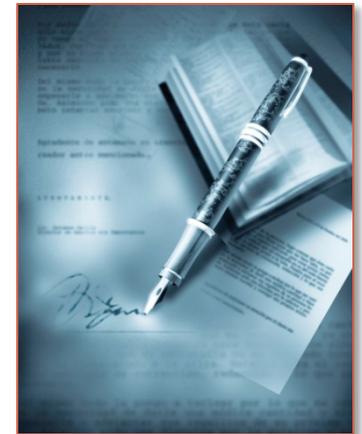


Water Quality Monitoring & the Settlement Agreement: December 2012

1

PETER RAWLIK
LEAD ENVIRONMENTAL SCIENTIST
WATER QUALITY BUREAU



TOC MEETING
DECEMBER 18, 2012

Monitoring is an Adaptive Process

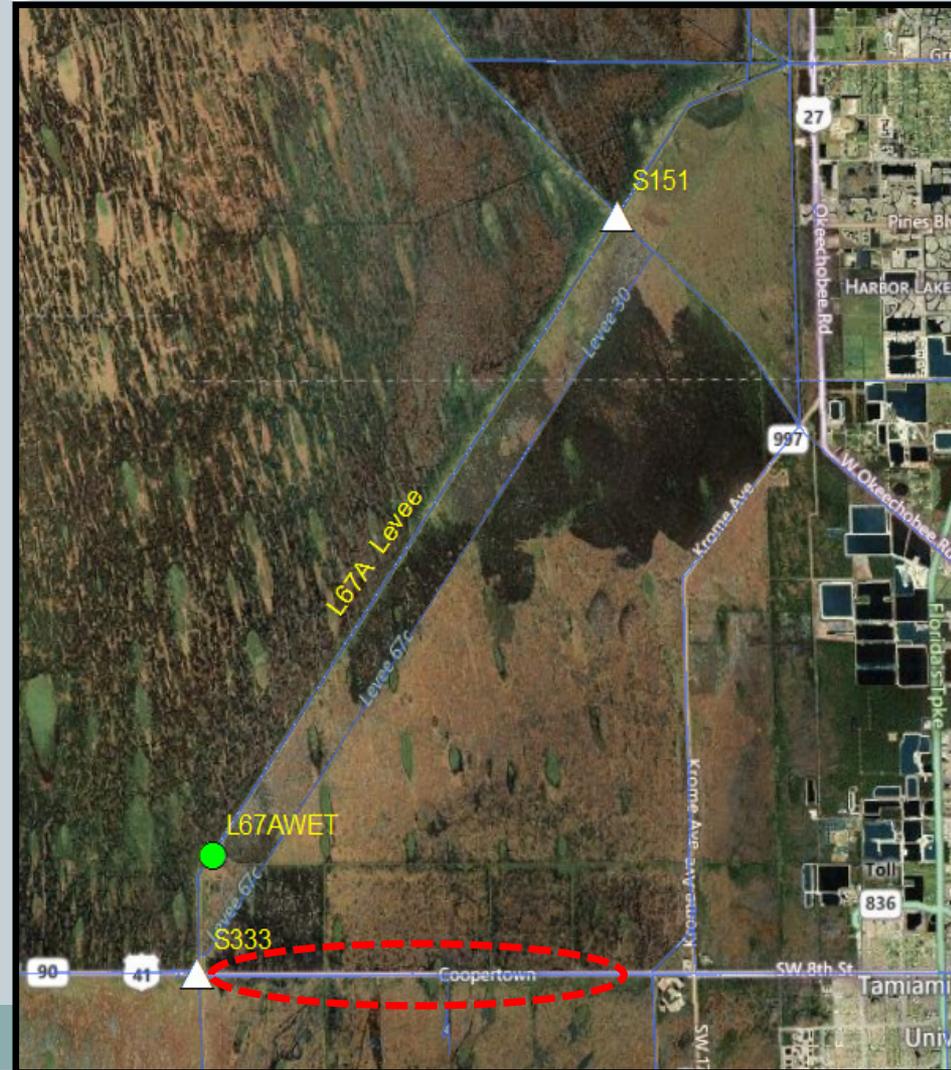
2

- The District monitoring program must adapt to changing infrastructure and mandates
- It is necessary for the TOC to routinely discuss issues impacting monitoring such as:
 - Changes to sampling or analysis methodologies
 - Temporary construction and maintenance impacts
 - Mandate changes that result in conflicting or inefficient monitoring requirements
 - Changes to the structures that discharge to the Everglades Protection Area (EvPA)
- These discussions are key to providing quality data that meets obligations

Ongoing Construction Issue

3

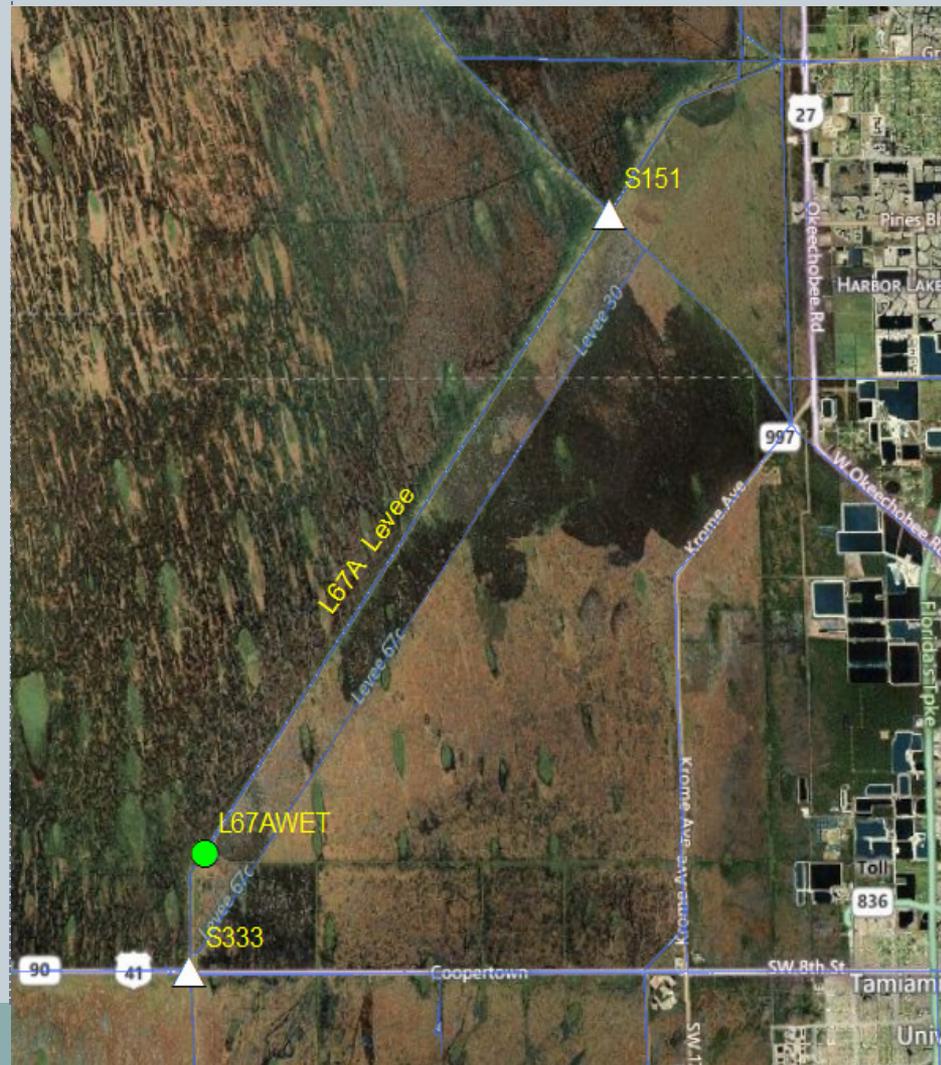
- Suspending monitoring of Tamiami Trail Culverts (10) between S333 and S334
 - Bridge construction has limited access and created significant safety hazards
 - Not part of compliance calculation, and this monitoring will not be impacted
 - Not considered part of Settlement Agreement
 - Will restart once construction allows



Ongoing Construction Issue

4

- Suspending sampling of rain at L67AWet
- Sampler on L67A levee between S333 and S151 is in construction zone of S152 for the DECOMP Physical Model
 - Increased traffic on levee has limited access and increased dust
 - Current dry season will minimize data loss
 - Will restart once construction ceases



New STA Permit and Operational Monitoring Program

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New STA permits and operational monitoring strategy overlap with the Settlement Agreement at nine structures

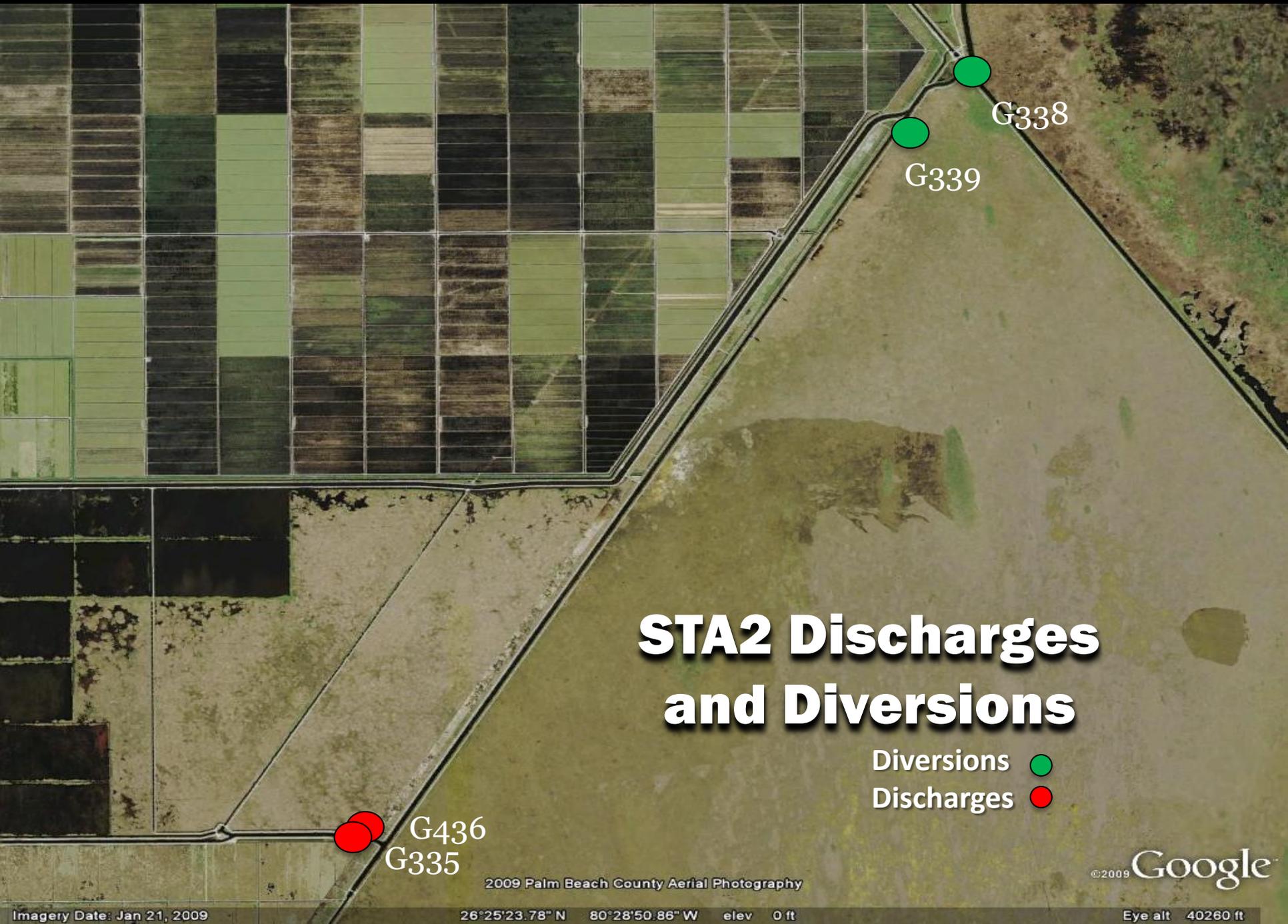
STA Diversions (4)

- STA1: G300 and G301
- STA2: G338 and G339

STA Discharges (5)

- STA1E: S362
- STA1W: G310 and G251
- STA2: G335 and G436





STA2 Discharges and Diversions

Diversions ●
Discharges ●

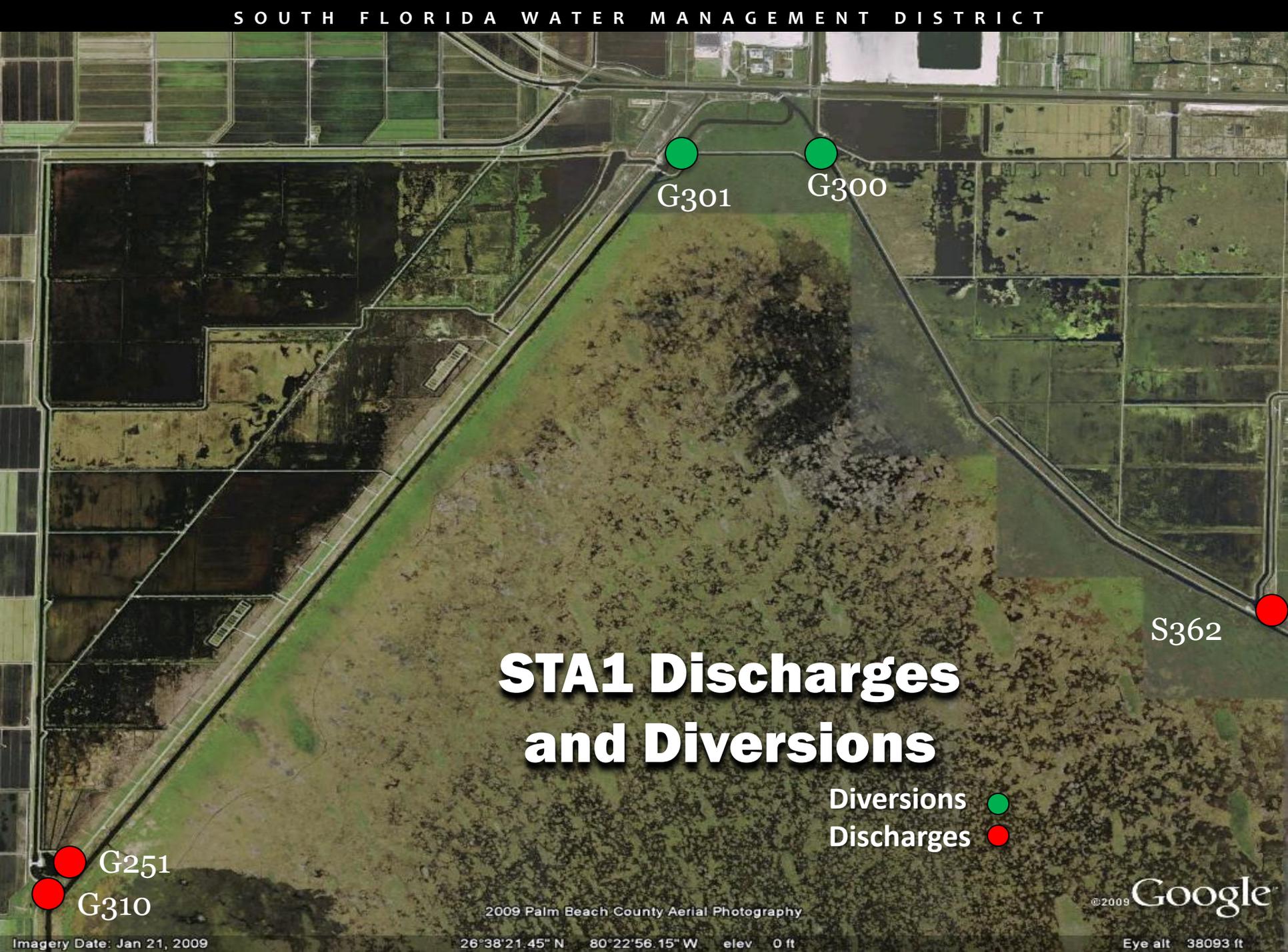
G436
G335

G338

G339

2009 Palm Beach County Aerial Photography

©2009 Google



G301



G300



S362

STA1 Discharges and Diversions

Diversions 
Discharges 



G251



G310

2009 Palm Beach County Aerial Photography

©2009 Google

Imagery Date: Jan 21, 2009

26°38'21.45" N 80°22'56.15" W elev 0 ft

Eye alt 38093 ft

STA Diversions

8

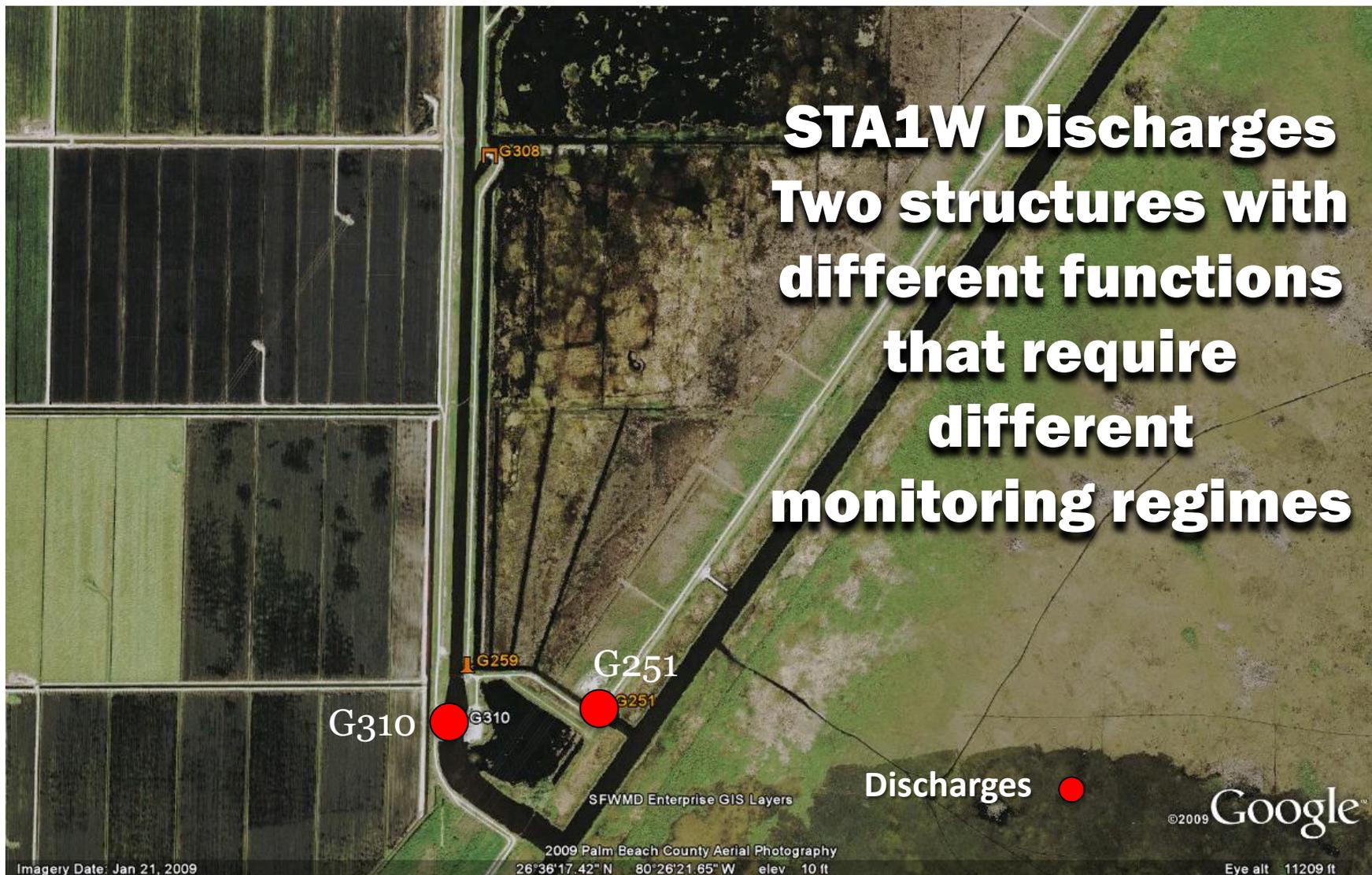
- Monitoring of STA Diversions is mandated by permits
 - Weekly if recorded flow TP
- Previous monitoring at STA 2 Diversions (G338 and G339) used S6 as a surrogate station
- Previous monitoring at STA1 (G300 and G301)
 - Autosampler TP
 - Weekly TP
 - Biweekly TKN, NO_x, SO₄, Alkalinity
- Given the operational guidelines for these structures an autosampler is not warranted

Proposed STA Diversion Monitoring

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STATIONS	EXISTING	PROPOSED
G301 and G302	Autosampler : TP Weekly: TP Biweekly : TKN, NOx, SO4, Alkalinity	Daily if Flow: TP, TKN, NOx, SO4, Alkalinity
G338 and G339	None, S6 data used as a surrogate	Daily if Flow: TP, TKN, NOx, SO4, Alkalinity

**STA1W Discharges
Two structures with
different functions
that require
different
monitoring regimes**



STA Discharges

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- Monitoring at STA discharge locations is mandated by permits
 - Autosampler: TP
 - Weekly Recorded Flow: TP
 - Biweekly Recorded Flow: TKN, NO_x, SO₄, Alkalinity*
- Additional monitoring for operational needs at STA discharge locations is
 - Biweekly Recorded Flow: TDP, OPO₄, NH₄, Cl, Ca, TSS
 - Quarterly: DOC
- For structures that function as both STA discharges and the ends of STA flow-ways, monitoring frequency is increased
 - Autosampler: TP
 - Weekly Recorded Flow: TP, TDP, TKN, NO_x, NH₄, Ca, Cl, SO₄, TSS, Alkalinity
 - Quarterly: DOC

* Alkalinity is only required by the permit at STA 1 Discharge Structures

Proposed STA Discharge Monitoring

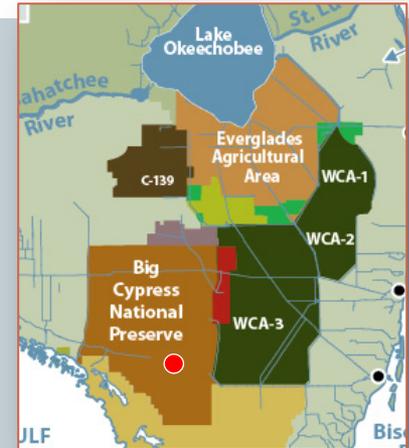
12

STATIONS	EXISTING	PROPOSED
STA1E: S362 STA1W: G310	Autosampler : TP Weekly: TP Biweekly: TDP, TKN, NOx, Ca, Cl, SO4, TSS, Alkalinity	Autosampler : TP Weekly: TP Biweekly Recorded Flow : TDP, OPO4, TKN, NOx, NH4, Ca, Cl, SO4, TSS, Alkalinity Quarterly: DOC
STA2: G335 STA2: G436	Autosampler: TP Weekly Recorded Flow: TP Biweekly Recorded Flow : TDP, OPO4, TKN, NOx, NH4, Ca, Cl, SO4, TSS, Alkalinity Quarterly: DOC	Autosampler : TP Weekly: TP Weekly Recorded Flow: TDP, OPO4, TKN, NOx, NH4, Ca, Cl, SO4, TSS, Alkalinity Quarterly: DOC
STA1W: G251	Autosampler : TP Weekly: TP Biweekly: TDP, TKN, NOx, Ca, Cl, SO4, TSS, Alkalinity	Autosampler : TP Weekly: TP Weekly Recorded Flow: TDP, OPO4, TKN, NOx, NH4, Ca, Cl, SO4, TSS, Alkalinity Quarterly: DOC

Structures Outside of the Everglades Protection Area

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- TAMBR105 is not in the EvPA, but rather within Big Cypress National Preserve
- TAMBR105 is not part of any compliance calculation
- BCNP has a robust monitoring program that it manages in cooperation with the SFWMD
- The SFWMD suggests that the sampling of TAMBR105 be integrated with the BCNP program
 - Allow BCNP staff to determine need, sampling frequency, and parameters at this station



BCNP Monitoring along the Loop Road

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Parameters

DO

pH

Temperature

Specific
ConductanceTPO₄OPO₄

TKN

Nox

NO₂NH₄

Na

K

Ca

Mg

Cl

SiO₂SO₄

Hardness

Alkalinity

TDS

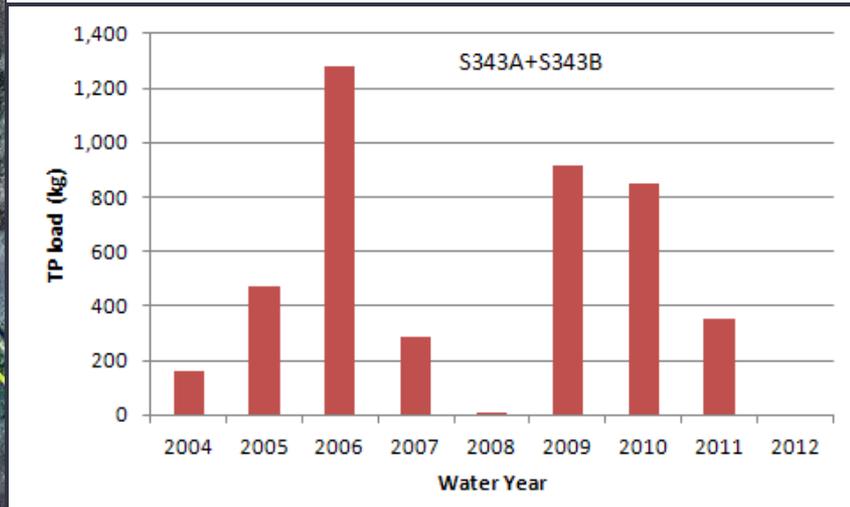
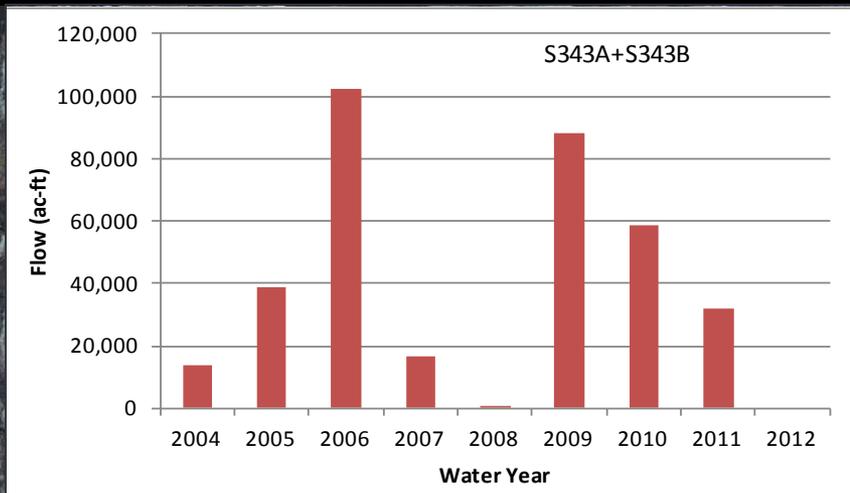
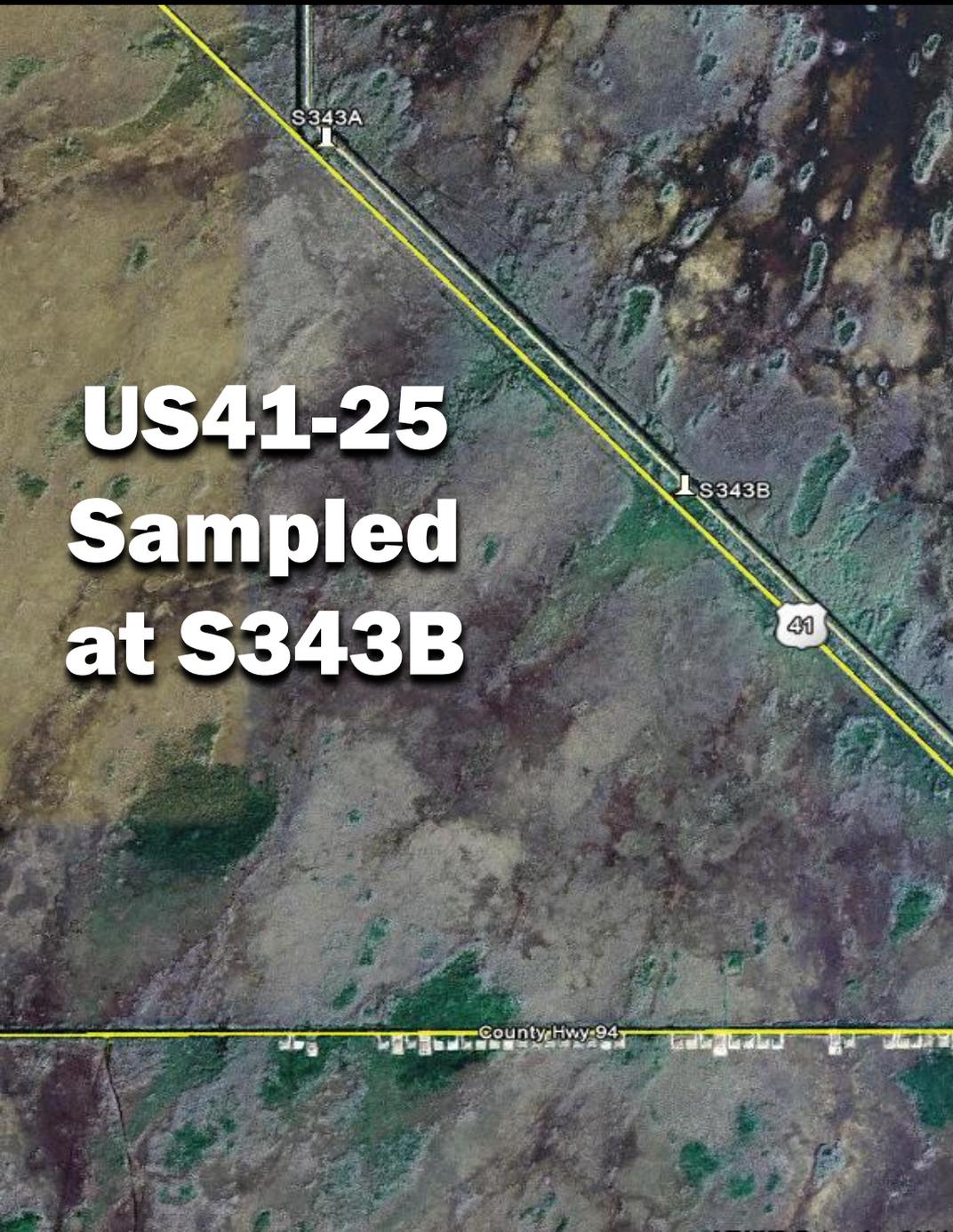


Request Change to Monitoring at US41-25

15

- Request elimination of monitoring at US41-25 (S343A and B)
 - Small set of culverts west of S12A
 - Discharge from WCA3A to BCNP, not used in flow calculation
 - Low Flow
- Suggest the use of S12A water quality data as a surrogate
 - Analysis shows relative difference between the mean TP data at US41-25 and S12A is 14%

US41-25 Sampled at S343B

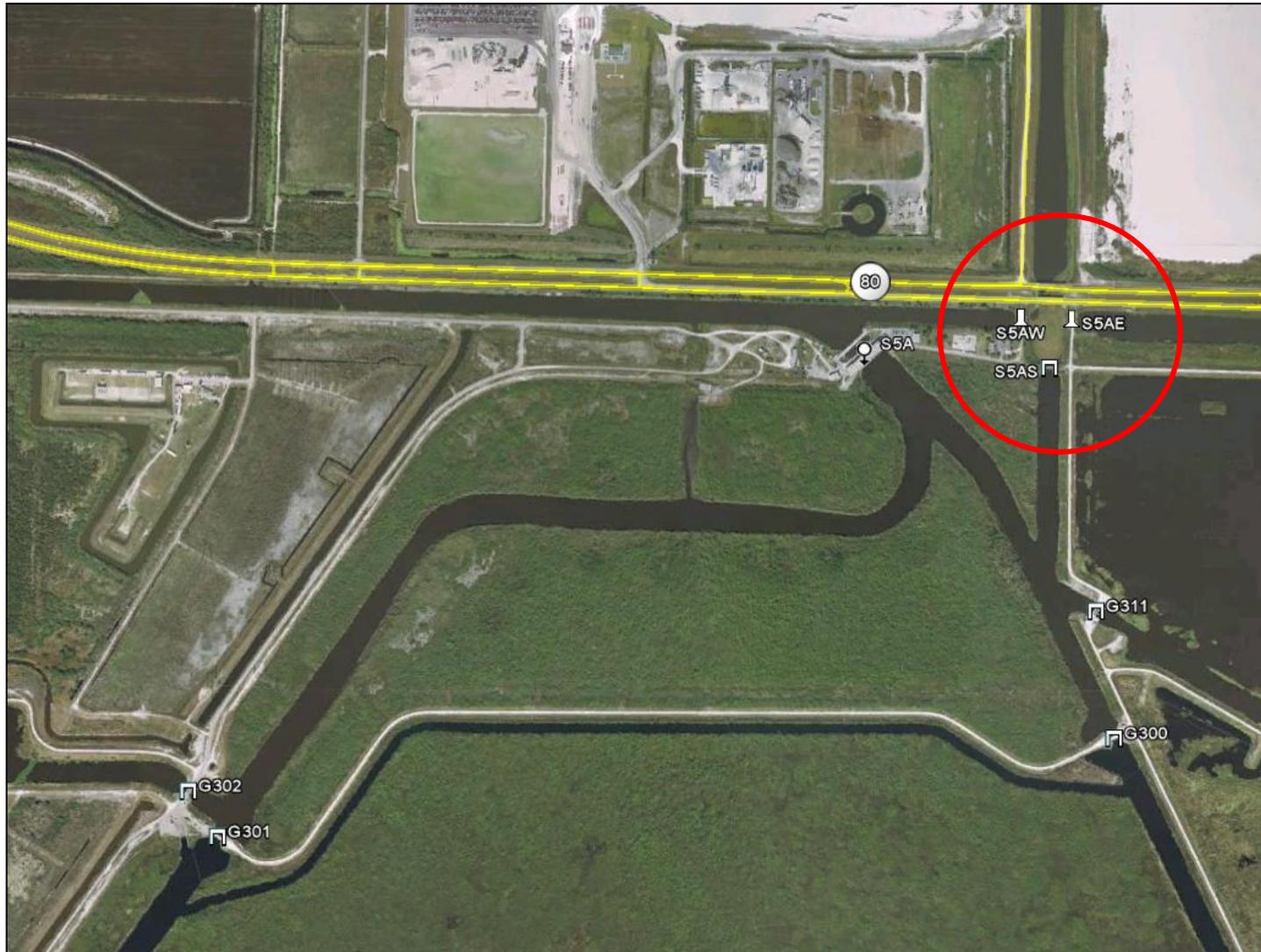


Structures no longer part of the Settlement Agreement

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- The construction of the S5A Distribution Basin and G300 and G301 prevents multiple structures from discharging into the EvPA
 - S5AS, S5AE, S5AW
- These structures have been superseded and should no longer be subject to TOC oversight

S5A Distribution Basin



Long Term Request

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- Meet to collaboratively review a Settlement Agreement current monitoring inventory
 - ✓ Document existing program
 - ✓ List structures and marsh stations
 - ✓ List parameters and sampling frequencies



Requests for Immediate TOC Action:

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- Acknowledge suspension of L67A Rainfall sampler
- Eliminate autosamplers at G300 and G301, and for all STA1 and STA2 diversion structures use event-driven daily grabs
- Accept monitoring plan for STA1 and STA2 discharges
- Transfer oversight of Tambr105 to BCNP
- Consider use of S12A data as a surrogate for monitoring US41-25
- Acknowledge that S5AS, S5AW, and S5AE are no longer subject to TOC oversight

Questions?

