

Summary of STA Diversions Tropical Storm Andrea June 7 – 13, 2013

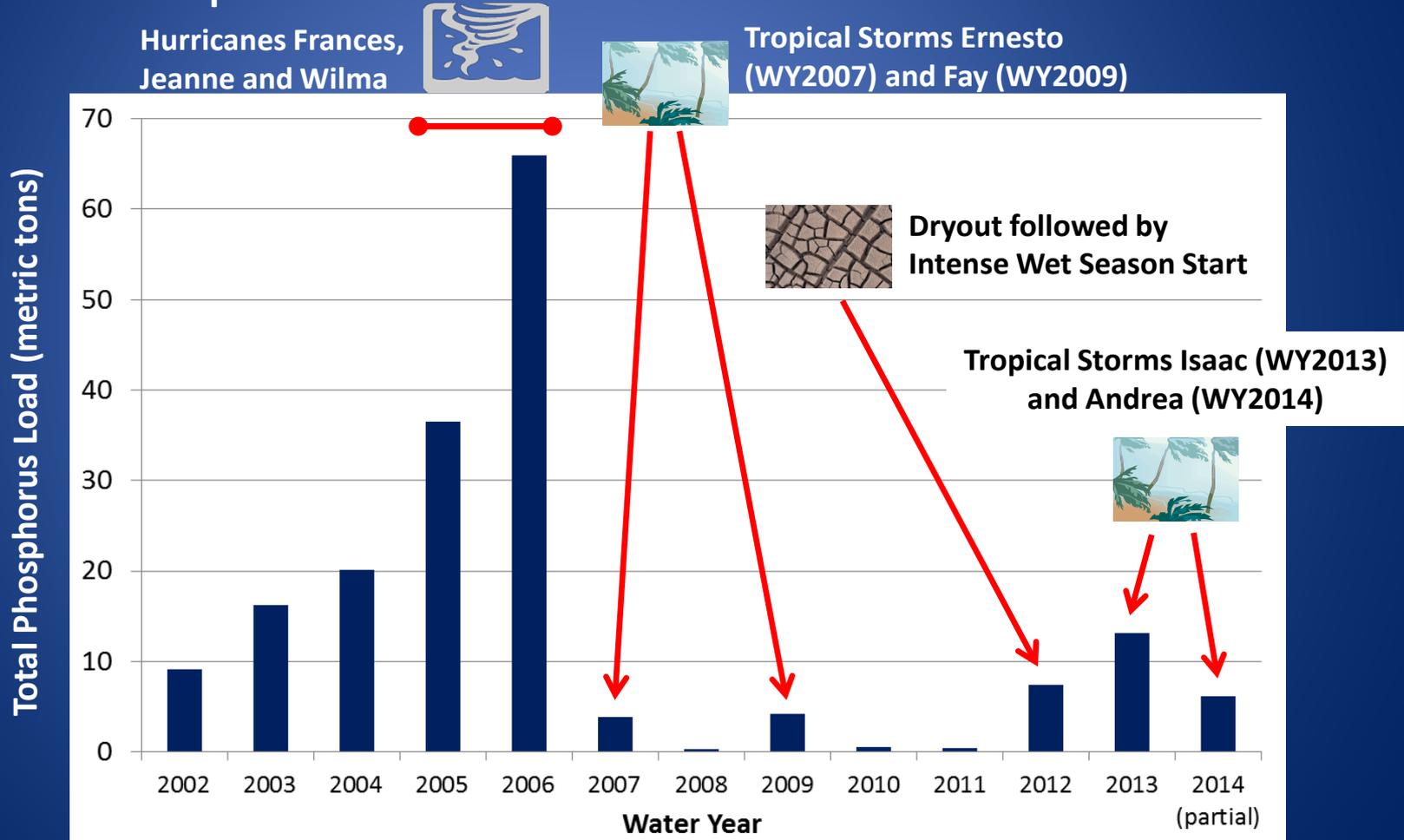
Quarterly Long-Term Plan for Achieving Water Quality Goals for
Everglades Protection Area Tributary Basins

August 23, 2013

Lawrence Gerry, Everglades Policy and Coordination, SFWMD

STA Diversions

Total Phosphorus Load – All STAs combined



STA Diversions

- Defined as the delivery of surface water to the Everglades Protection Area without entering the treatment works
- May occur under one or more of the following scenarios:
 - maintenance
 - flood control
 - to avoid substantial damage to the treatment facilities
 - to address conflicts with the Endangered Species Act
 - to address conflicts with the Migratory Bird Treaty Act
 - for low flow water supply purposes
- Not permitted for the purposes of achieving STA compliance

Factors Considered

- Consider all other options for redirecting flow
- Potential for flooding
- Substantial damage to vegetation
- Antecedent rainfall/runoff
- Predicted rainfall
- Depths of water in STAs
- Vegetation conditions: early or late wet season
- Construction activities
- Status of rehabilitation work
- Protected species nesting



Conditions Leading to Tropical Storm Andrea Diversions Eastern Flowpath

STA-1E

- Eastern flowway off-line due to construction (PSTA decommissioning)
- Central flowway restricted 20% due to 2 of 5 culverts under construction and stage restricted due to 3 Snail Kite nests in cell 4N
- Western flowway restricted 30% due to 2 of 6 culverts construction

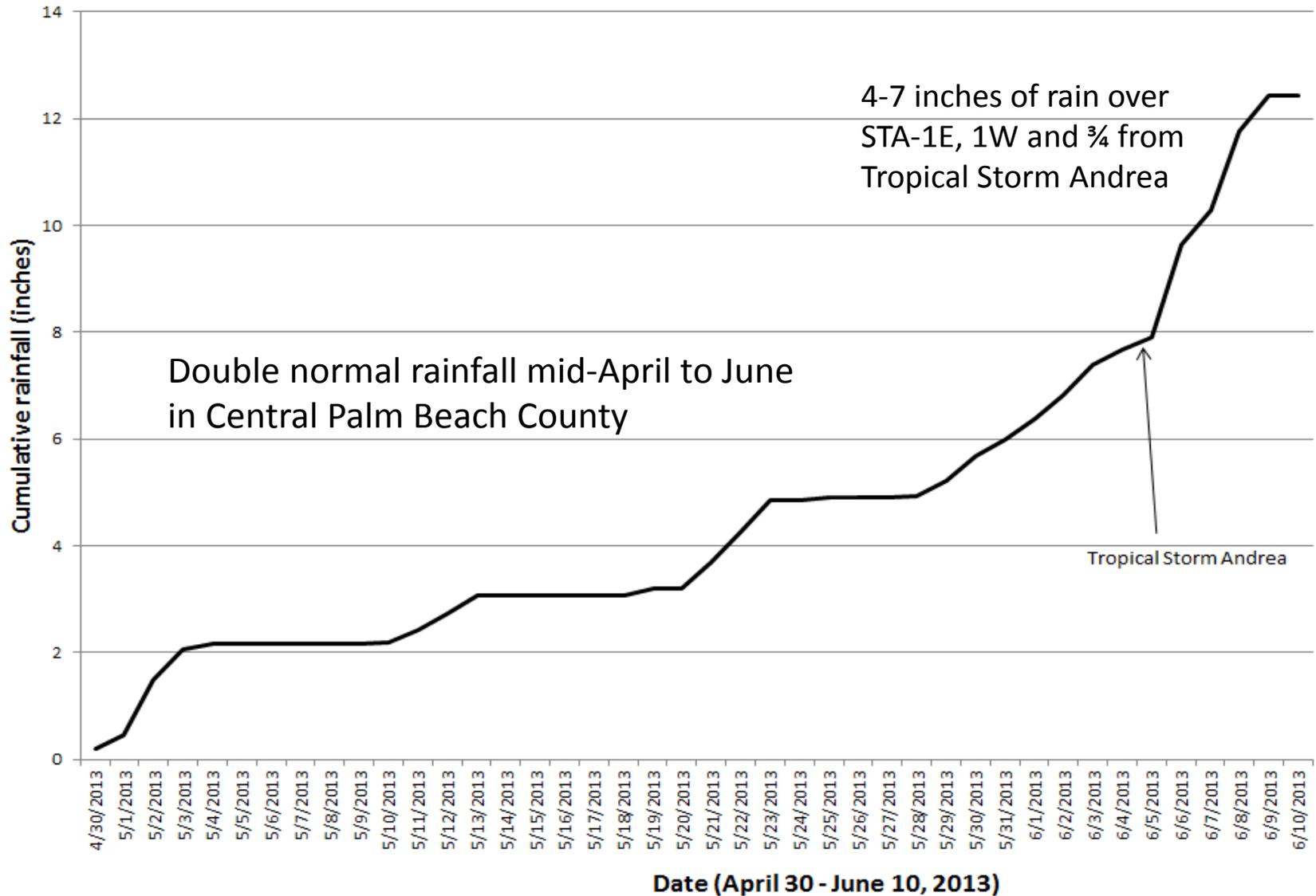
STA-1W

- Western flowway had not performed well since TS Isaac in August-September 2012 (365 day mean outflow TP = 47 ppb)
- Eastern and Northern flowway rehabilitation - 17,000 hours of plantings
- Black-necked stilts nesting in Western flowway

Friday 6/7/13

- Continuous basin runoff during week, stages rising rapidly in STAs to 4 ft. depth, additional basin rainfall predicted.
- In consideration of anticipated runoff and rainfall and to avoid substantial damage to STA-1E and STA-1W at the start of the wet season, partial diversion made through G-300 and G-301.

Cumulative Rainfall in Eastern EAA Rain Area, Rain Gauge Data, April 30 – June 10.



To Tide



Rehabilitation Underway

Poor Performance since TS Isaac
Rehabilitation Underway

STA-1W

S-5A

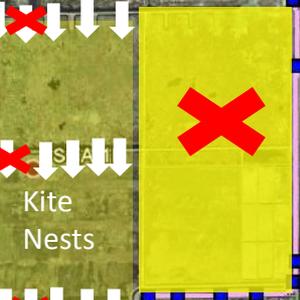
S319

S311

S362

ACME

G310



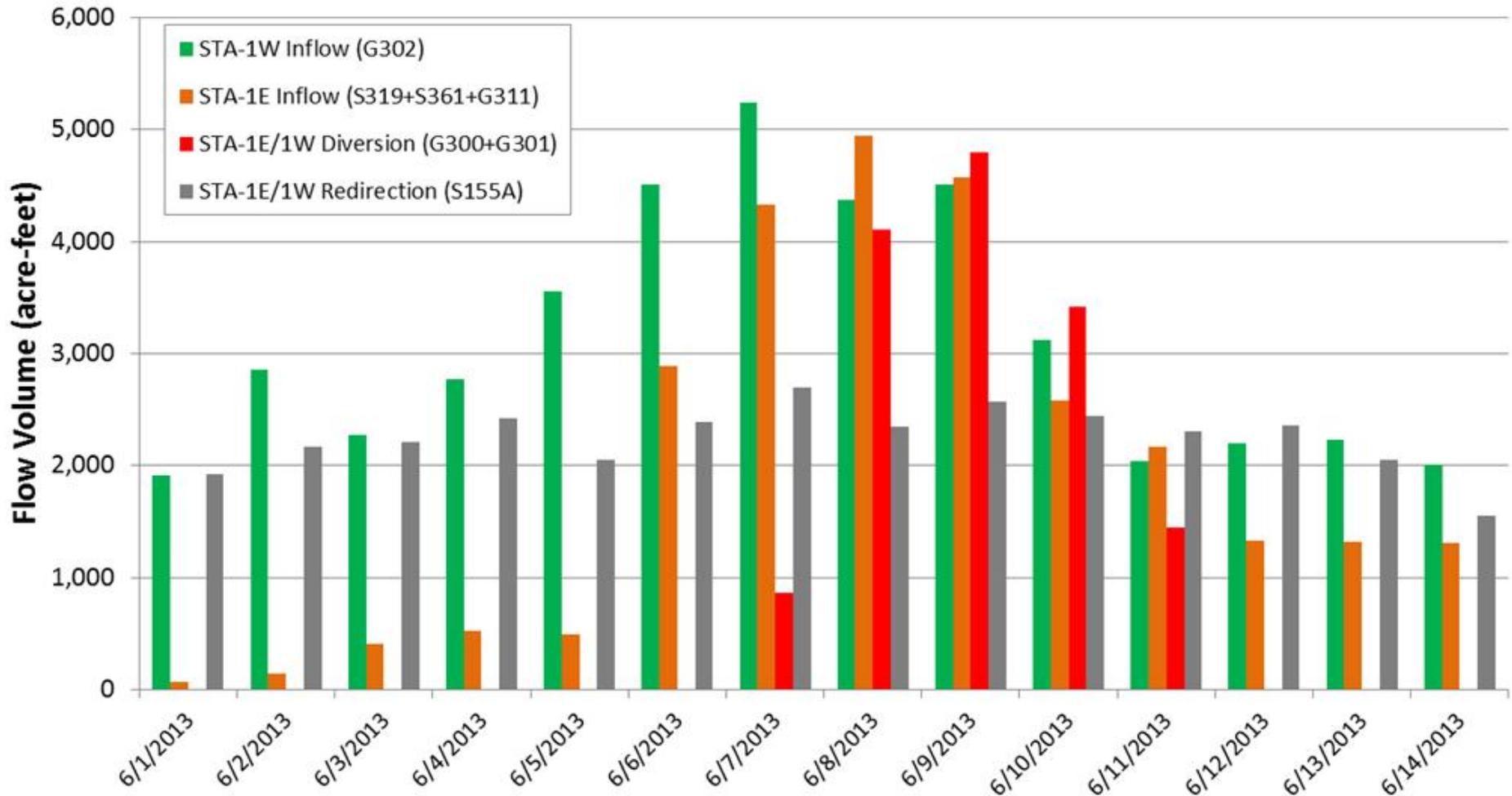
Kite Nests

Conditions at onset of Tropical Storm Andrea

Tropical Storm Andrea

Eastern Flowpath Diversion Summary

STA-1E and STA-1W



Conditions Leading to Tropical Storm Andrea Diversions Central Flowpath

STA-2

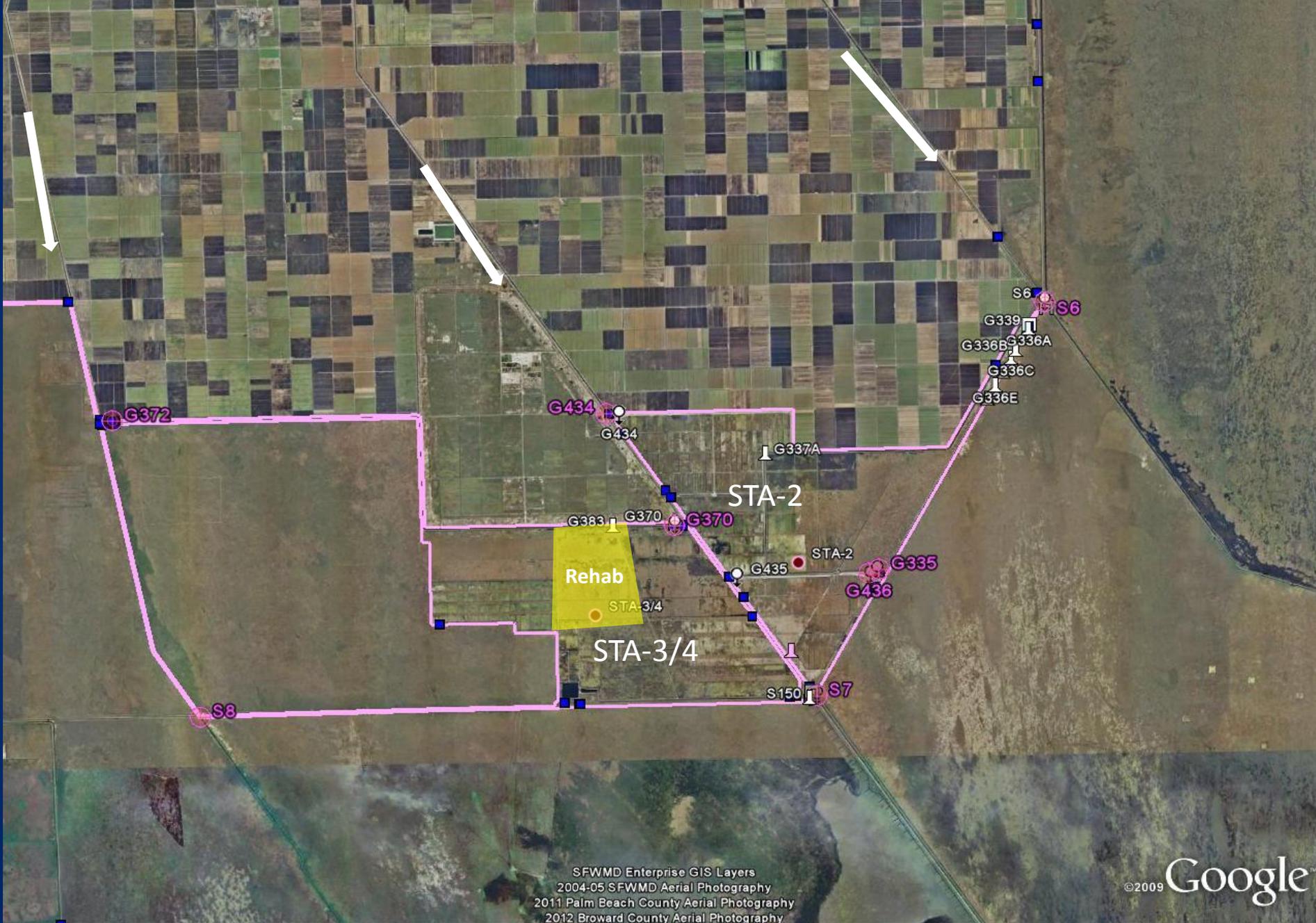
- STA inflows at maximum capacity

STA-3/4

- Conveyance capacity restricted to avoid substantial damage to essential rehabilitation effort in central flowway
- Back-pumping to Lake Okeechobee had begun at S-2 on 6/6/13 due to rising canal stages (≥ 12.5 ft.)

Friday 6/7/13

- Continuous basin runoff during the week, depths increased in STA-3/4 to over 4 ft.
- Additional basin rainfall predicted
- In consideration of anticipated runoff and rainfall, and to avoid substantial damage to STA-3/4 at the start of the wet season, decision was made to divert portion of flow via Miami Canal



SFWMD Enterprise GIS Layers
2004-05 SFWMD Aerial Photography
2011 Palm Beach County Aerial Photography
2012 Broward County Aerial Photography

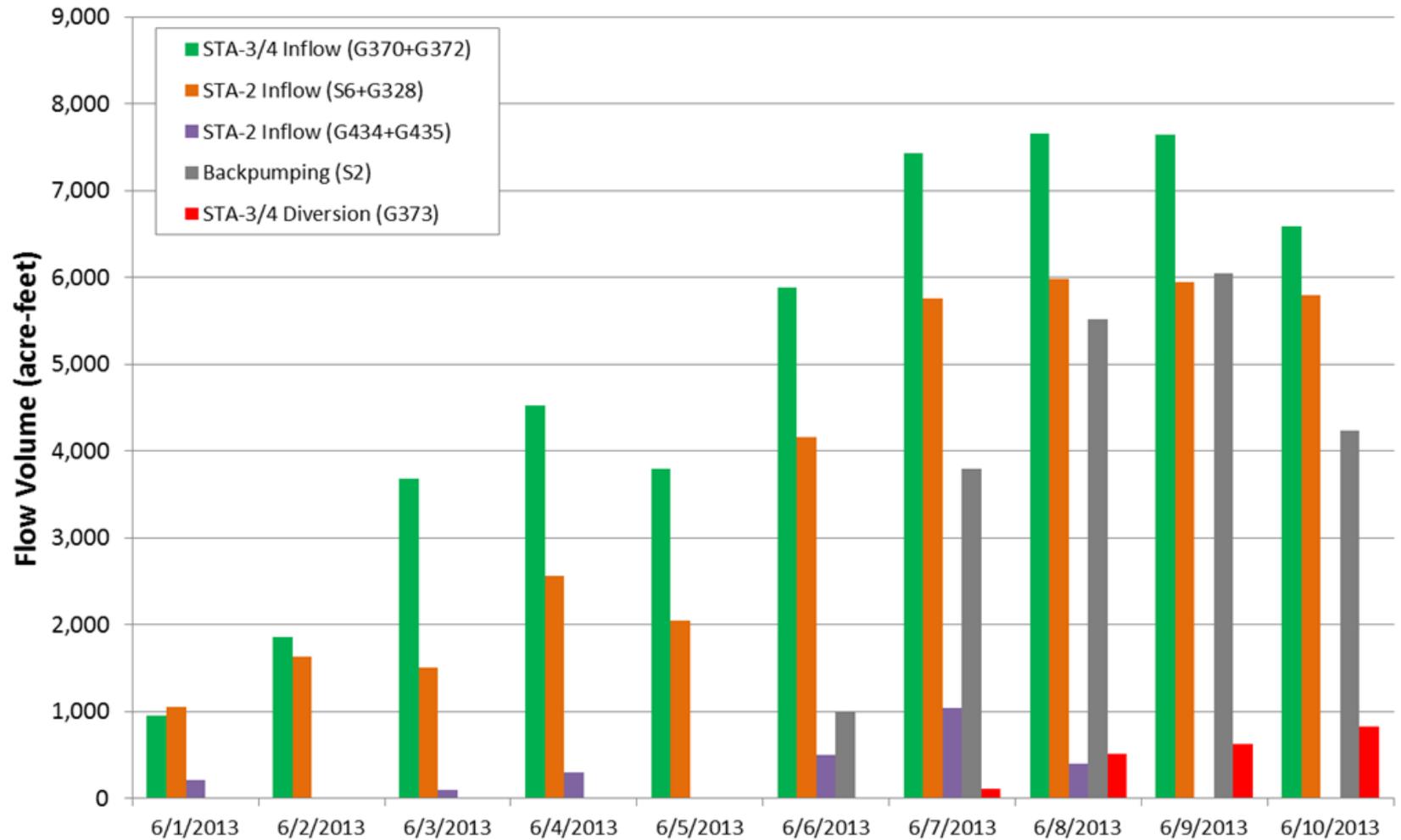
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Imagery Dates: Jan 17, 2005 - Jan 1, 2012

26°24'54.98" N 80°35'38.26" W elev 13 ft

Eye alt 27.33 mi

Tropical Storm Andrea Central Flowpath Diversion Summary STA-2 and STA-3/4



Comparison of Diversion Flows to STA Flows

Date	Diversion G-300 & G-301		Treated STA-1E & STA-1W		Diversion G-373		Treated STA-2 & 3/4		S-155A
	Flow ac-ft	Load mtons	Flow ac-ft	Inflow Load mtons	Flow ac-ft	Load mtons	Flow ac-ft	Inflow Load mtons	Flow ac-ft
June 7-11, 2013	14,600	5.6	37,900	13.0	2,700	0.24	66,700	8.2	12,400

Questions?

