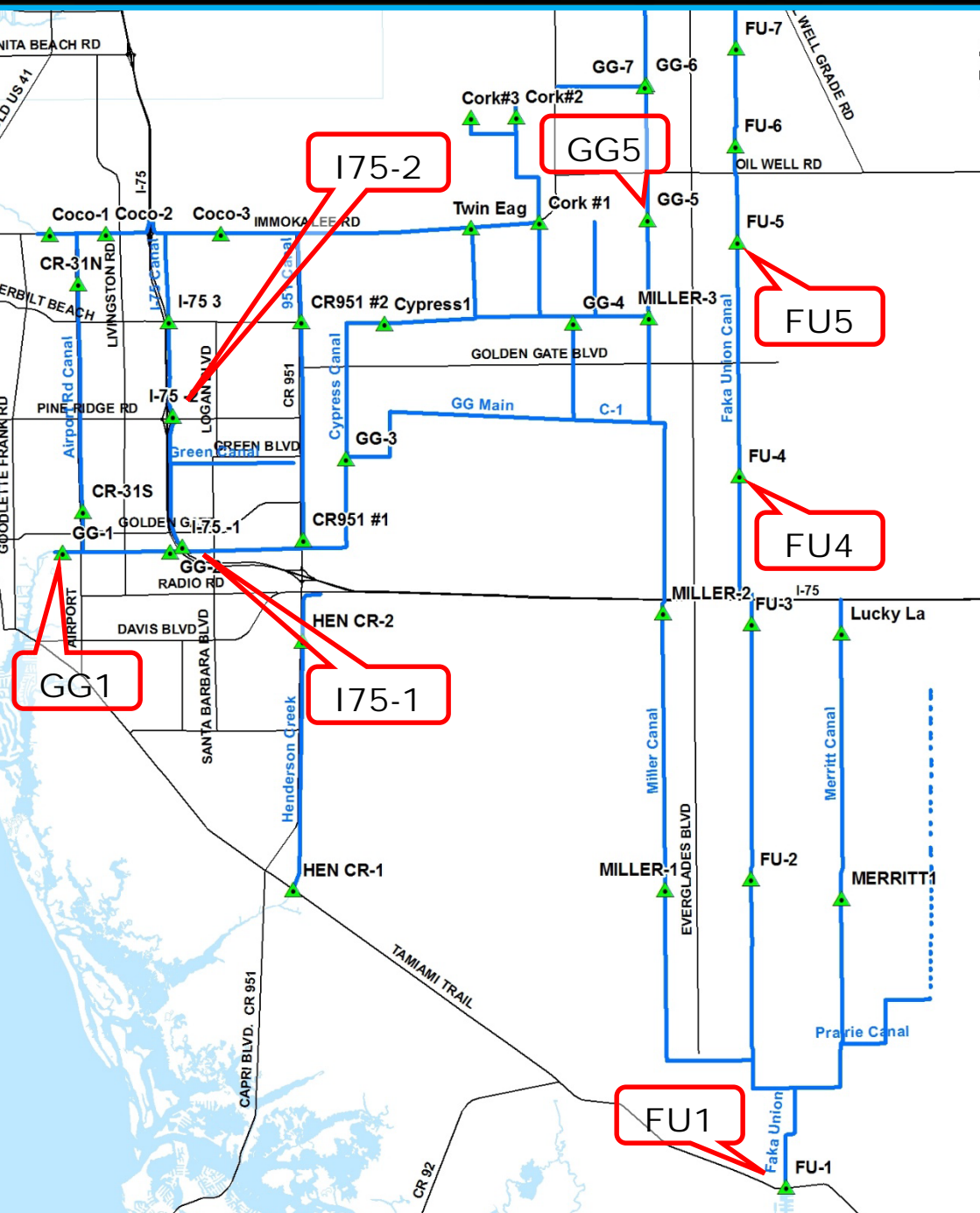




Big Cypress Basin Capital Project Update

Lucine Dadrian, P.E.
Project Management Section Administrator
Engineering and Construction Bureau

April 25, 2019



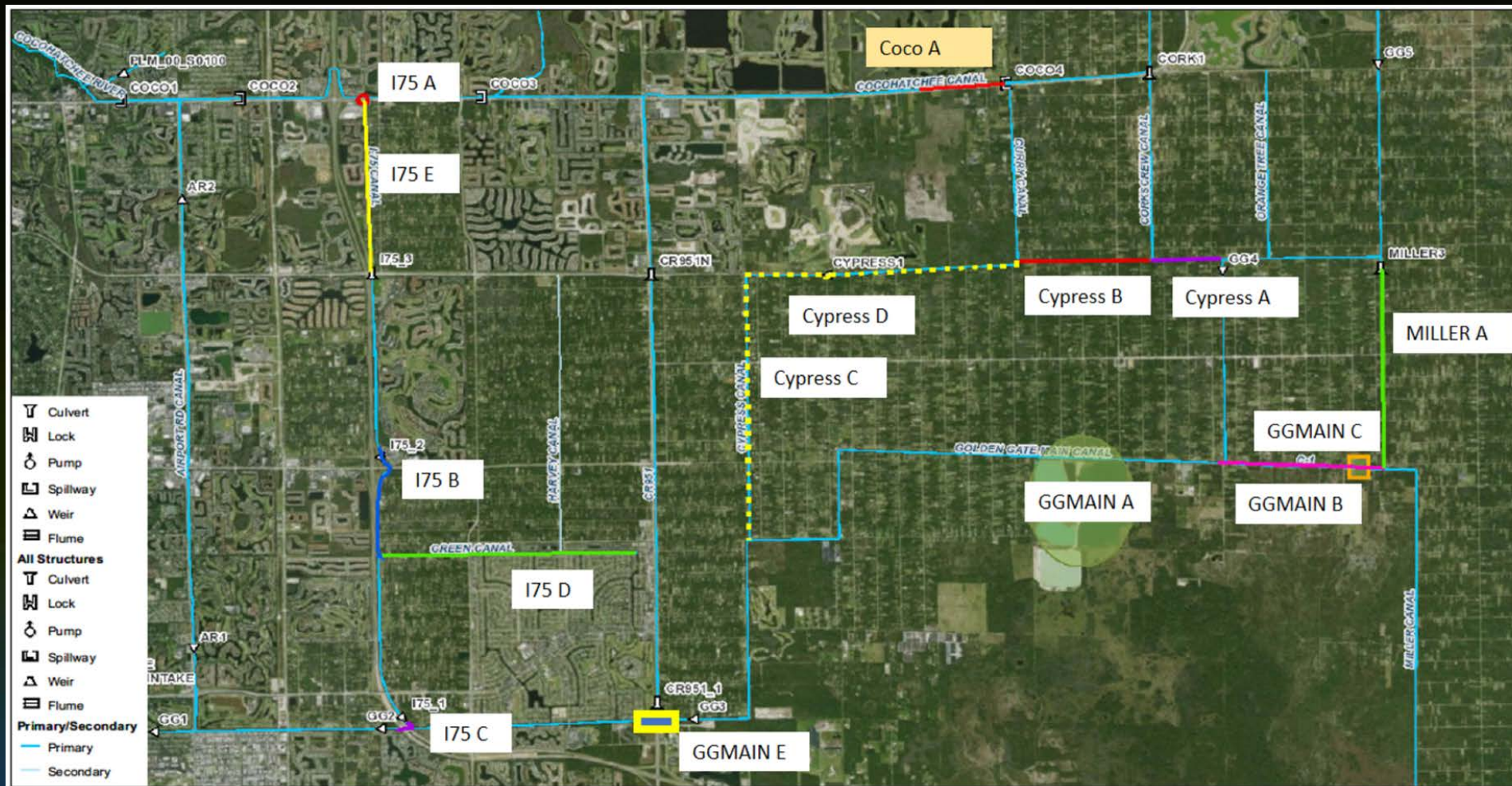
Structure Inspection Program

FY19 Structure Inspections:

- Topside Inspections by Infrastructure Management
- Underwater Inspections by Underwater Engineering Services, Inc. for \$59,579
- 7 sites: FU-1, FU-4, FU-5, I75-1, I75-2, GG-1, & GG-5

Fiscal Year	Budget	Committed
2017/2018	\$225,000	\$186,917
2018/2019	\$225,000	\$59,579
Total	\$450,000	\$246,496

LOS Canal Assessments & Improvements



**Level of Service
modeling completed**

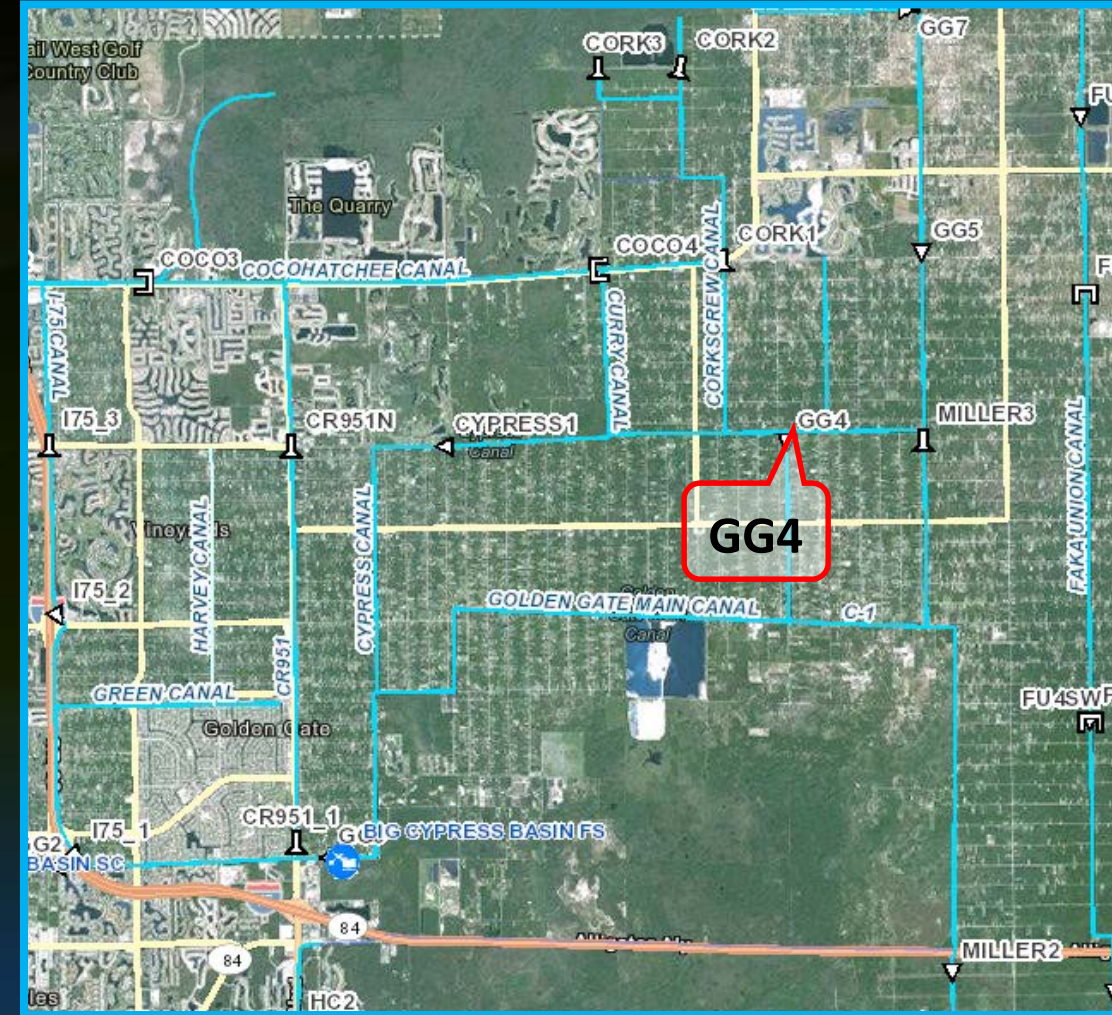
**Prioritized Canal
Systems:**

- I75 Canal
- Miller Canal
- C1 Connector Canal
- Cypress Canal
- FY20 Budget \$600k for assessments

	LOS Reprioritization of Canal and Structure Improvements	Linear Feet	Type of Work
I75 Conveyance Improvements			
	Cocohatchee culvert connection (County Project)		New Culvert
	Assessment of I75 Conveyance Improvements		Assessment
	Cocohatchee to I75-3 Weir Vanderbilt Rd	10,200	Excavation
	Pine Ridge Rd to Green Canal (7,400 LF) Excavation	7,400	Excavation
	Green Canal	14,460	Hydraulic Dredging
	GGM Junction		Excavation & Riprap
	Potential removal of I75-1 Weir		Demolition
Miller Canal Improvements			
	Assessment of Miller Conveyance Improvements		Assessment
	Miller 3 to C1 Connector Canal Junction (12,000 LF) Excavation	12,000	Excavation
	SE 28 th Ave to Alligator Alley (9,400 LF) Excavation	9,400	Excavation
C1 Connector Canal Assessments and Improvements			
	Assessment of C1 Connector Canal/GG/Cypress (East) Conveyance Improvements for a new way out		Assessment
	C1 Conveyance Improvements (9,000 LF)	9,000	Hydraulic Dredging
	Road Crossing Culvert Improvements		
	C1 New Water Control Structure (Similar to Curry with Remote Ops) \$2.5M		New Structure
Cypress Canal Improvements			
	Assessment of Cypress Canal Improvements (\$75K)		Assessment
	Vanderbilt Rd Expansion and canal relocation south by County		
	Cypress1 Structure relocation west of Expansion \$2.5M		New Structure
	Vanderbilt Rd to Golden Gate Canal (16,000 LF) Hydraulic Dredging	16,000	Hydraulic Dredging
	Curry Canal to GG4 (11,600 LF) Excavation	11,600	Excavation

Golden Gate Weir 4 Replacement

Original GG4 Facing North



Golden Gate Weir 4 Replacement

- Structure designed for 1,006 cfs
- Project awarded to Zep Construction for \$4,710,000
- NTP Sep 29, 2017 with a contract duration of 620 days
- Change order 1 added 60 days to contract for H-pile modification
- Project is 80% complete

Fiscal Year	Budget	Committed
2014/2015	\$127,800	\$173,490
2015/2016	\$450,000	\$427,313
2016/2017	\$461,900	\$906,990
2017/2018	\$4,000,000	\$3,150,000
2018/2019	\$1,646,360	\$1,863,117
Total	\$6,686,060	\$6,520,910

Golden Gate Weir 4 Replacement



Current Site Condition



Control Building Walls Erected

Golden Gate Weir 4 Replacement

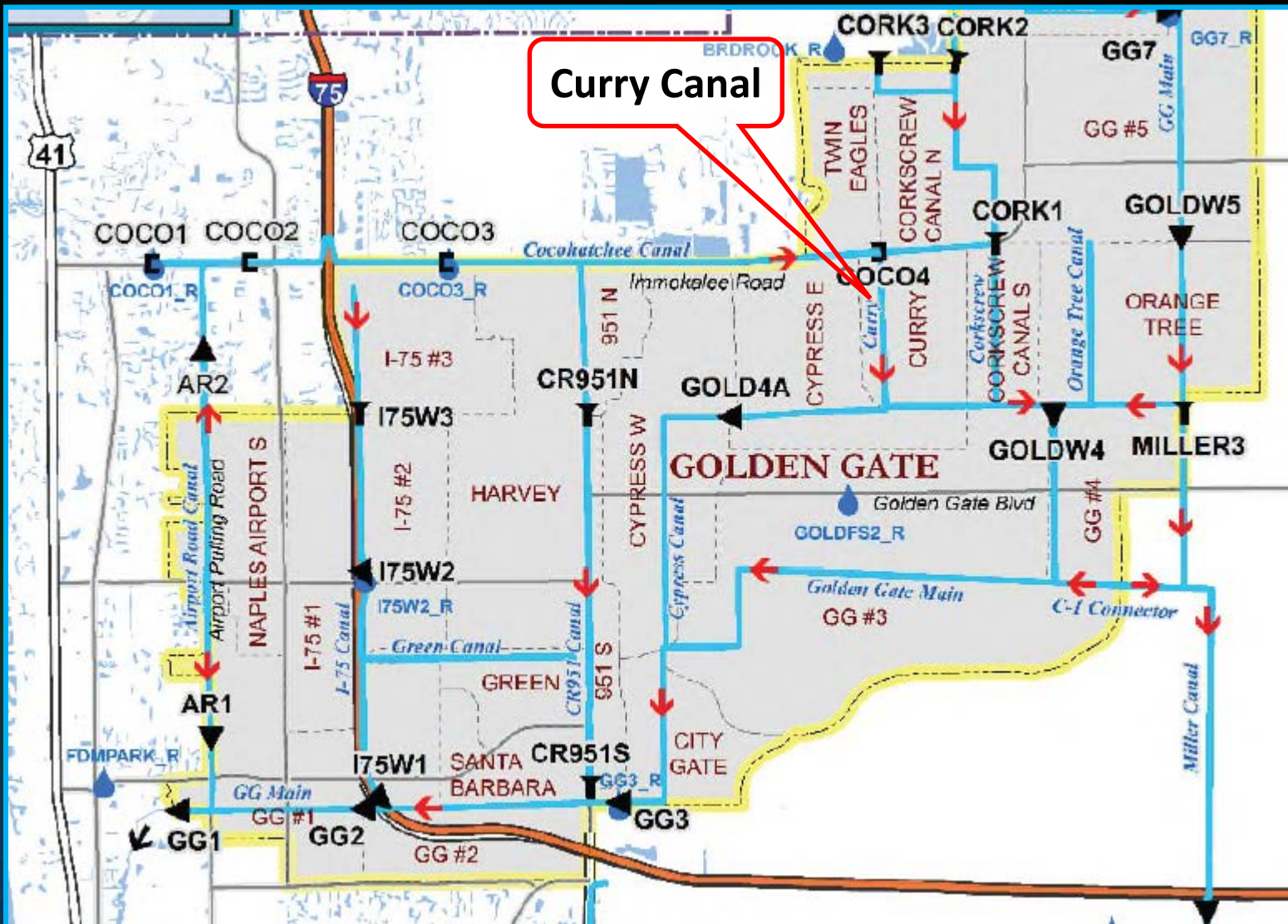


Weir Gates Installed



Completion of Sheet Pile Cap

Curry Canal Structure



- New water control structure to maintain groundwater in the dry season
- Three gated structure designed for 350 cfs
- Located 150 feet south of Immokalee Road

Curry Canal Structure

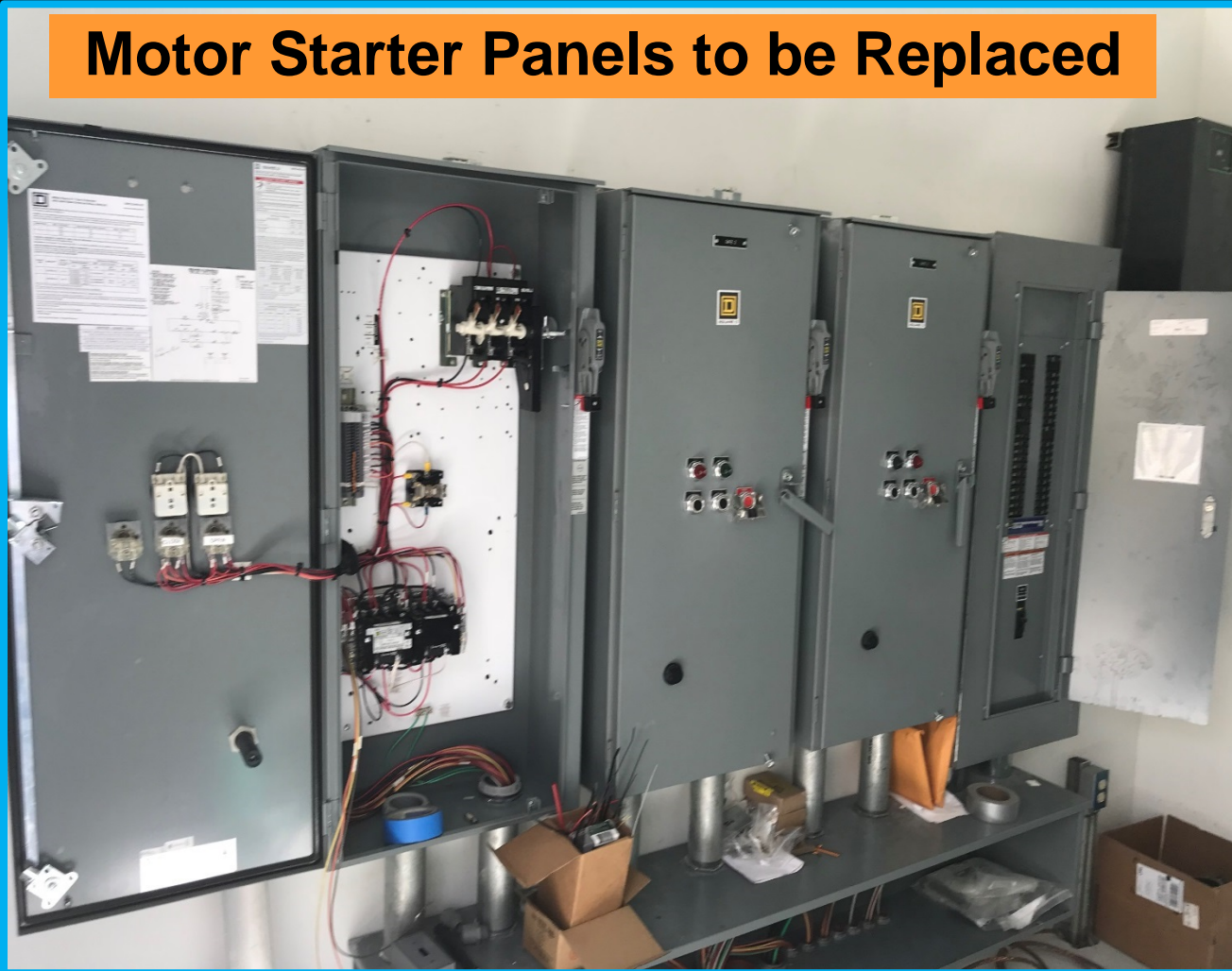


Fiscal Year	Budget	Committed
2015/2016	\$50,000	\$81,811
2016/2017	\$500,000	\$31,375
2017/2018	\$2,100,000	\$1,884,884
2018/2019	\$0	\$6,681
Total	\$2,650,000	\$2,004,751

- Project awarded to Thomas Marine, Inc. for \$1,681,500 at Oct 2017 GB
- Flow ready on April 26, 2018
- Substantial Completion was achieved on Nov. 1, 2018
- Final Completion – 240 day delay
- Project is expected to be completed by mid-May 2019

Curry Canal Structure

Motor Starter Panels to be Replaced



- Site work to be completed include: Motor Starter Panel Replacement, Gate Position Indicator Housing Replacement and SCADA
- Motor Starter Panels were resubmitted for electrical safety standard listing review in early March 2019 and include a 6 to 8 week production timeframe
- Change Order for Gate Position Indicator and Solar Panel Relocation in negotiations for money and time

Curry Canal Structure

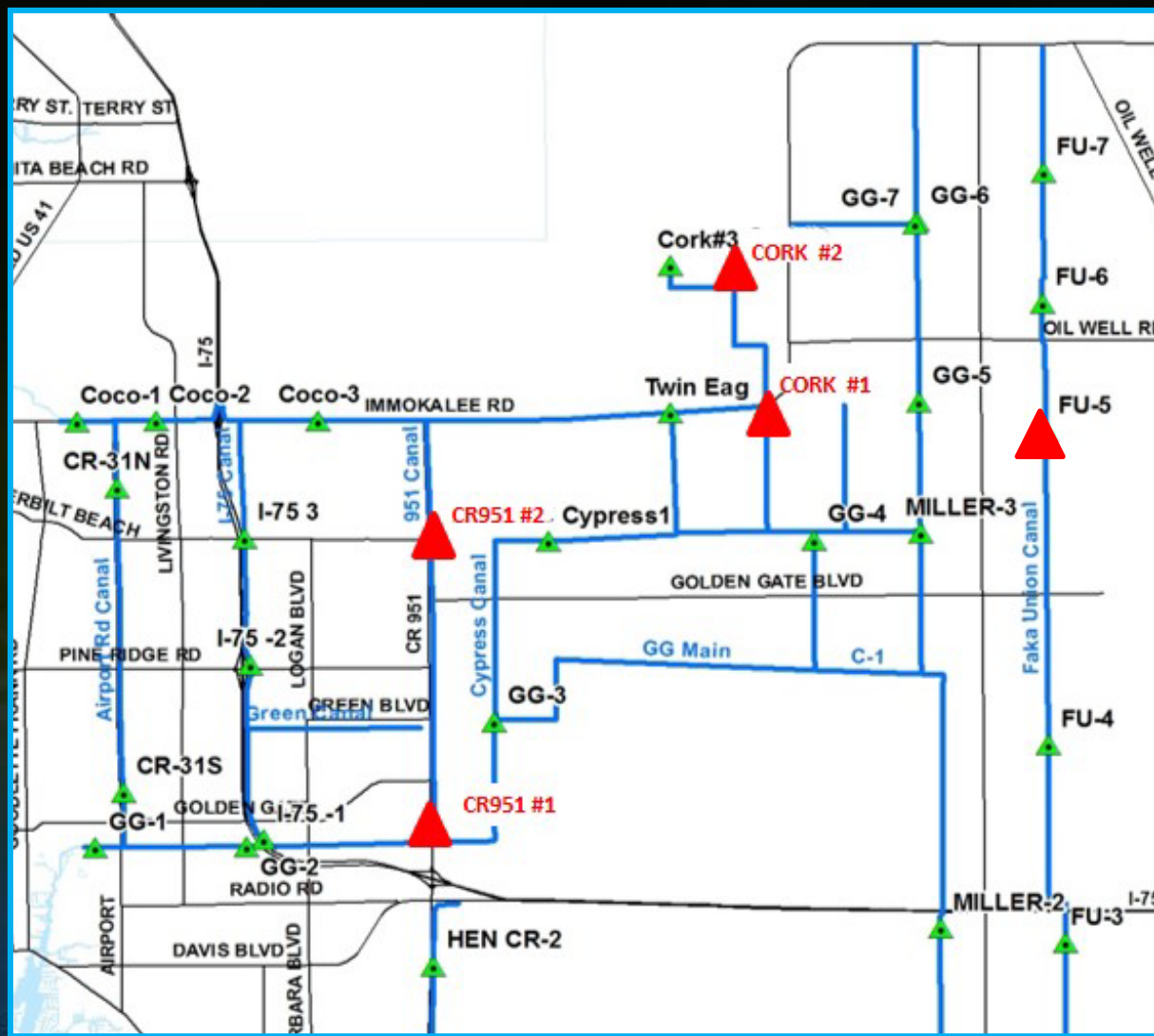


Stilling Well Platform



Walkover Platform Completed

Electrification & Remote Operations



CORK1

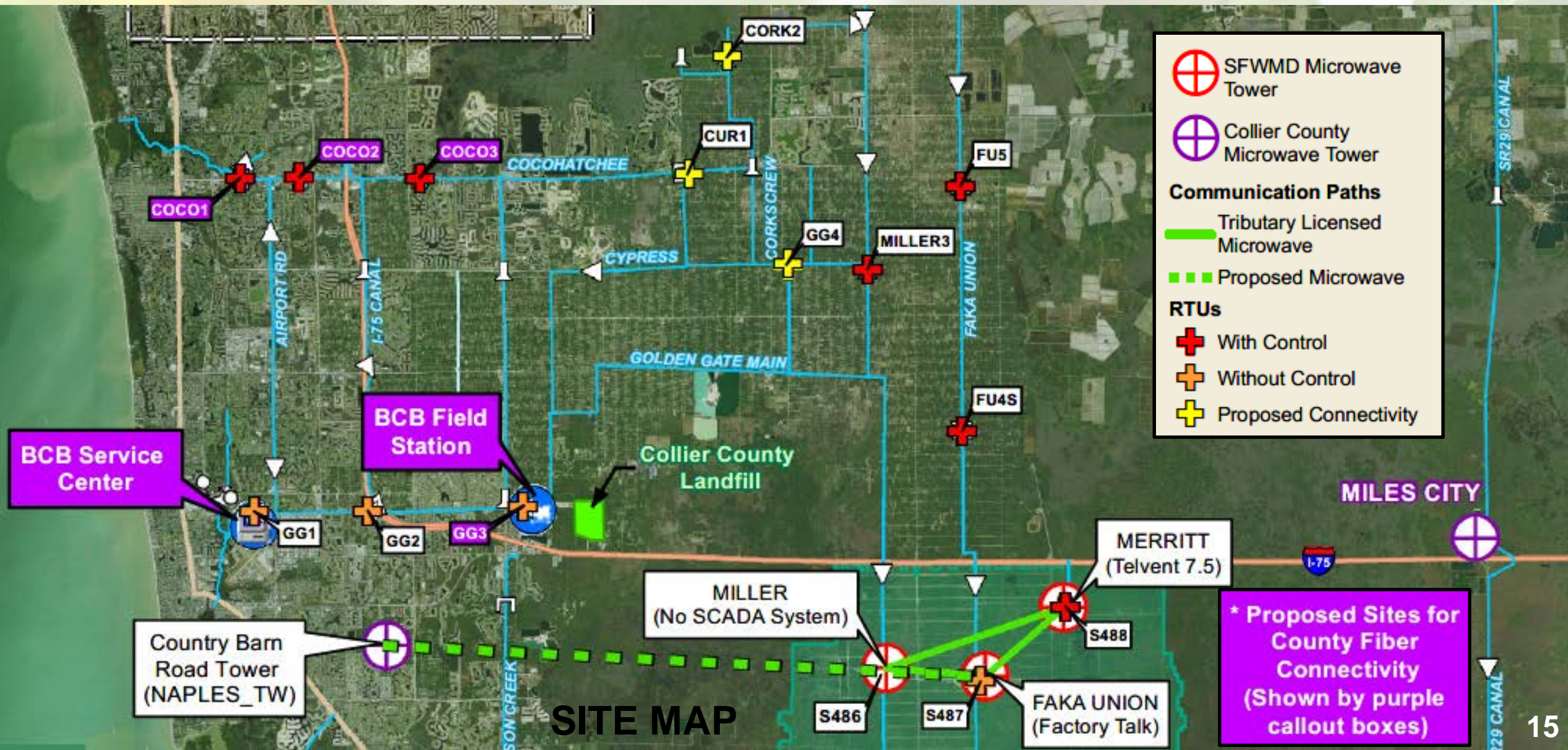
Electrification & Remote Operations

- Design work order executed with CSA Central in Sep 2017, total work order amount with revisions \$560,286
- Package 1:
 - CORK1, CR951-1, CR951-2 – add powered operations only
 - Anticipated bid date Aug 2019
- Package 2:
 - CORK2 – add power & remote operations and FU5 - New generator building & generator
 - CORK2 easement requirements shifting from the east side to the west
 - Anticipated bid date Feb 2020



Fiscal Year	Budget	Committed
2016/2017	\$600,000	\$424,931
2017/2018	\$0	\$9,048
2018/2019	\$1,300,000	\$128,307
2019/2020	\$1,100,000	\$0
Total	\$1,900,000	\$560,286

Remote Monitoring and Communication



Remote Monitoring and Communication

Phase 1 includes additional scope for Golden Gate 1, 2 and 3 Automation

- Provide programming services to implement remote operations
- Upgrade control hardware
- Estimated cost \$250,000 for FY20

	Big Cypress Basin - Golden Gate Structures Suggested Remote Operations and Implementation.															
					2019									2020		
		March	April	May	June	July	August	September	October	November	December	Jan	Feb	March	April	May
	GG-1															
Task 1	Control Narrative Development															
Task 2	Statement of Work Development															
Task 3	Procurement Phase-Bid Solicitation															
Task 4	Project Execution Phase															
4.1	GG Field Mods and Programing															
4.2	Start Up and Commissioning															
4.3	Field Certification - SFWMD															

Remote Monitoring and Communication

- Phase 2 includes telemetry installations and site work at the following structures: COCO1, COCO2, COCO3, FU4S, FU5, GG1
- Includes 6 concrete antenna poles, two antennas per pole, cables to shelters, and 24 gate level-indicator housings & conduit
- Contract executed with Current Connections for \$450,000 and 300 days
- Notice to Proceed - Jul 10, 2018
- Project is 75% complete
- Need additional \$32k for CMS
- Level instrumentation through SCADA for \$48k



Remote Monitoring and Communication

- **Phase 3 scope includes:**
 - Radios and Antennas at Miller 3, GG2, and GG4
 - Fiber installation at COCO1, COCO2, COCO3, GG3, BCB Service Center and BCB Field Station
 - Microwave link between County Barn Road Tower and FAKA Union Tower
 - Contracts for Base Stations, Antennas, Radios, Tower Analysis, and Tower Equipment and Wiring Installations executed

Scope	Estimate
Radios & Antennas	\$44,900
Fiber Installation	\$80,100
Microwave Link	\$450,000
Total	\$575,000

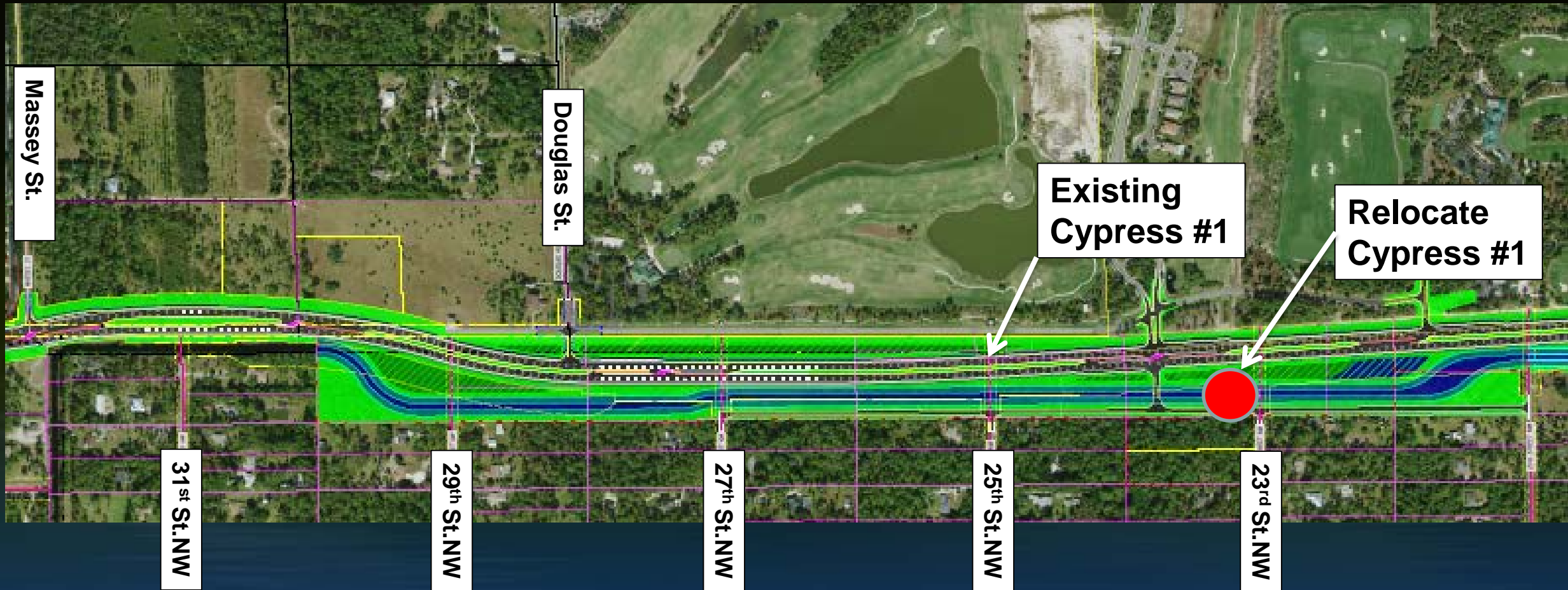
Fiscal Year	Budget	Committed
2016/2017	\$400,000	\$83,000
2017/2018	\$476,911	\$492,259
2018/2019	\$625,000	\$153,274
2019/2020	\$250,000	\$0
2020/2021	\$500,000	\$0
Total	\$1,501,911	\$728,533

Cypress #1 Structure Relocation at VBR

- Project scope: design and construction of a remotely operable structure
- Canal realignment and Structure relocation needed due to County's Vanderbilt Beach Rd expansion
- Structure has also reached end of service life
- Available county-owned land for construction of structure identified



Cypress #1 Structure Relocation at VBR



Cypress #1 Structure Relocation at VBR

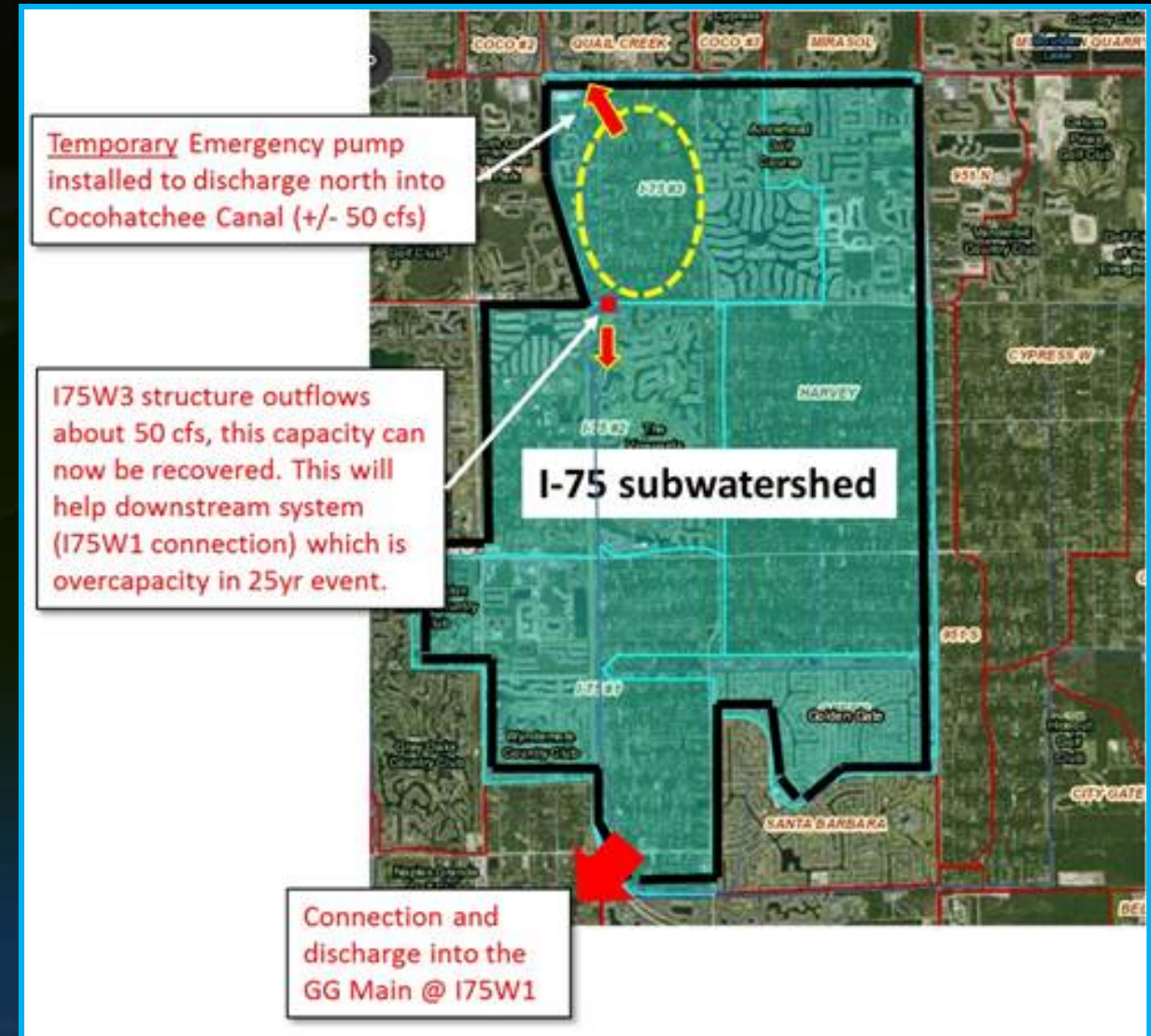


- Design Contract awarded to by R J Behar Company, Inc. and Preliminary Design in progress
- Geotech awarded to Ardaman & Associates, Inc. and Final Report in progress
- Anticipated construction start Sept 2020

Fiscal Year	Budget	Committed
2018/2019	\$400,000	\$394,349
2019/2020	\$250,000	\$0
2020/2021	\$2,250,000	\$0
Total	\$2,900,000	\$394,349

I-75 & Cocohatchee Canal Interconnect and Emergency Pump Facility

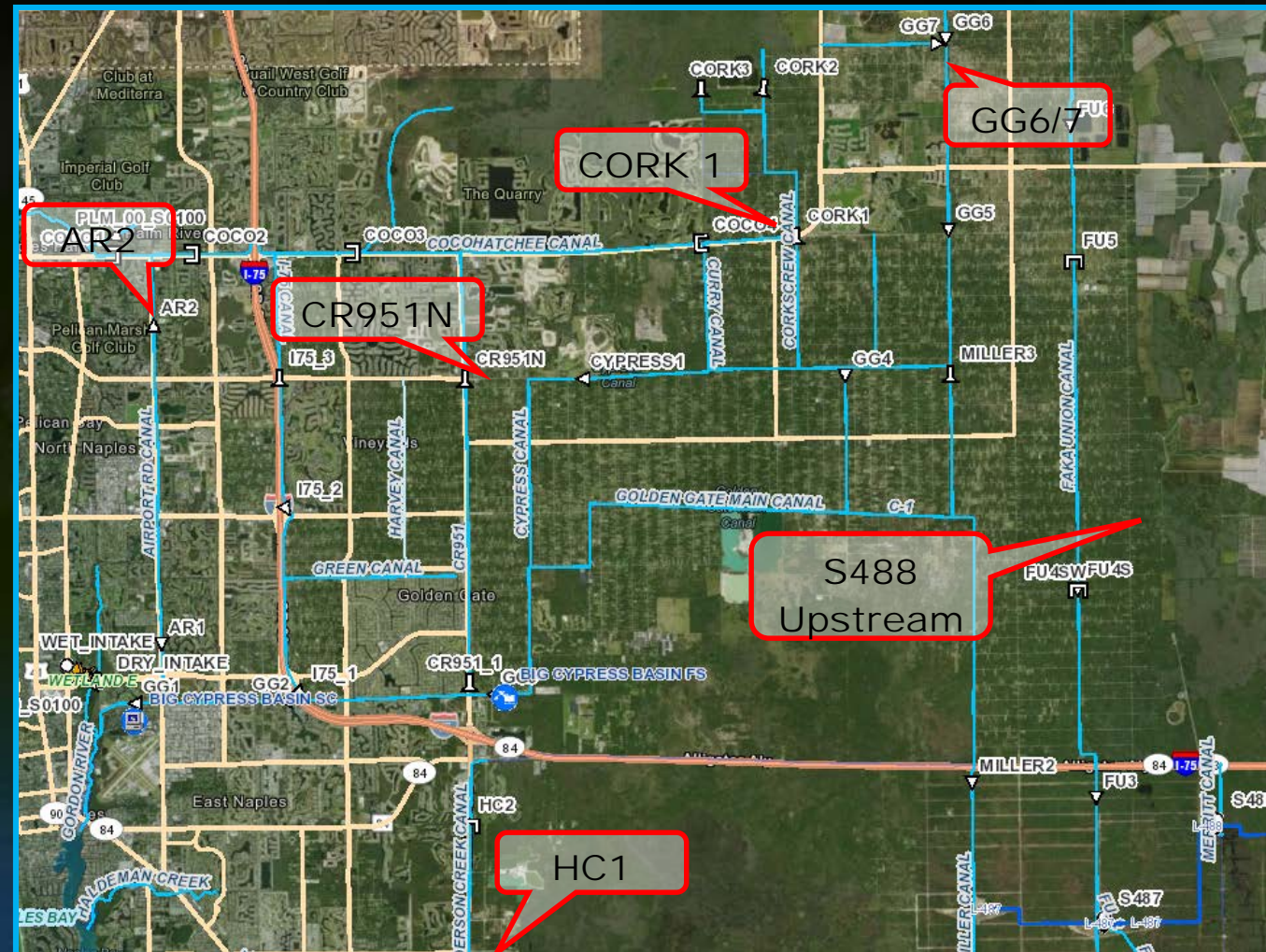
- Project will provide emergency capability to move floodwater from the northern portions of the I-75 drainage area to the Cocohatchee Canal when capacity becomes available under post storm conditions
- Board approved level of service project in October Board meeting
- Contract executed on Dec 21, 2018 with the County in the amount of \$500,000 to design and construct by end of FY20



I-75 & Cocohatchee Canal Interconnect and Emergency Pump Facility



SCADA Replacements



SCADA Replacements

- **New Stilling Well Platforms and SCADA upgrades at the following sites: ARN HW & TW, S488 Upstream, GG6/GG7 TW, CORK1 TW, CR951N TW, & HC1 HW**
- **Survey Work Order executed with AIM Engineering, Inc. for \$53,561**
- **Construction package design with in-house staff**
- **Out to bid by Aug/Sep 2019**
- **Purchase Loggernet Radios for 21 Sites to replace obsolete equipment for approximately \$200k**

Fiscal Year	Budget	Committed
2018/2019	\$426,000	\$53,561
2019/2020	\$300,000	\$0
Total	\$676,000	\$0

Approved Fiscal Year 2018-2019 Capital Budget

BCB Capital Projects	Fiscal Year 2018-19 Adopted	Transfers In / Out	Fiscal Year 2018-19 Modified Adopted	Contractual Commitments	Available Funds	Additional Funding Needs
Structure Inspection Program	\$225,000	(\$125,000)	\$100,000	\$59,579	\$40,421	\$0
SCADA Replacements	\$426,000	\$0	\$426,000	\$53,561	\$372,439	\$0
Remote Monitoring and Communications	\$575,000	\$50,000	\$625,000	\$153,376	\$471,624	\$32,018
Golden Gate Weir #4 Replacement	\$1,646,360	\$216,757	\$1,863,117	\$1,846,678	\$16,439	\$0
Cypress #1 Structure Relocation	\$400,000	\$0	\$400,000	\$394,349	\$5,651	\$0
Electrification and Remote Operations	\$1,300,000	(\$364,783)	\$935,217	\$128,307	\$806,910	\$0
I-75 / Coco Interconnect	\$500,000	\$0	\$500,000	\$500,000	\$0	\$0
Curry Canal Structure	\$0	\$81,681	\$81,681	\$6,681	\$75,000	\$0
Henderson Creek #1	\$0	\$141,345	\$141,345	\$141,345	\$0	\$0
Total - Capital Projects	\$5,072,360	\$0	\$5,072,360	\$3,283,875	\$1,788,485	\$32,018

Proposed 5-year Capital Improvement Plan

BCB Capital Projects	Fiscal Year 2019-20 Preliminary	Fiscal Year 2019-20 Tentative	Variance	Fiscal Year 2020-21	Fiscal Year 2021-22	Fiscal Year 2022-23	Fiscal Year 2023-24
Structure Inspection Program (every 5 yrs)	\$0	\$0	\$0	\$0	\$0	\$225,000	\$225,000
SCADA Replacements	\$121,000	\$300,000	\$179,000	\$133,000	\$145,000	\$0	\$0
Remote Monitoring and Communications	\$500,000	\$250,000	(\$250,000)	\$500,000	Project Complete		
Cypress #1 Relocation (VBR)	\$1,000,000	\$250,000	(\$750,000)	\$2,250,000	Project Complete		
Electrification & Remote Operations	\$0	\$1,100,000	\$1,100,000	Project Complete			
Canal Improvements	\$1,200,000	\$600,000	(\$600,000)	\$2,050,000	\$1,800,000	\$2,100,000	\$800,000
C-1 Connector Canal Control Gate	\$500,000	\$500,000	\$0	\$1,000,000	\$1,000,000	Project Complete	
Cork 3 Replacement	Project not started			\$500,000	\$400,000	\$600,000	Complete
I-75-1 Weir Removal	Project not started			\$200,000	\$1,000,000	Project Complete	
Faka Union Canal Weir #6 Replacement	Project not started					\$400,000	\$350,000
Faka Union Canal Weir #7 Replacement	Project not started					\$500,000	\$750,000
Golden Gate Canal Weir #5 Replacement	Project not started					\$700,000	\$1,000,000
BCB Capital Projects	Project not started						\$2,306,196
Totals	\$3,321,000	\$3,000,000	(\$321,000)	\$6,633,000	\$4,345,000	\$4,525,000	\$5,431,196

Recommended FY 20 Capital Projects - \$3,000,000

- **SCADA Replacements**
- **Remote Monitoring and Communications**
- **Cypress #1 Structure Relocation (County VBR Project)**
- **Electrification – Phase 2 (Cork 2 & FU5)**
- **Canal Improvements**
- **C-1 Connector Canal Control Structure**

Recommended FY 20 Capital Projects

- **SCADA Replacements - \$300,000**
 - New water level recorders – AR2, CR951-N, GG6/7, & S488 Upstream
 - Replacement of existing failing water level recorder – HC1
 - Multi-year construction with execution of contracts in FY19
- **Remote Monitoring & Communications - \$250,000**
 - GG1, 2, & 3 Remote Operation Capability

Recommended FY 20 Capital Projects

- **Cypress 1 Structure Relocation (VBR Ext) - \$250,000**
 - 1st year of construction for new water control structure.
 - Aligns with VBR Extension project schedule.
 - Allows for greater flood control and normal operational flexibility.
- **Electrification Phase 2 - \$1,100,000**
 - Cork 2 Electrification & Remote Operations
 - FU5 – Back-up generator and Control Building

Recommended FY 20 Capital Projects

■ Canal Improvements - \$600,000

- Assessment & design conveyance improvements for high priority canal segments
 - I-75 Canal & I-75/Golden Gate Main Connection
 - Miller Canal
 - C-1 Connector Canal
 - Cypress Canal

■ C-1 Connector Canal Control Structure - \$500,000

- Begin design of new control structure near C-1 & Miller Canal intersection
- Compliments C-1 Canal Improvement project
- Allows for additional wet and dry season operational flexibility.
- Similar to new Curry Canal structure

Questions?

