



Has Tavares Ecological Park Improved the Quality of Lake Dora?

Presenter:

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A scenic view of a seaplane on a lake. In the foreground, a red and white seaplane with the registration N72475 is moored at a grassy shore. A large, leafy green tree stands to the left of the plane. In the background, a building with a red roof is visible on the left, and the lake extends to the horizon under a clear blue sky.

America's Seaplane City

- Seat of Lake County
- Estimated population of 22,000
- Surrounded by Lake Harris, Lake Eustis, and Lake Dora

Project Overview

Community Redevelopment Area

Lake Dora waterfront | Tavares Pavilion | Boat & seaplane marina | Sandy beach
10-mile mixed-use trail | Passive recreation



Lake Dora



- Located in the Ocklawaha River Watershed
 - 4,385 acres
- Florida DEP Impaired Water
- Minimal treatment at outfalls
- City aimed to reduce concentrations of
 - Total Phosphorus (TP)
 - Total Nitrogen (TN)
 - Total Suspended Solids (TSS)

Stormwater Improvements

Stormwater Interceptor

divert first inch of rainfall



Drainage

3,400 LF reinforced concrete pipe



Replace

undersized conveyance systems



Detention Pond

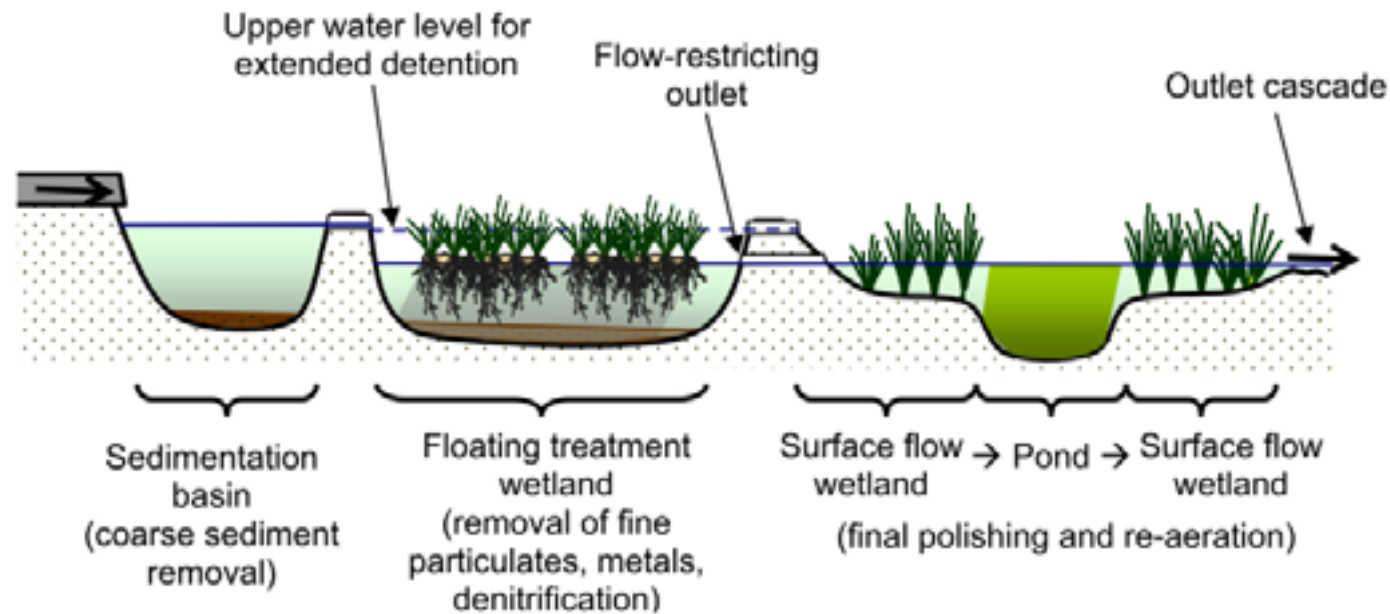
8.5-acre treatment pond



Manage Flow

6 water control structures

Final Treatment Wetland Design



■ Wet Ponds

- TP Reduction 61.5%
- TN Reduction 43%
- TSS Reduction 67%

■ Floating Mats

- TN Reduction 20%
- TSS Reduction 20%

■ Littoral Shelf/Marsh Cells

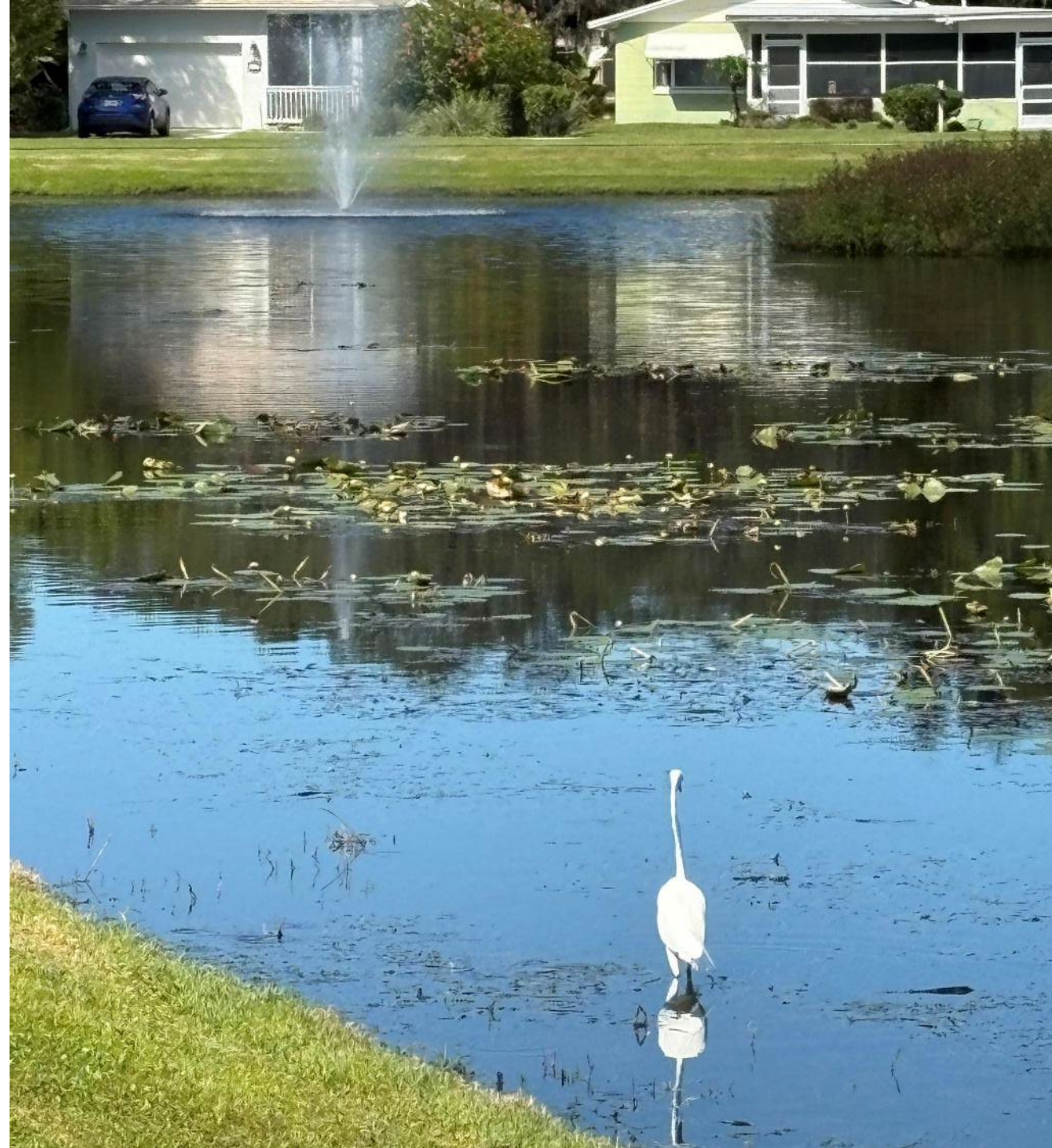
- TP Reduction 25%
- TN Reduction 25%

■ Bacteria/Denitrification

- TP Reduction 35%
- TN Reduction 35%

Project Results

- How has the water quality of Dora Lake changed in the last 15 years?



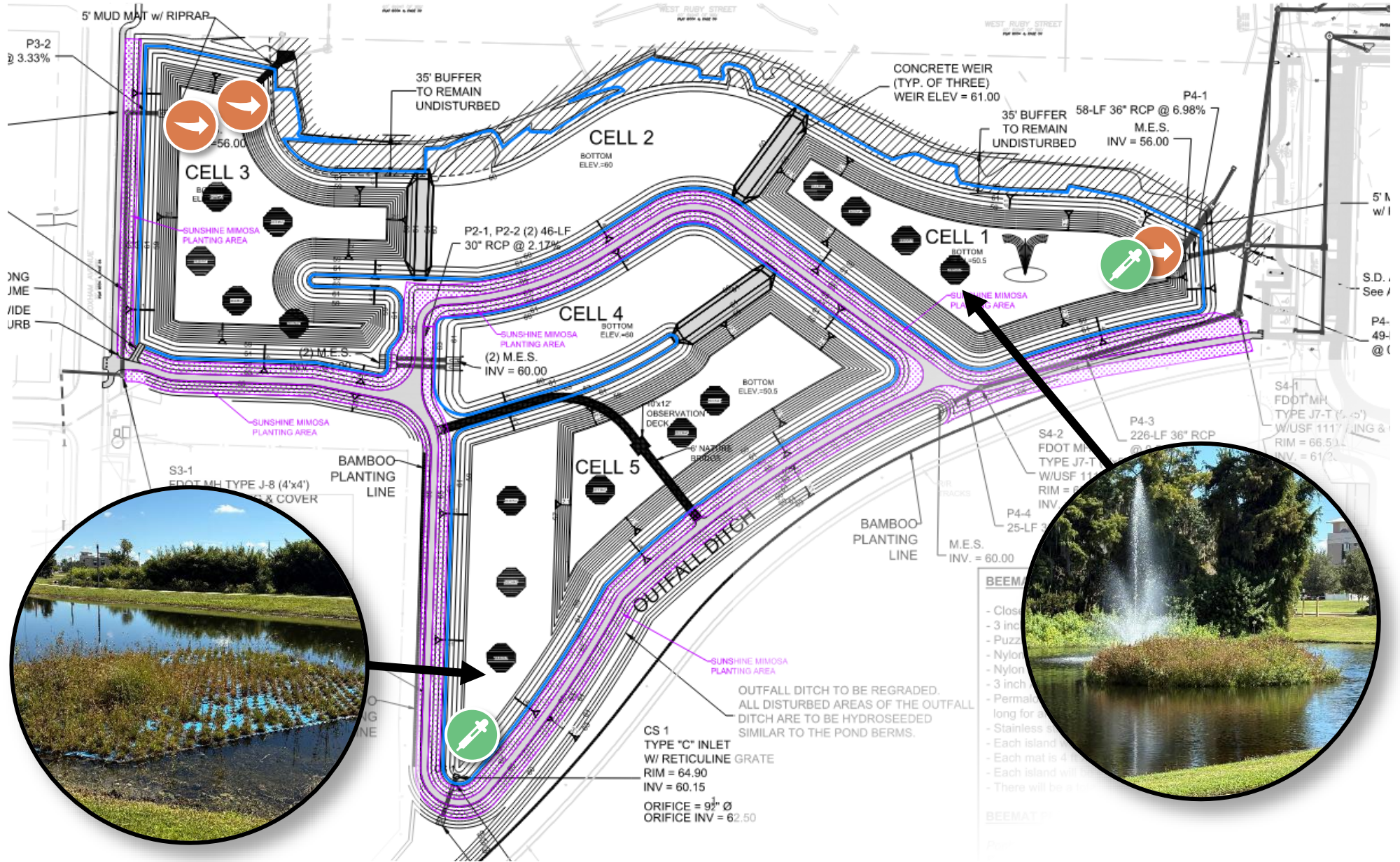




Inflow



Sample point



Biomass Harvested

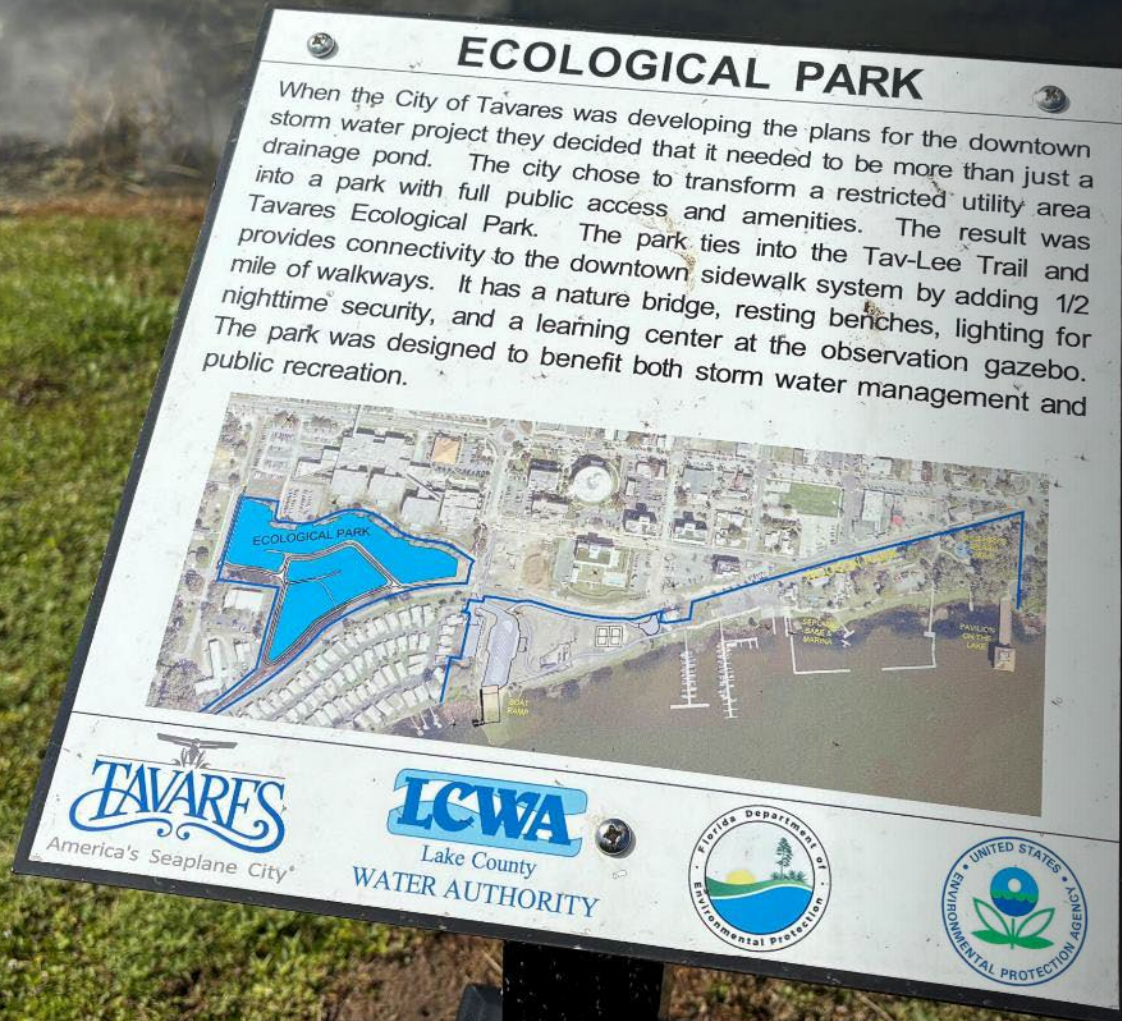
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	2019	2020	2021	2022	2023	2024
Biomass Harvested (lbs)	12,900	21,142	22,660	14,720	24,620	37,528
Minus Initial Plant weight (lbs)	231.00	431.17	742.15	489.81	808.54	0.00
Net Biomass weight (lbs)	12,669.00	20,710.83	21,917.85	14,230.19	23,811.46	37,528.00
Area of FTW (sq ft)	6,720	6,720	6,720	6,720	6,720	6,750
Area of FTW (ac)	0.15	0.15	0.15	0.15	0.15	0.15
N (%)	1.000	1.200	0.570	0.900	1.100	1.000
N (lbs)	126.69	248.53	124.93	128.07	261.93	375.28
N lbs/acre/yr	821.22	1,611.01	809.83	830.18	1,697.84	2,421.81
P (%)	0.093	0.160	0.044	0.086	0.110	0.084
P (lbs)	11.78	33.14	9.64	12.24	26.19	31.52
P lbs/ac/yr	76.37	214.80	62.51	79.33	169.78	203.43

N Nitrogen removed = 1,265.43 lbs

P Phosphorus removed = 124.52 lbs

Community Aspects

- Wayfinding signs throughout
- Expansion of existing park area
- Extensive walking path improving connectivity
- Resurgence of birds, bees, butterflies, etc.



Lessons Learned

- Education for maintenance staff about littoral shelf
- Sampling plan(ning)





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LAKE FRIENDLY PRACTICES

Lake County contains more lakes than any other county in the state. These lakes can fill in from erosion and be degraded from the nutrients washed into them from homes and businesses. Harmful materials, which are deposited into storm drain systems, eventually find their way to lakes, causing algae blooms and fish kills. To help prevent negative impacts to the lakes, follow these simple suggestions:

- Don't litter
- Fertilize and spray sparingly
- Be careful with grass and leaves
- Clean up after pets
- Wash cars and boats in the yard
- Protect against erosion
- Be a responsible boater
- Use lake friendly surface cover
- Keep septic tanks and drain fields away from the lakes
- Conserve water
- Maintain lakefronts
- Properly maintain vehicles

Find out more from the Lake County Adopt-A-Lake Program



Thank You!