

# Recommendations to the TOC concerning monitoring for the Settlement Agreement

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For the Water Quality Monitoring Subteam

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# Water Quality Subteam

## Met to Address Multiple Complex Issues

- Atmospheric Deposition
- Pesticides Monitoring
- Structure monitoring
  - S6 and associated structures
  - S5A and associated structures
- Sample processing time (SFWMD still developing support document)

In the process, the team identified two other topics

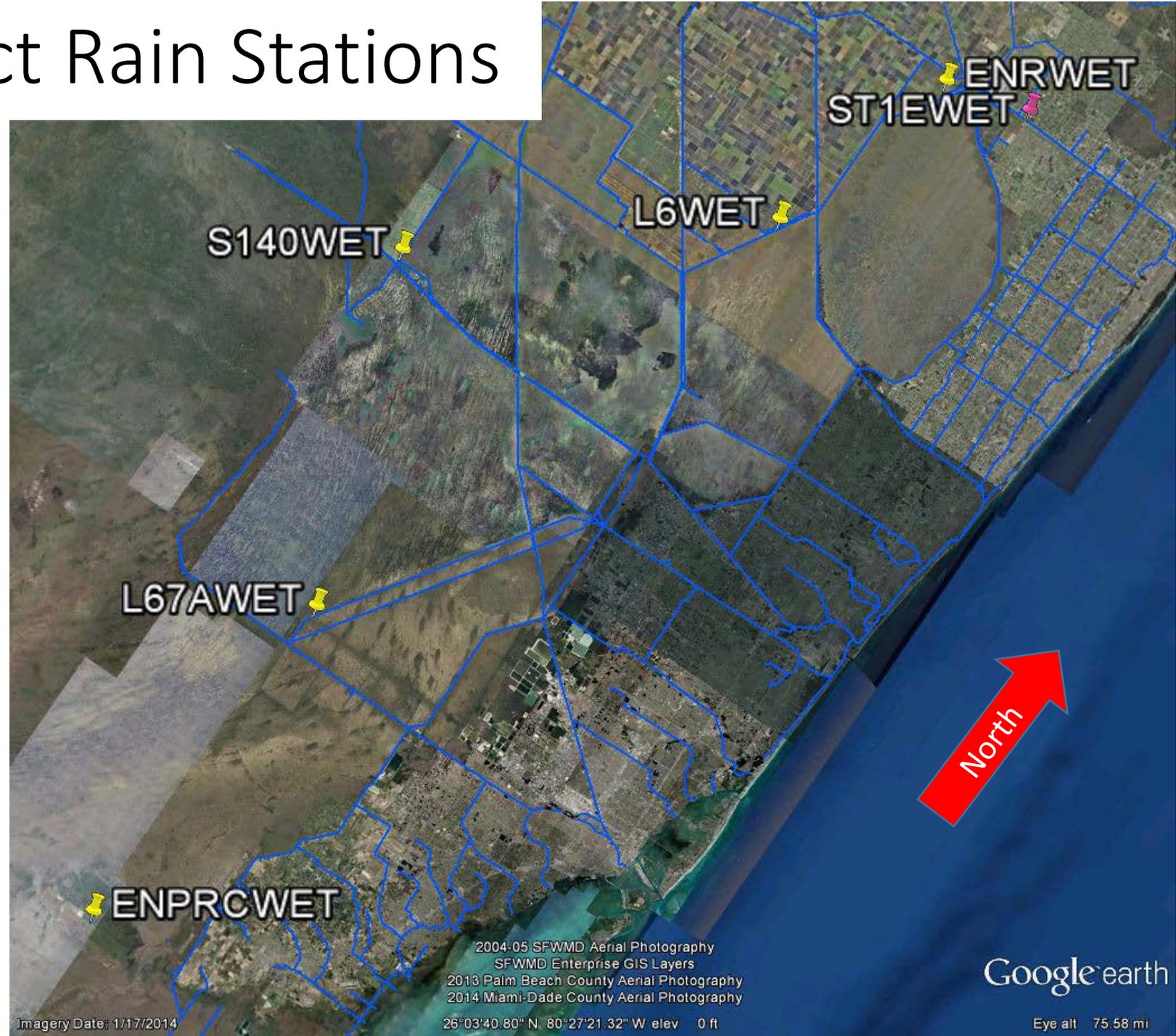
- Monitoring for ions at STA discharges
- Monitoring of Copper and Iron at S6 and S5A

Subteam process was successful in reaching compromise and consensus

# Atmospheric Deposition Monitoring

- “Atmospheric deposition will be monitored at selected sites in the EAA, WCAs, the Refuge, and the Park.”
- This program monitors nutrient and ion content in rainfall, and is distinct from programs that monitor rain volume and mercury deposition.
- Five existing stations
  - ENP, L67A, S140, L6, and ST1E (replaces ENR)
  - Weekly monitoring is FTE intensive

# Project Rain Stations



Imagery Date: 1/17/2014

2004-05 SFWMD Aerial Photography  
SFWMD Enterprise GIS Layers  
2013 Palm Beach County Aerial Photography  
2014 Miami-Dade County Aerial Photography

26°03'40.80" N 80°27'21.32" W elev 0 ft

Google earth

Eye alt 75.58 mi

# Basic TP (ug/L) Stats for Rain Jan 2011 to Dec 2015

| Site     | Minimum | Maximum | Average | N  |
|----------|---------|---------|---------|----|
| ENPRCWET | <2      | 72      | 5       | 59 |
| ENRWET   | <2      | 154     | 8       | 57 |
| L67AWET  | <2      | 145     | 6       | 63 |
| L6WET    | <2      | 170     | 12      | 37 |
| S140WET  | <2      | 3461    | 87      | 59 |
| S140WET* | <2      | 66      | 8       | 57 |

\*S140WET statistics recalculated with 2 data points removed

# Efficacy Report for Atmospheric Deposition

- Since January 2011 each station had the potential for 260 events
- Average is 55 (37-63) or
  - 21% (14%-24%)
  - 12 weekly events per year
- On average 140 days of rain per year (40%) or 21 weeks per year (could be more depending on distribution)

# Atmospheric Deposition Monitoring

- Recommendation
  - Eliminate 3 stations (L67A, S140, and ST1E)
  - Maintain 2 stations (ENP and L6), Park staff will assist

# Pesticides

- “Water quality monitoring shall include timely data on . . . pesticides/herbicides, and heavy metals.”
- Quarterly monitoring of 17 stations, 9 overlap with the NECP Permit required pesticide monitoring
- Team reviewed the last ten years of data

# Pesticides Monitoring

- Settlement Agreement
- Settlement Agreement and NECP Permit



# Pesticides

- Recommendation
  - Reduce Settlement Agreement monitoring from quarterly to semi-annually
    - Impacts only 8 stations
    - Remaining 9 stations will be maintained quarterly for the NECP Permit

# Structure Monitoring

- **“In order to adequately assess Refuge and WCA nutrient inputs and outputs and Park nutrient inputs, the monitoring program shall include water quality monitoring of discharges at all **relevant structures . . .**”**
- Expansion of Settlement Agreement monitoring to five new STA discharges into WCA1 and WCA2 has previously been formalized
- Monitoring of Diversion Structures for the Settlement Agreement had not been discussed

# Structure Monitoring: Diversion Structures

- Four diversion structures have not been specified
  - G300 and G301 discharge into WCA1
  - G338 and G339 discharge into WCA1 and WCA2A, respectively
- Permits require weekly if flowing  $\text{TPO}_4$  only



## S5A and Associated Structures



## S6 and Associated Structures

# Structure Monitoring: Diversion Structures

- Recommendations
  - Weekly if flowing
    - Physical parameters (DO, pH, SCond, Temperature)
    - $\text{TPO}_4$ ,  $\text{OPO}_4$ ,  $\text{TDPO}_4$ , Alka, Ca, Cl, Na, K, Mg,  $\text{SO}_4$ , TN,  $\text{NO}_x$ ,  $\text{NH}_4$ , TSS

# Discussion of Other Issues

- The following issues will be discussed at future subteam meetings
  - Monitoring at S6, S5A and the S5A complex
  - Monitoring of ions at the STA discharges
  - Monitoring of metals
  - Processing time changes

# Recommendations to the TOC for Approval

- Eliminate three Atmospheric Deposition Stations leaving two sites at L6 and ENP operational
- Reduce monitoring for pesticides from quarterly to semi-annually
- Establish the proposed monitoring frequency and parameter list at Diversion Structures G300, G301, G338 and G339
- Continue with subteam process to examine other issues

# Discussion

