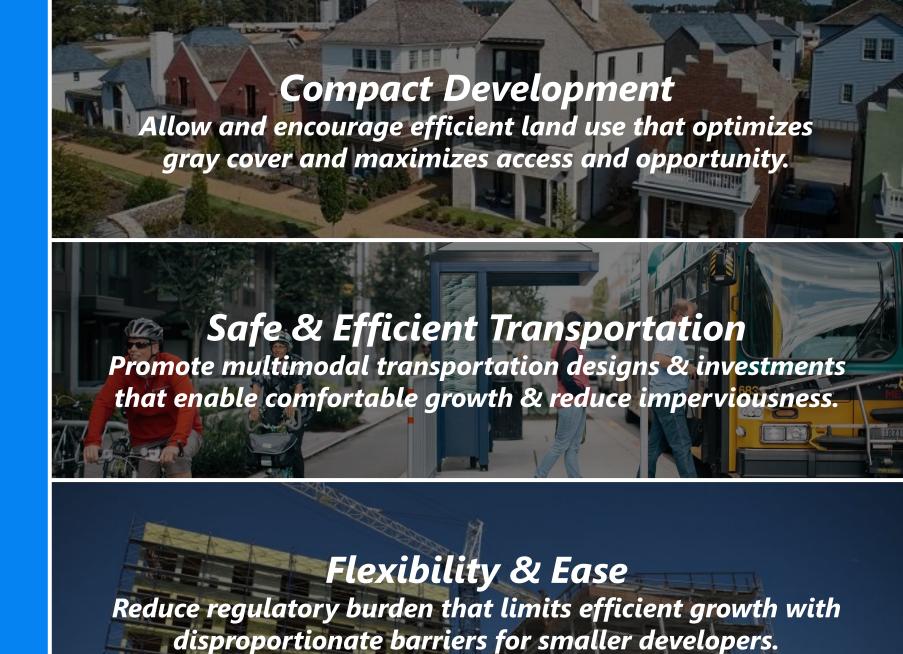




## Why?

One Water Land
Development
Strategy

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





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



Eliminate minimum parking requirements



Reduce minimum lot size requirements



**Expand density/FAR allowances** 



Allow mix use & housing by-right



**Establish multimodal connectivity reqs.** 



Safe Streets and Efficient Roads



Open Space & 10-min walk to parks



Light form-based requirements

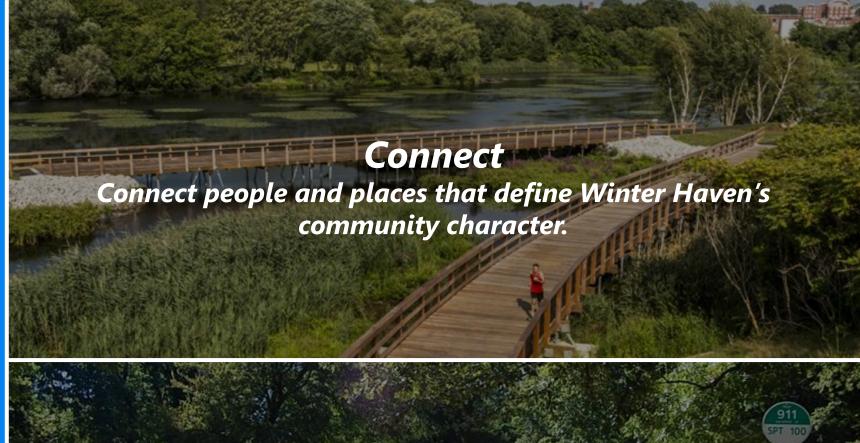


Streamlined approval processes

## Why?

Sapphire Necklace Trail

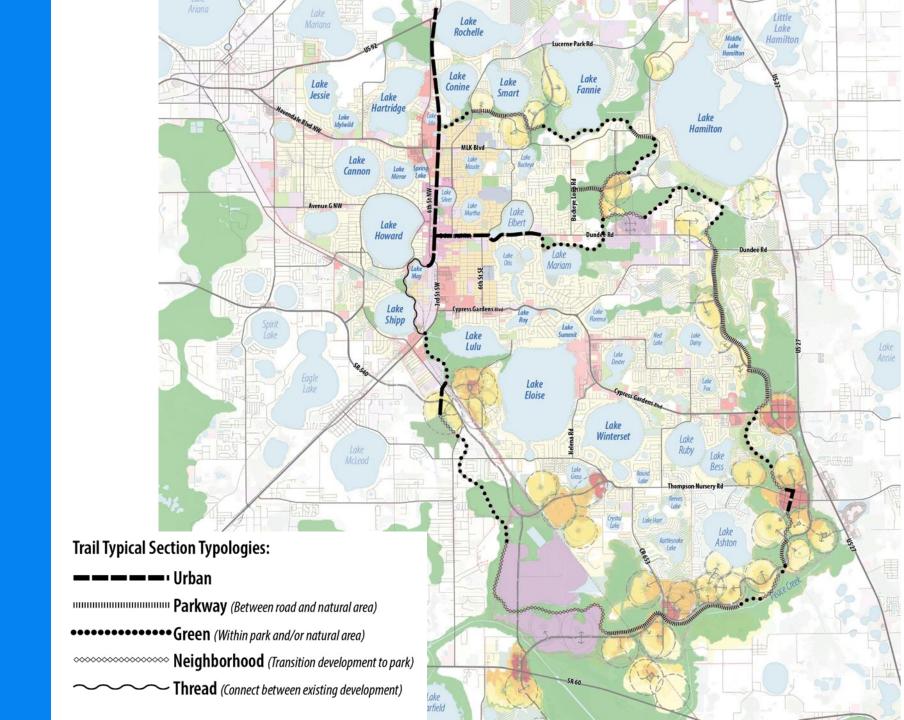
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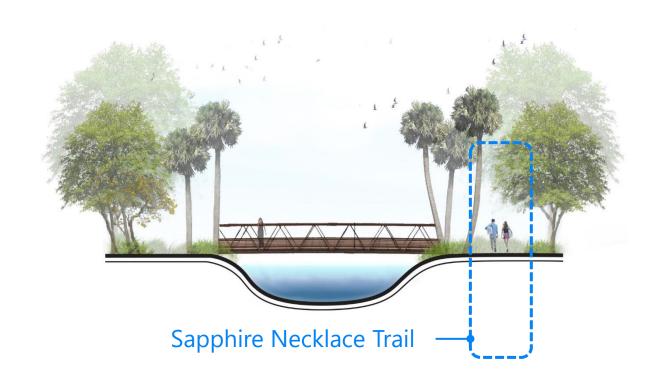
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# Sapphire Necklace Trail

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

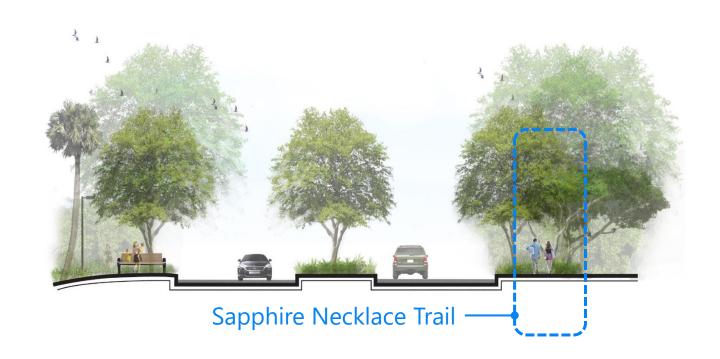
## **Green:** Within a park or natural area



# Sapphire Necklace Trail

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

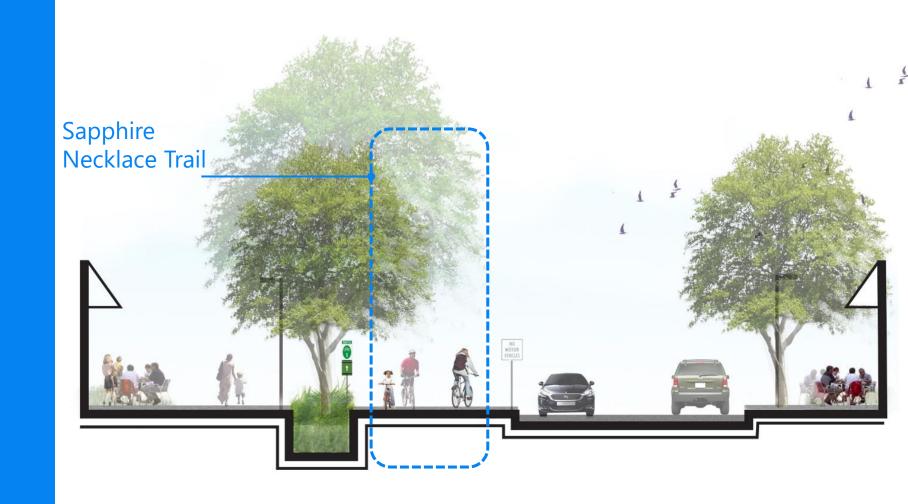
# **Parkway:** Adjacent to roadway connecting to natural area or park



# Sapphire Necklace Trail

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

# **Urban:** Multi-use trail and raingarden as part of urban streetscape



# Visualizing Change: What could a One Water future in Winter Haven look like?













# How do we grow and mobilize our partnerships?

## **Internal Communications**



- It takes a village to move a new idea forward!
- We needed champions from within
- The Integrated Water Management Team was formed at the beginning of the process.
- Each Department within the City is represented on the team, as well as key players from strategic stakeholders such as the County, the Polk Regional Water Cooperative and Consultant Team.

# Stakeholder Engagement & External Communications



- Stake holder Engagement Plan:
   Define the stakeholders, and create key champions within the stakeholders organization if there is not one!
- Methods of engagement include: Letters, Emails, Phone Calls, Group Meetings, Workshops, Working Groups, Document Reviews, Surveys

# Stakeholder Engagement & External Communications

- Adapt messaging and engagement methods and approach to each group.
- Winter Haven has taken advantage of strategic players on the internal team to make connections to present to key stakeholder groups such as state and federal agencies.



# Community outreach and education



- Tell your story, tell it often!
- Be visible in the community and at public events
- Partner with local schools in delivering messaging to the next generation!
- Give talks and tours!
- Educate on many platforms: website, social media, blogs, create curriculum for teachers, speak at schools, print media, news stations.

# Partnerships are Essential



### Thank You!

# City of Winter Haven Water Director



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# **City of Winter Haven Project Manager**



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## **Questions and Discussion**

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#### IN CLOSING

- Thank you for joining us on this webinar! The link for the webinar recording will be available in a few days.
- If you wish to request it, have any further questions, or want to sign up for our newsletter list, email us at <a href="mailto:water@planning.org">water@planning.org</a>

