

Lower Hillsborough River Minimum Flows Five-Year Assessment

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Water Management District*



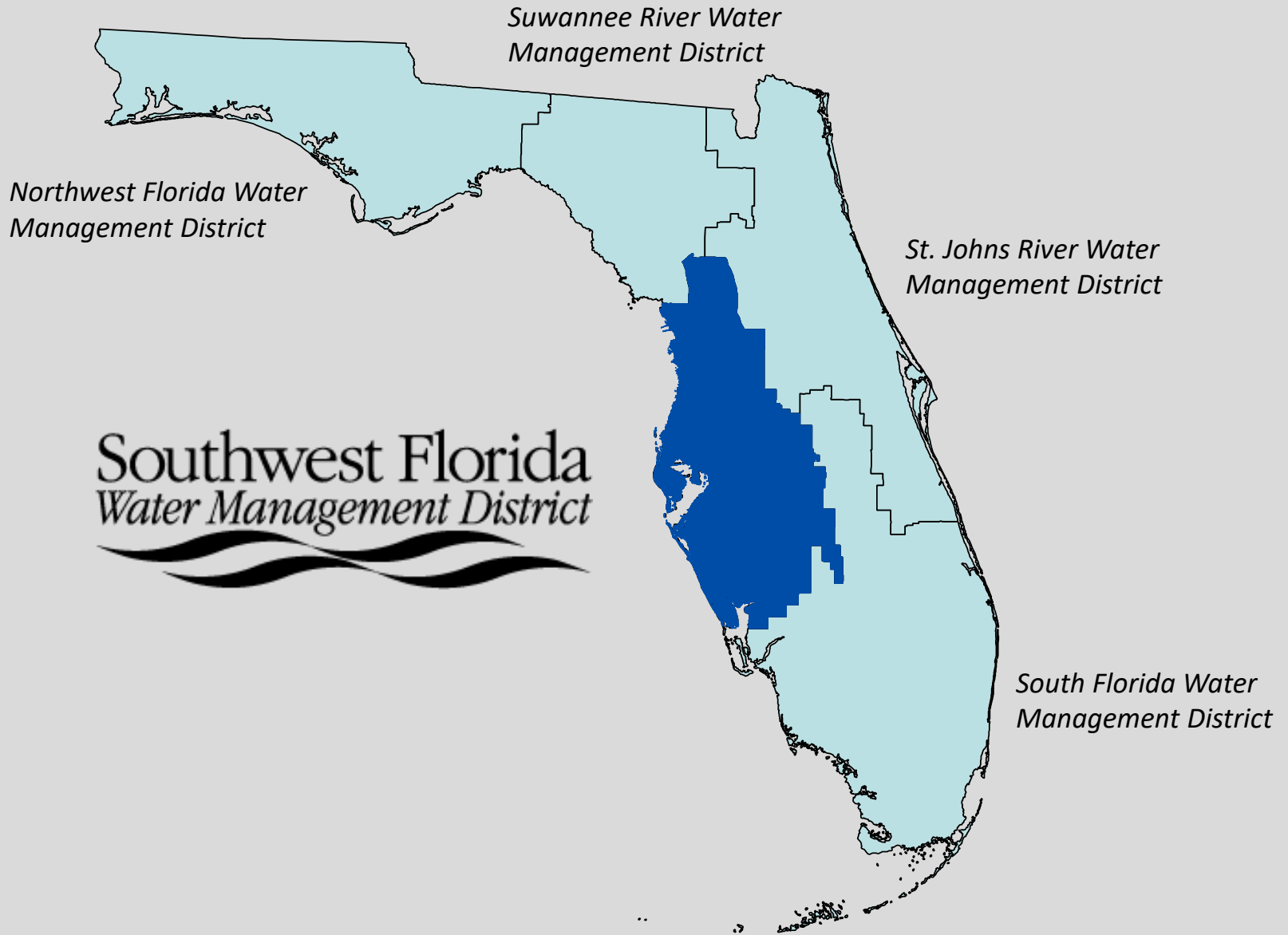
Tampa Bay Regional Planning Council
Agency on Bay Management Meeting
Pinellas Park, Florida
December 12, 2019

Presentation Outline

- Lower Hillsborough River minimum flows
- Minimum flows recovery strategy five-year assessment
- Ongoing and planned activities



Florida's Water Management Districts



The **minimum flow** for a given watercourse shall be the limit at which further withdrawals would be significantly harmful to the water resources or ecology of the area.

Section 373.042, Florida Statutes

Hillsborough River Dam



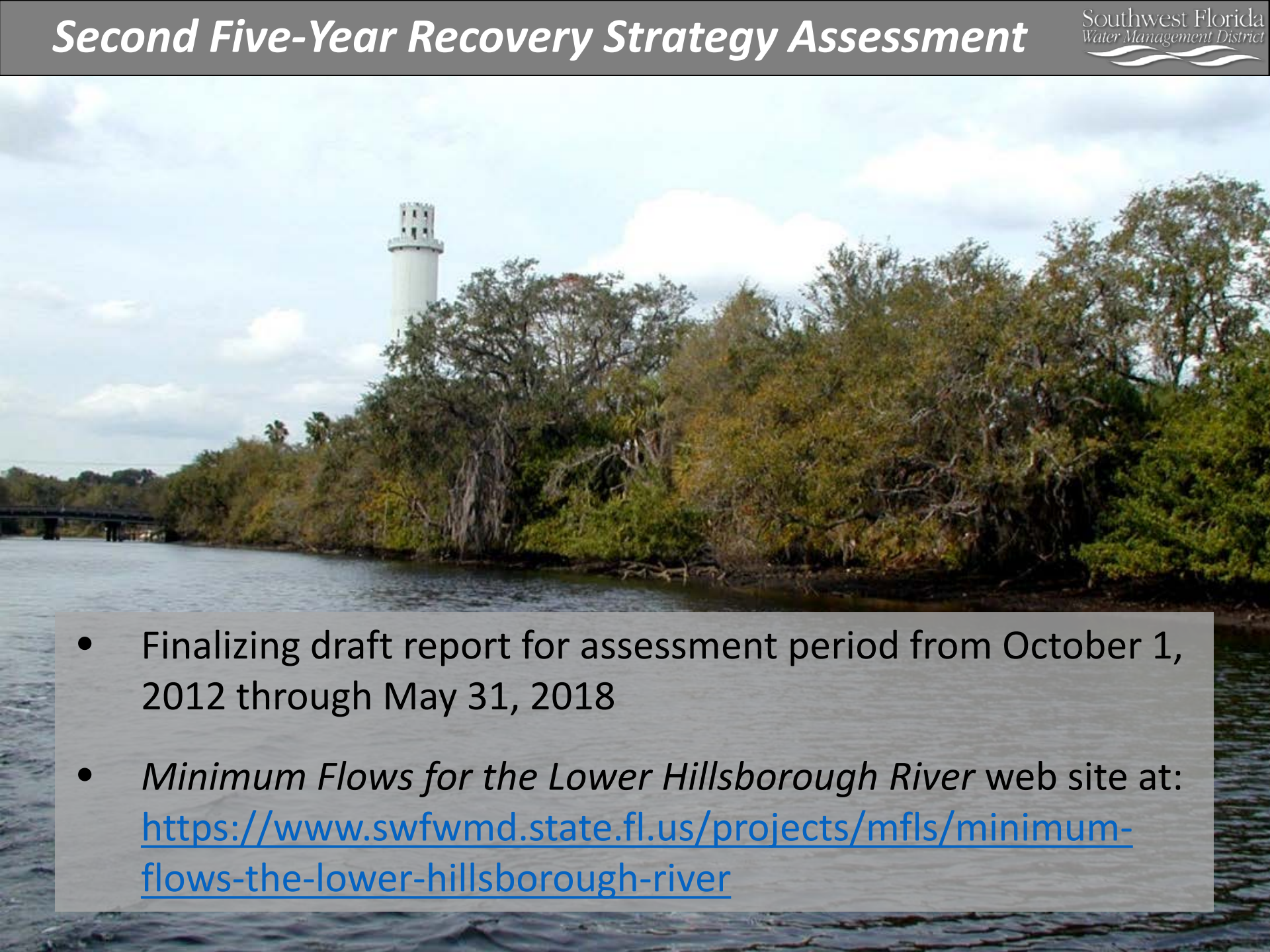
David L. Tippin Water Treatment Facility



Lower Hillsborough River Minimum Flows and Recovery Strategy



- Minimum flows and recovery strategy adopted in 2000
- Reevaluated and revised in 2007
- Five-year recovery strategy assessments required in 2013, 2018 and 2023

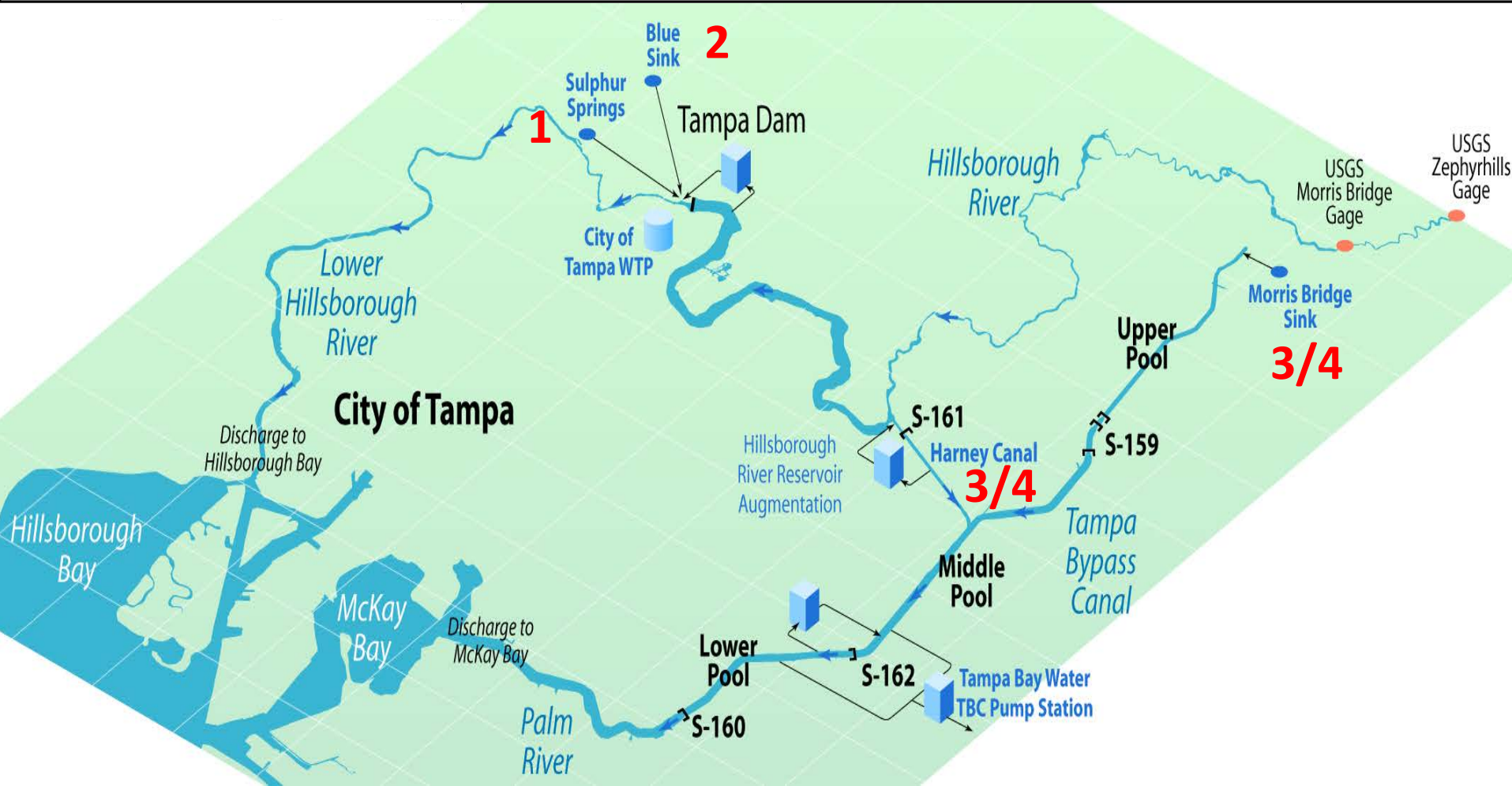
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- Finalizing draft report for assessment period from October 1, 2012 through May 31, 2018
 - *Minimum Flows for the Lower Hillsborough River* web site at: <https://www.swfwmd.state.fl.us/projects/mfls/minimum-flows-the-lower-hillsborough-river>

Lower Hillsborough River Minimum Flows

- Based on extending a salinity range <5 ppt from the Hillsborough River Dam toward Sulphur Springs
- 20 cfs (July 1- March 31); and 24 cfs (April 1-June 30) freshwater equivalents
- Flows adjusted downward when upstream river flow at Zephyrhills is < 58 cfs



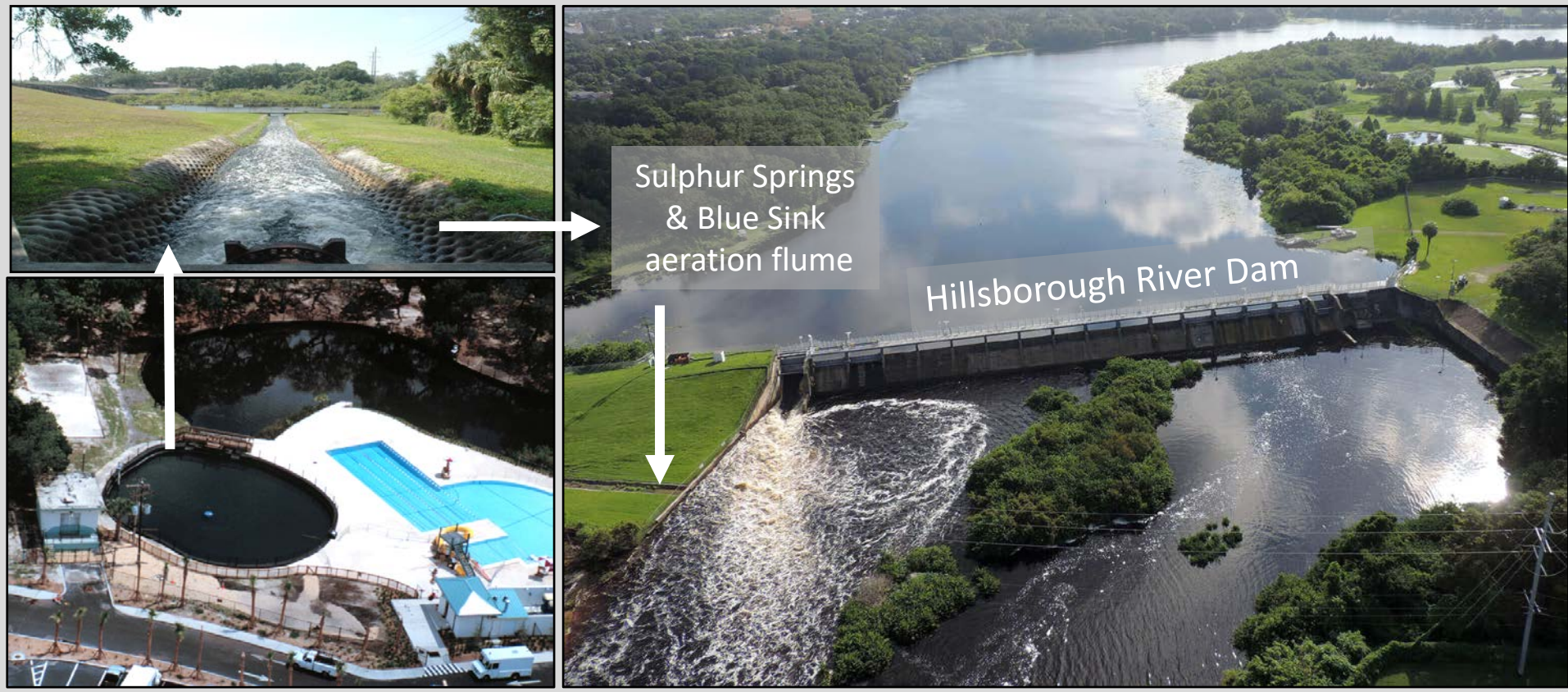
Recovery Strategy Sources



1. Sulphur Springs (up to 18 cfs)
2. Blue Sink Project (up to 3.1 cfs)
3. Transfers from Tampa Bypass Canal (up to 11 cfs)
4. Morris Bridge Sink (up to 6 cfs)

Sulphur Springs

- Sulphur Springs is ~2.2 river miles downstream of the dam
- 10 cfs diverted from Sulphur Springs when needed since 2007 per recovery strategy and spring minimum flows
- New pumping and structure facilities completed in 2012 have allowed increased spring diversions of up to 18 cfs



Blue Sink

- Blues Sink is ~2 miles north of Sulphur Springs
- Permit issued to City of Tampa by District in 2013 allows diversion of up to 3.1 cfs from the sink
- Project became operational in March 2018

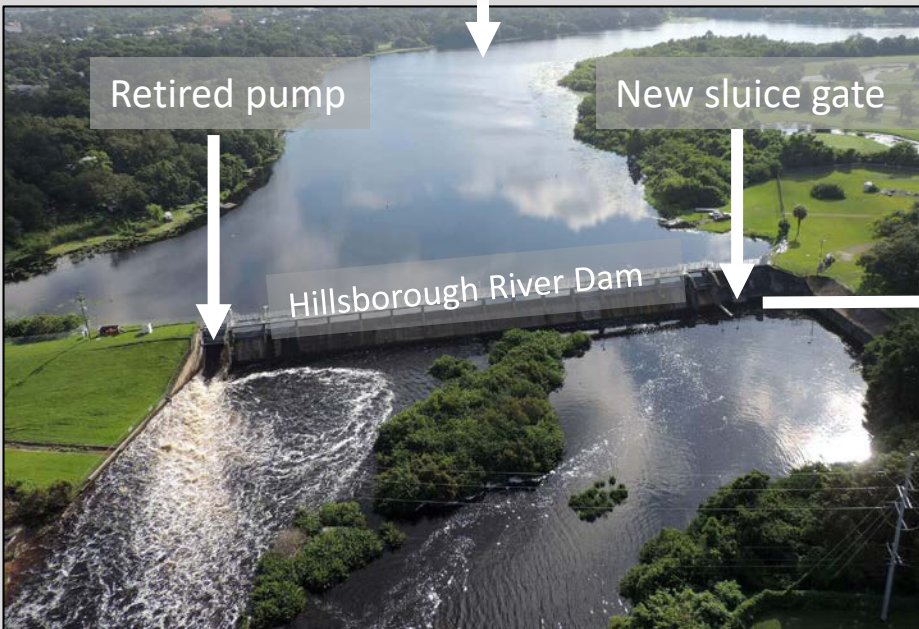


Tampa Bay Bypass Canal



Tampa
Bypass Canal

- Diversions from canal through reservoir at S-161 and over the dam initiated by District in late-2007
- City of Tampa assumed operations at dam and S-161 in late-2017; District operates at S-162
- Sluice gate at dam replaced pumps in 2018; first used in 2019
- 11 cfs diverted from canal and 8.3 cfs (75%) diverted past the dam



Retired pump

New sluice gate

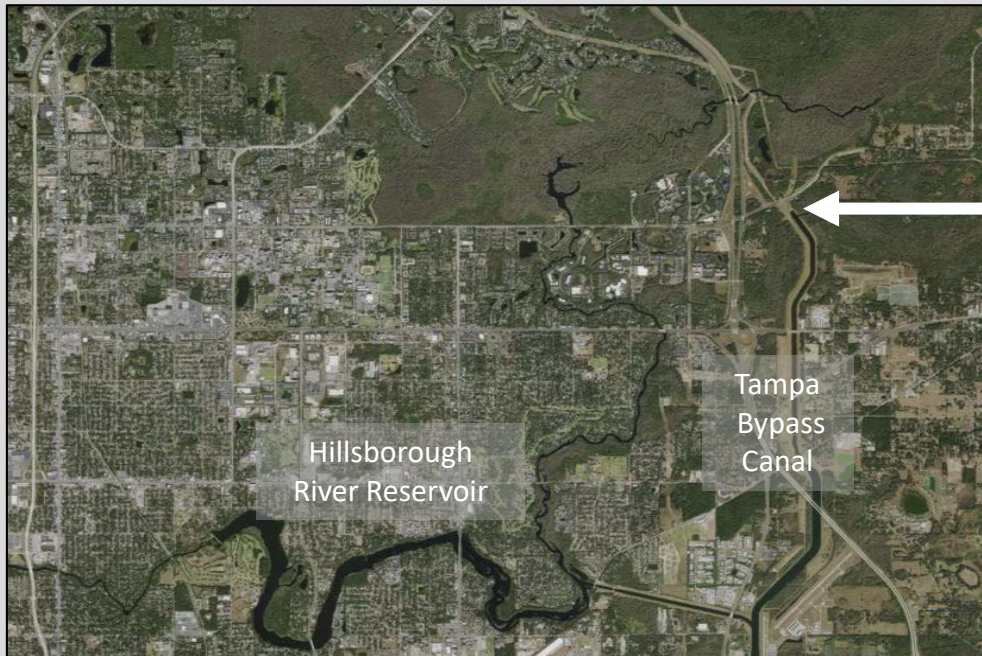
Hillsborough River Dam



New sluice gate

Morris Bridge Sink

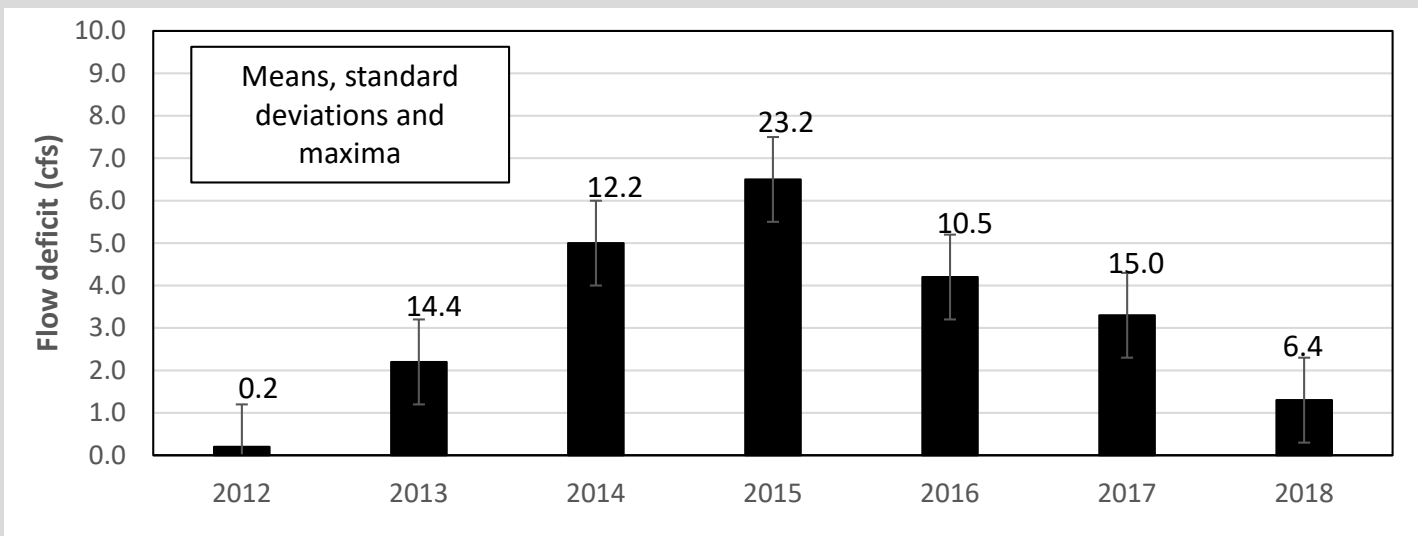
- Sink is located ~ 0.75 miles northeast of upper end of the Tampa Bypass Canal
- Permit issued to District by Florida Department of Environmental Protection in 2016 allows diversion of up to 6 cfs from the sink
- Water to be diverted through the canal and reservoir to the lower river
- Permanent pumping facilities planned but not constructed



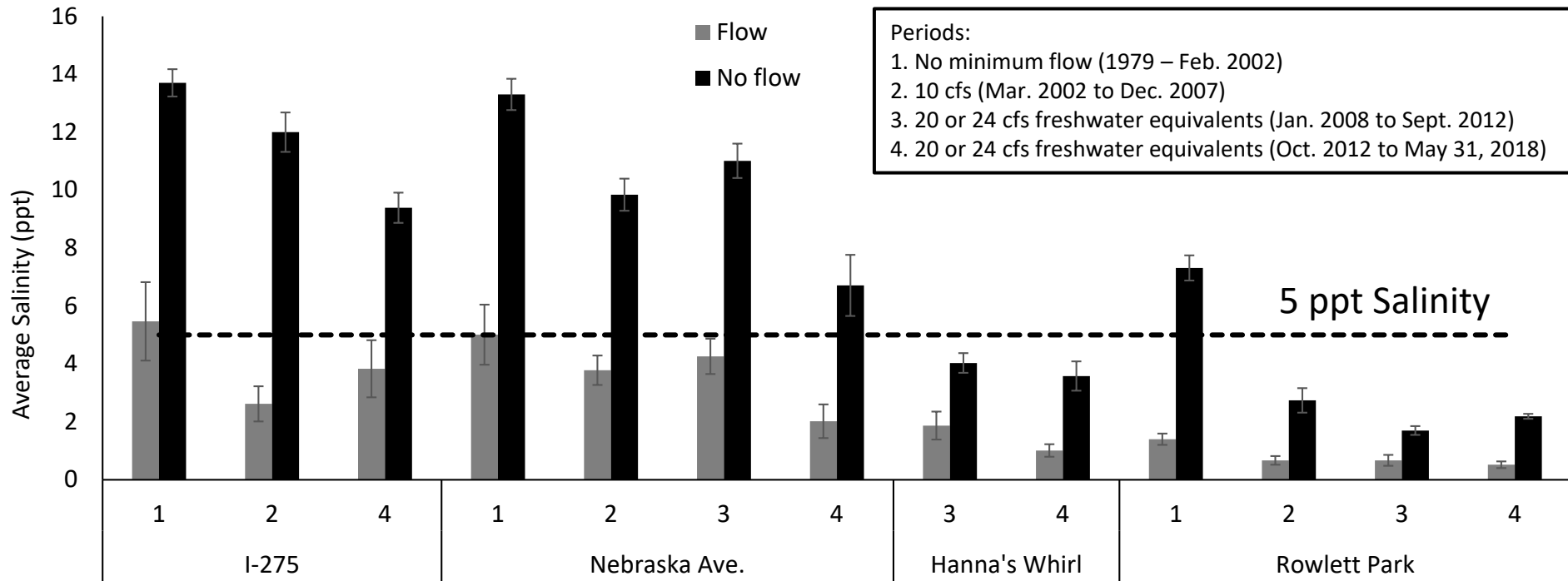
Minimum Flows Status

Year	Days with Missing Data	Days Minimum Flow Achieved	Days Minimum Flow Not Achieved	Percent-Days Minimum Flows Achieved
2012	0 of 92*	91	1	99
2013	1 of 365	328	36	90
2014	4 of 365	338	23	94
2015	27 of 365	286	52	85
2016	15 of 366	315	36	90
2017	5 of 365	299	61	83
2018	0 of 151*	126	25	83
TOTALS	52 of 2,069	1,783	234	88

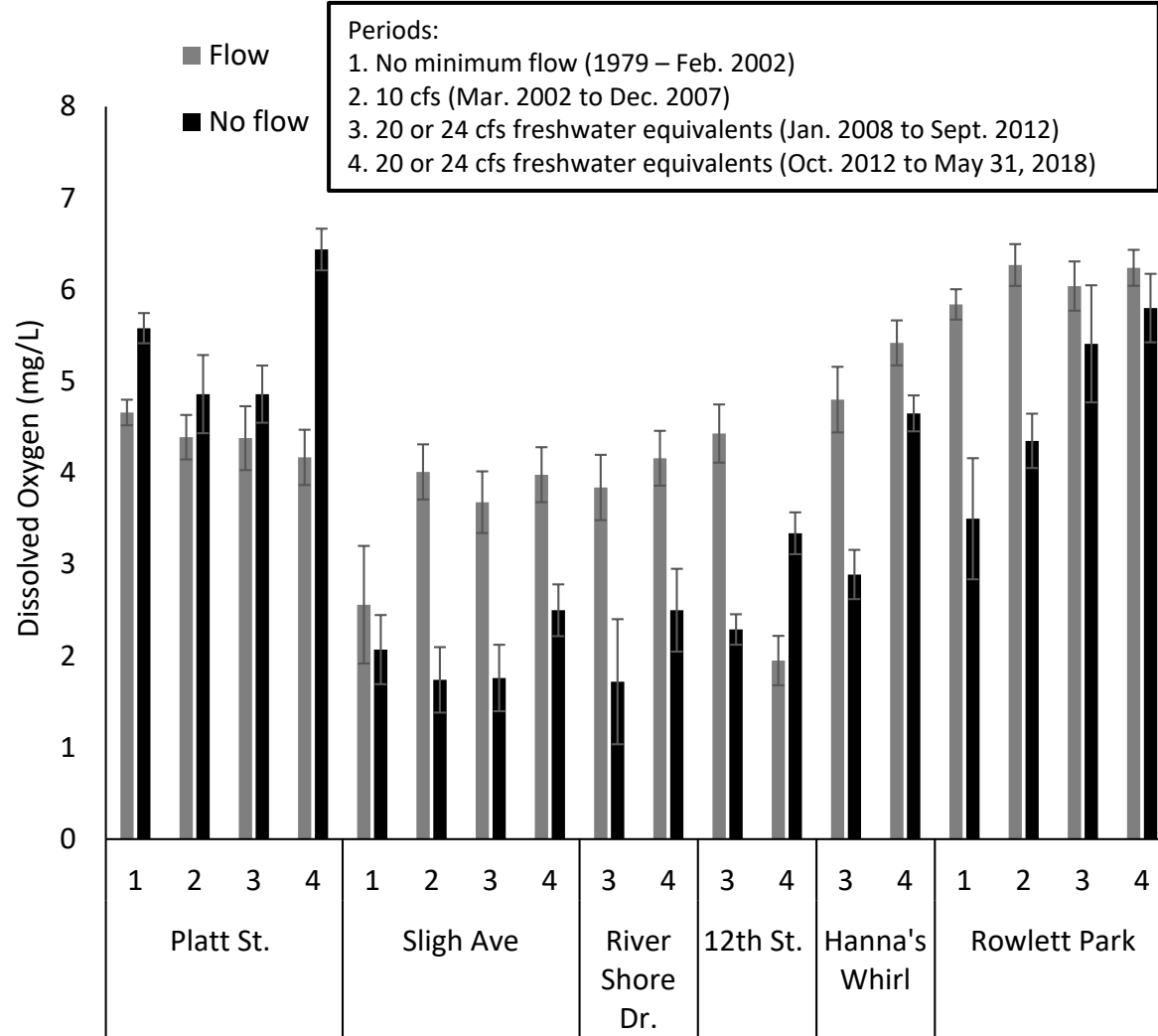
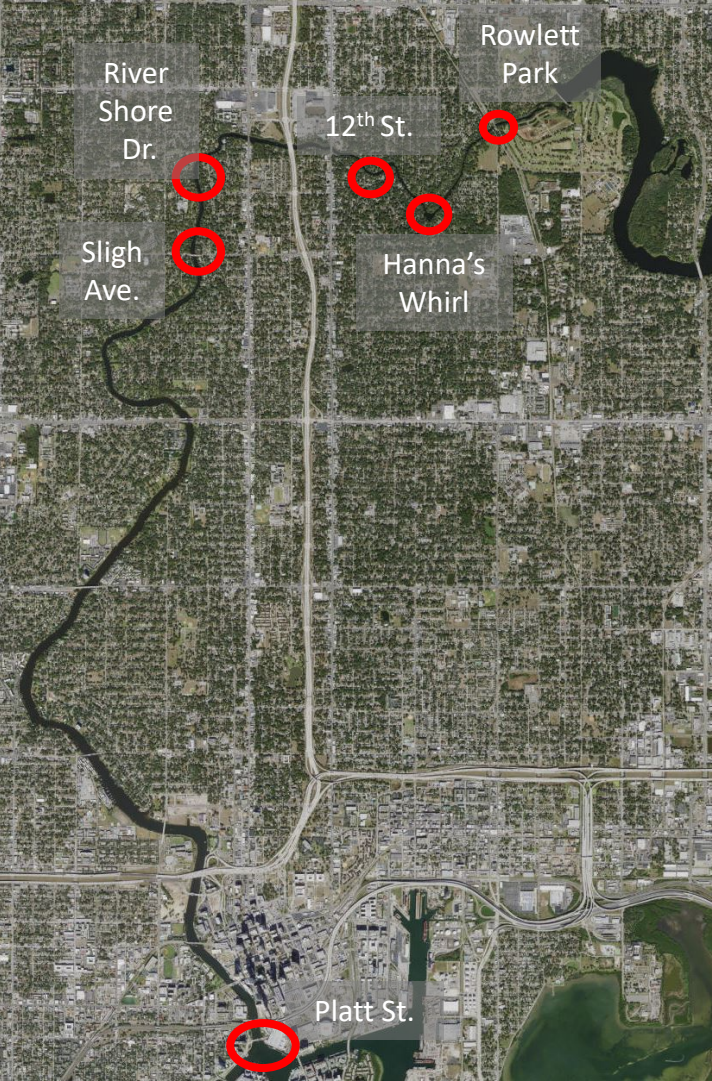
* Full years not assessed



Salinity With and Without Water Flowing at Dam



Dissolved Oxygen With and Without Water Flowing at Dam



Biological Results

- Zooplankton: Increased abundance of taxa indicative of spring-dominated estuaries; increase in oligotrophic indicator species
- Nekton: Apparent reduced abundance of some marine taxa and increased abundance of some freshwater taxa (e.g., largemouth bass)
- Benthic macroinvertebrates: Increased densities and taxon richness



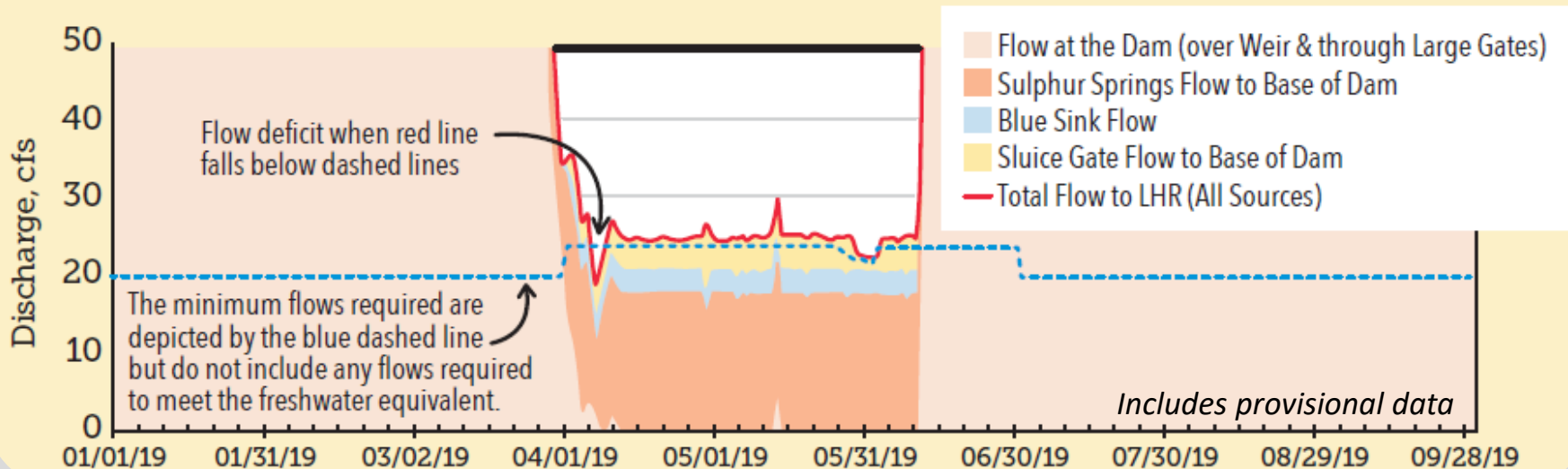
- Second of three five-year assessments nearing finalization
- All specific recovery-sources identified in the strategy now available
- Minimum flow met 88% of the 2,069 assessed days from October 2002 through May 2018
- Extension of <5 ppt salinity zone towards Sulphur Springs has occurred with recovery strategy implementation
- Biological communities indicative of improved low-salinity conditions



Ongoing and Planned Activities

- Annual status assessments (ongoing)
- Completion of second (ongoing) and third five-year assessments (2023)
- Biological sampling during spring and fall (planned for 2020 through 2023)
- Assessment of sustainable use of Sulphur Springs as a recovery-flow source (tentatively planned for 2022)
- Water quality and flow monitoring (ongoing)
- Working with City of Tampa on improved data-reporting methods to support timely status assessments

Lower Hillsborough River MFLs Flow Status (1/1/2019 - 9/30/2019)





Questions / Discussion

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Back-up Slides

Sulphur Springs Minimum Flows

- Sulphur Springs minimum flows must be met before spring water can be used for Lower Hillsborough River recovery
- Operational issues regarding use of spring water for river recovery affected minimum flow status for Sulphur Springs in 2018
- The District and City of Tampa are investigating these issues



Transmission Pipeline Project

- Pipeline from Tampa Bypass Canal to City of Tampa Water Treatment Plant with spur to base of the dam
- Proposed to address potential losses as water from the canal to the dam
- Peer-review panel concluded loss from system is minor; project no longer considered viable for recovery

