

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

# Quantifiable Objective Refinement

Chassahowitzka



Madison Trowbridge, Ph.D.

Springs Scientist

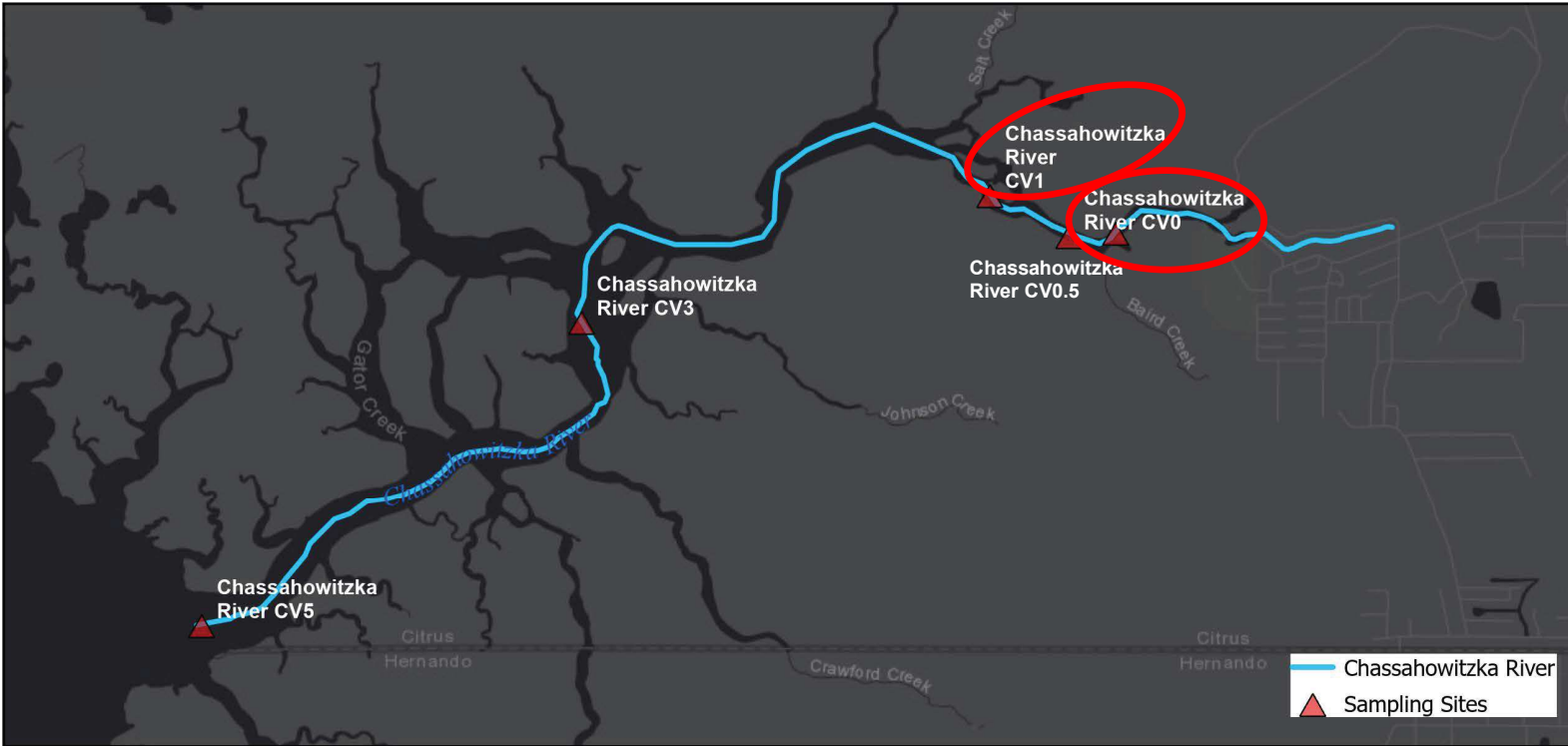
Natural Systems and Restoration

# **QO: Chassahowitzka– potential refinements**

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- **Define quantifiable objectives as different river portions**
  - Water clarity – headsprings, middle
  - Natural systems – tidal freshwater habitat, transition, estuarine
- **Define water clarity as indicator**
- **Define desirable submerged aquatic vegetation targets**

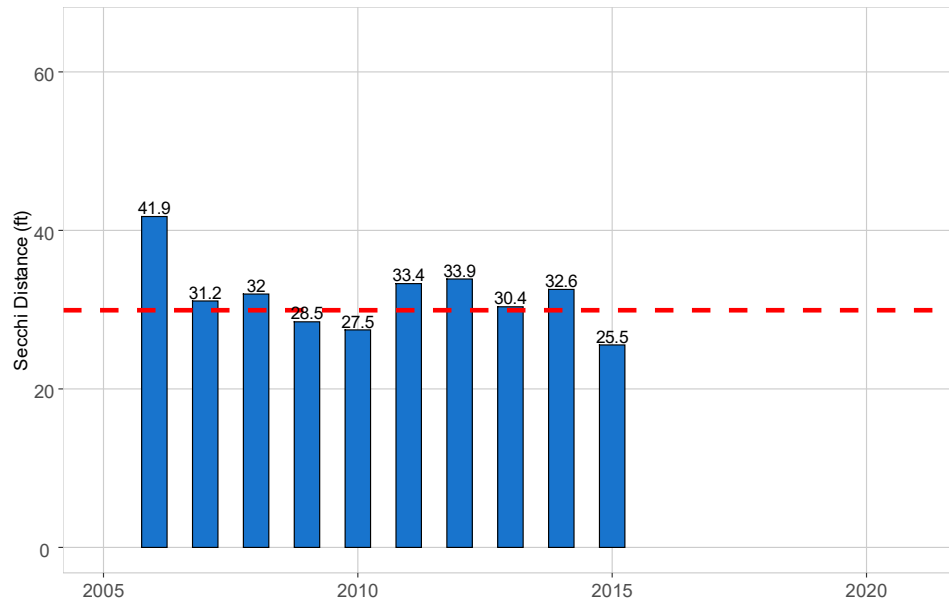
# Q0: Chassahowitzka –water clarity



Station	Clarity (ft)
CV0	30
CV0.5	17
CV1	13
CV3	6
CV5	6

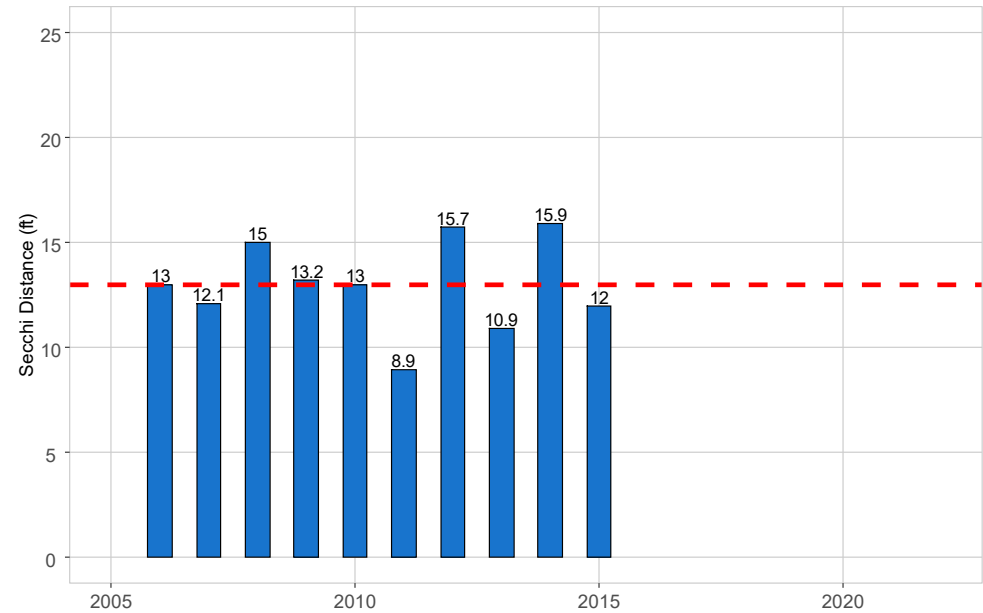
# Q0: Chassahowitzka TWG –water clarity

Mean Water Clarity: Headspring



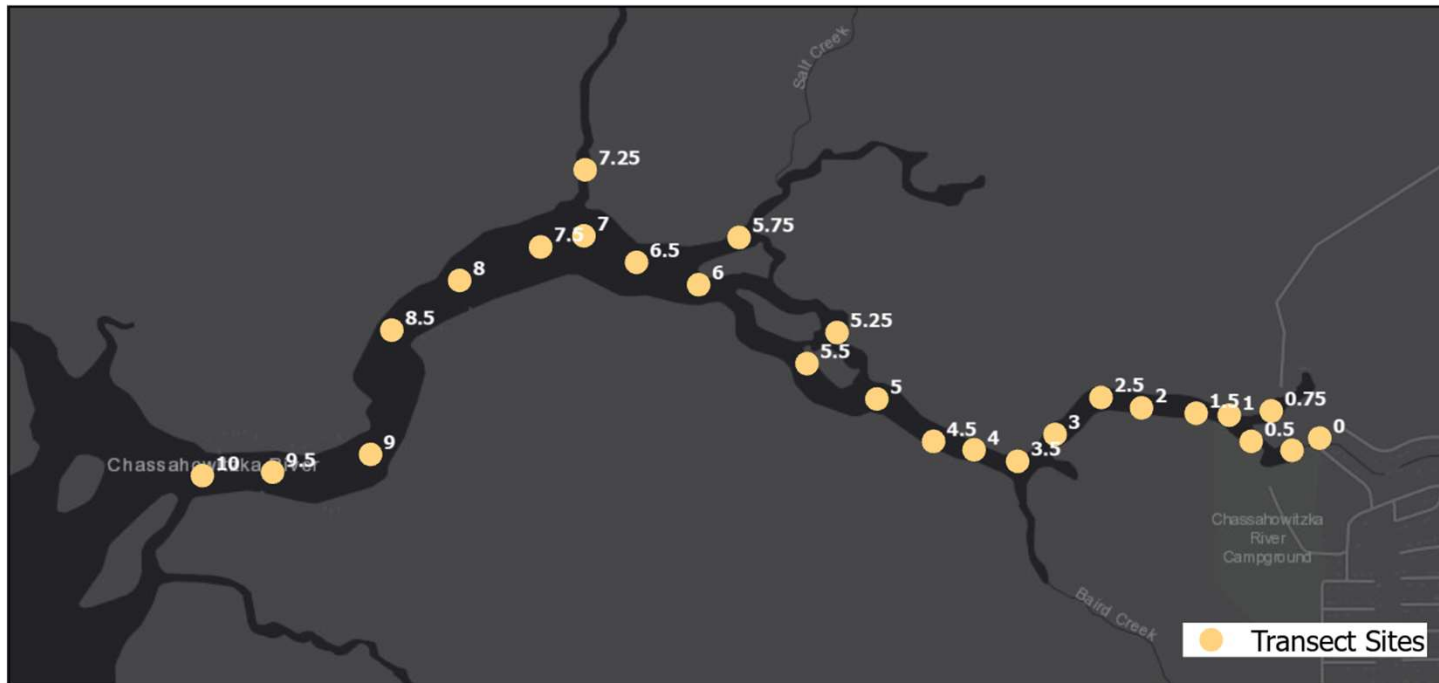
Average: 32 ft

Mean Water Clarity: CV1



Average: 13 ft

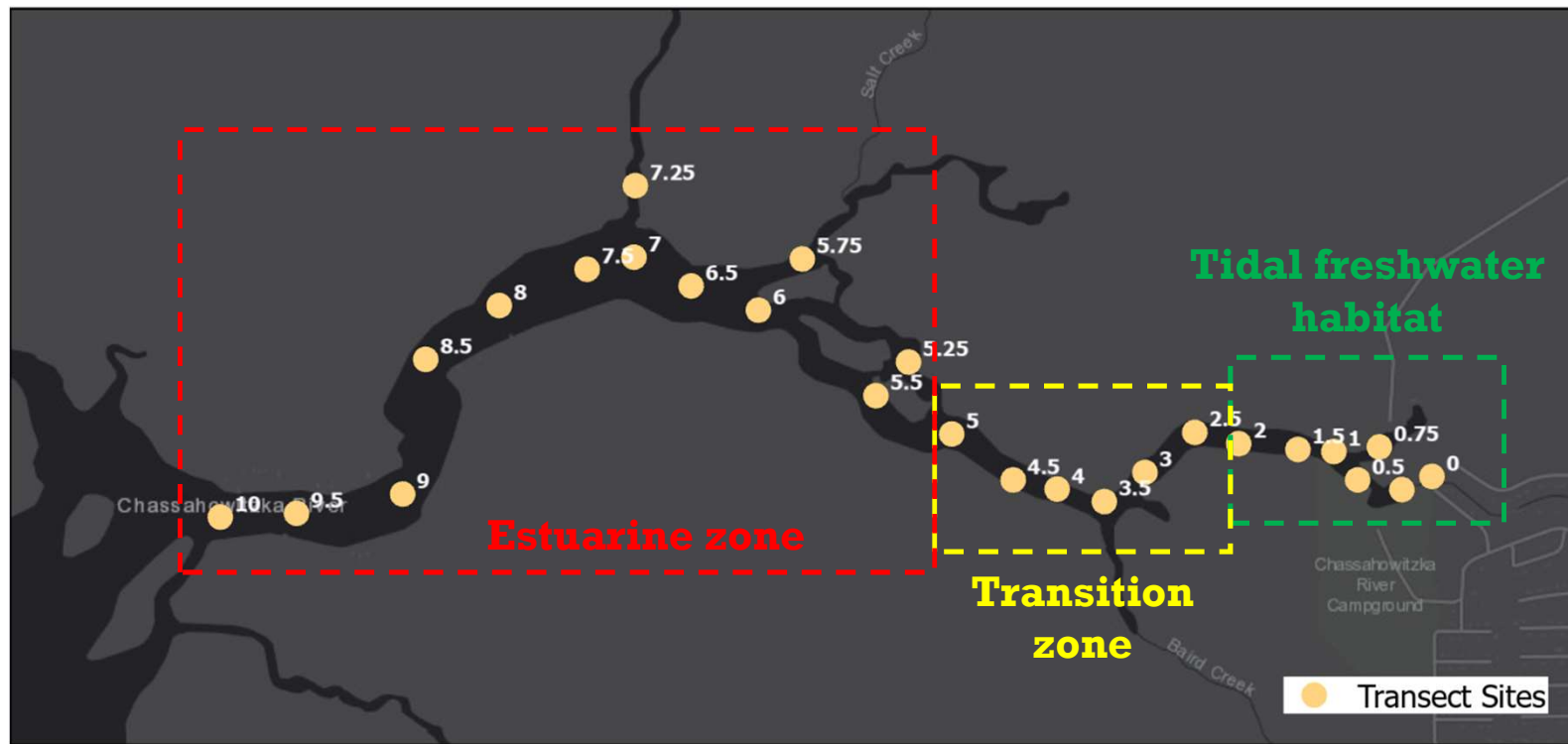
# Q0: Chassahowitzka – natural systems



Salinity



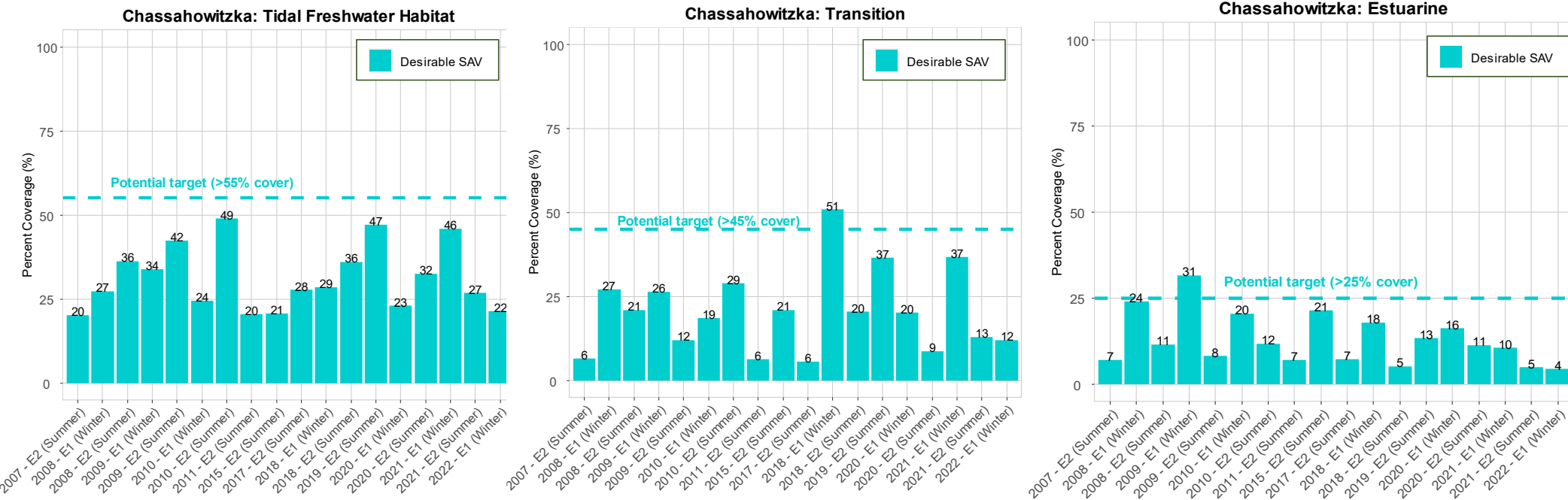
# Q0: Chassahowitzka – natural systems



Modified from Trowbridge, MC (2022). *Estimating salinization of spring-fed rivers using submerged aquatic vegetation*. Manuscript in preparation.



# Q0: Chassahowitzka – natural systems



# QO: Chassahowitzka TWG – review

## Indicators

Water clarity	Threshold
Near the headspring	32 ft
Middle portion of river	13 ft

## Quantifiable Objectives

Water quality	Target
Nitrate concentration in the springs	< 0.23 mg/L
Total nitrogen concentration in the river	< 0.25 mg/L
Water quantity	
Minimum flows for the springs and river	> 92% natural flow
Natural systems	
Coverage of desirable submerged aquatic vegetation in the tidal freshwater habitat.	> 55%
Coverage of desirable submerged aquatic vegetation in the transition zone.	> 45%
Coverage of desirable submerged aquatic vegetation in the estuarine zone.	> 25%
Coverage of invasive aquatic vegetation in the tidal freshwater habitat, transition zone, and estuarine zone.	< 10%

Water Quality	Target
Water clarity – river average	>20 feet
Water clarity – near the headspring	>40 feet
Nitrate concentration in the springs	<0.23 mg/L
Total nitrogen concentration in the river	<0.25 mg/L
Water Quantity	
Minimum flow for the river system	>97% natural flow
Natural Systems	
Coverage of desirable submerged aquatic vegetation in the river	>65%
Coverage of invasive aquatic vegetation (including filamentous algae) in the river	<10%



# District staff recommendation

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Approve refinements to the quantifiable objectives as recommended by District staff.

- Update minimum flows target as adopted
- Redefine water clarity as an indicator
- Define water clarity evaluated as headsprings and middle portions
- Define natural systems evaluated as tidal freshwater habitat, transition, and estuarine portions
- Redefine desirable submerged aquatic vegetation targets