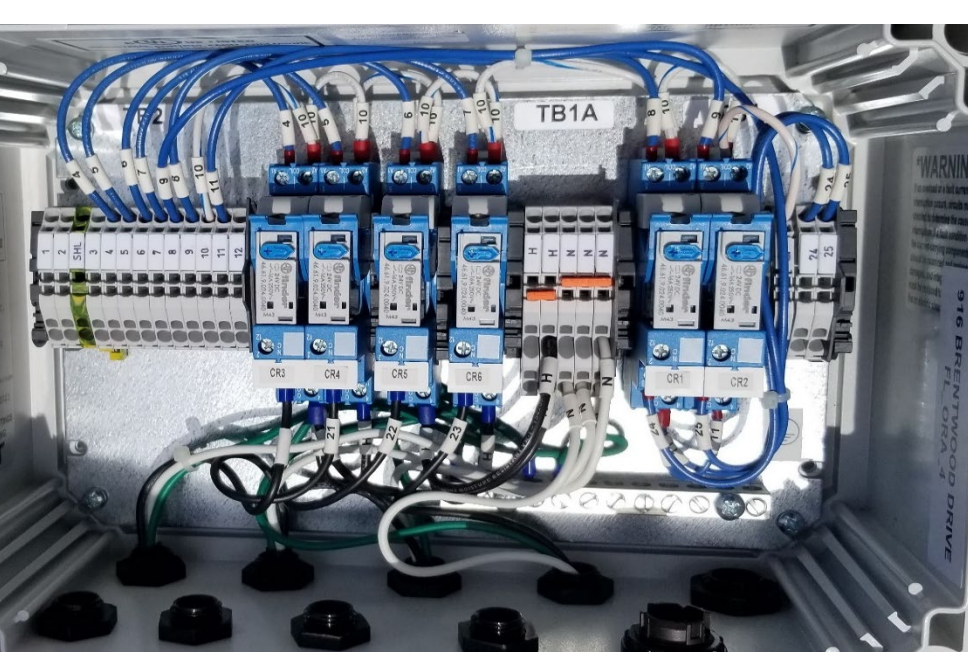




Distributed Sewer (Distributed Wastewater Treatment Systems)



“DISTRIBUTED SEWER” MEANS... UTILITY SEWER SERVICE, ON DEMAND, ANYWHERE

NOT A NEXT-GENERATION SEPTIC TANK

- Uses industry-standard processes and technology
- Achieves “Advanced Secondary Wastewater Treatment” standards at discharge
- Discharges to drainfield or drip irrigation
- Rigorously field tested in Georgia and Florida
- Centrally (continuously) managed and controlled
- Utilizes Industrial Cloud-based Operating System



HIGH PERFORMANCE TREATMENT



Apopka DWTS August Test Results:

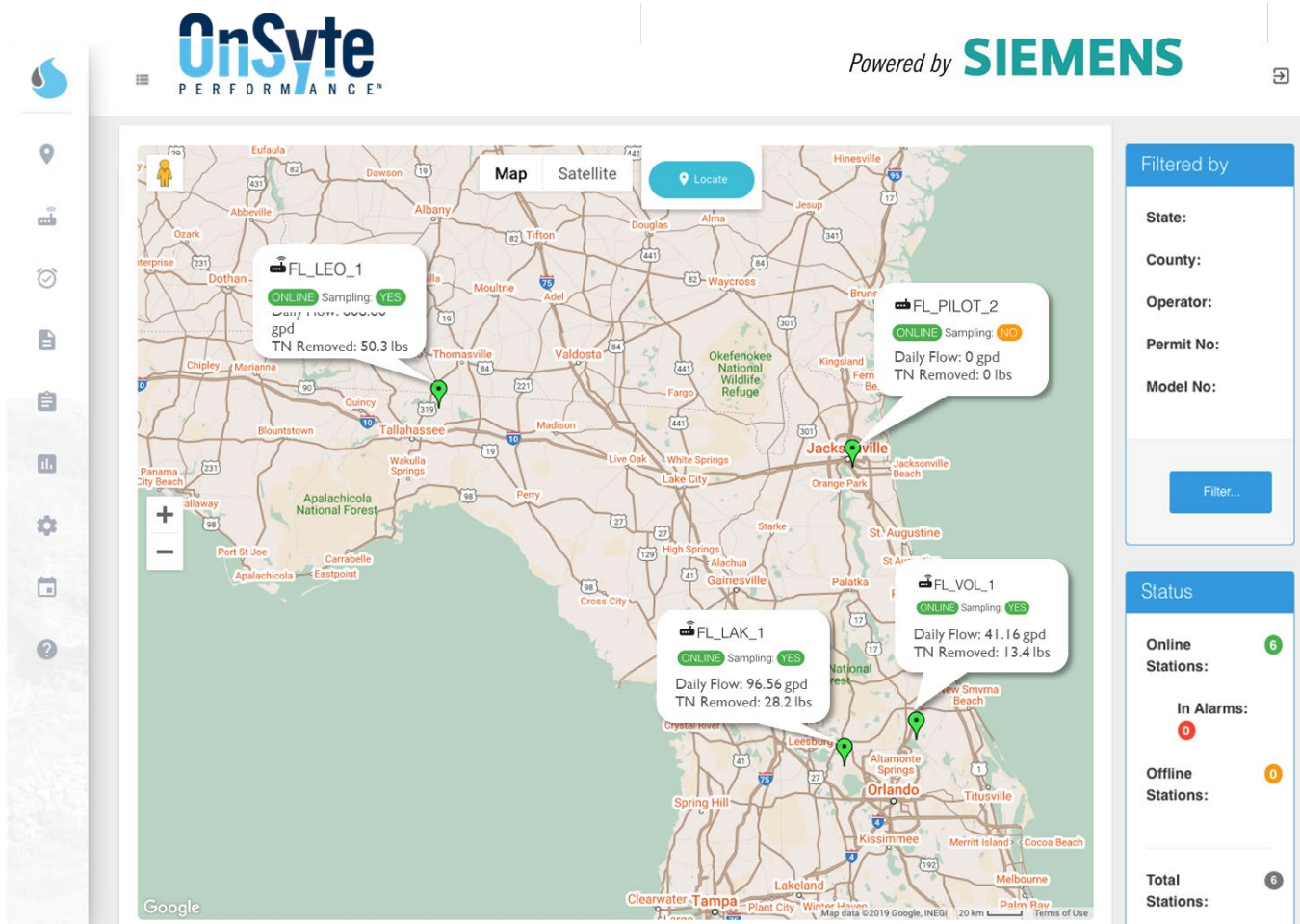
Unit	TSS	CBOD	Total N
DWTU 2	3 mg/l	2 mg/l	1.59 mg/L
DWTU 11	6 mg/l	2 mg/l	7.58 mg/l

Polk County Residential GW Study:

- Dr. Brian Lapointe, FAU Harbor Branch
- October 2020 – September 2021
- Recorded influent, effluent and GW
- New installation, established GW baseline
- Observed conditioning period (60 days to 80%)
- Observed the contribution of RAS process
- 90-95% Total Nitrogen removal

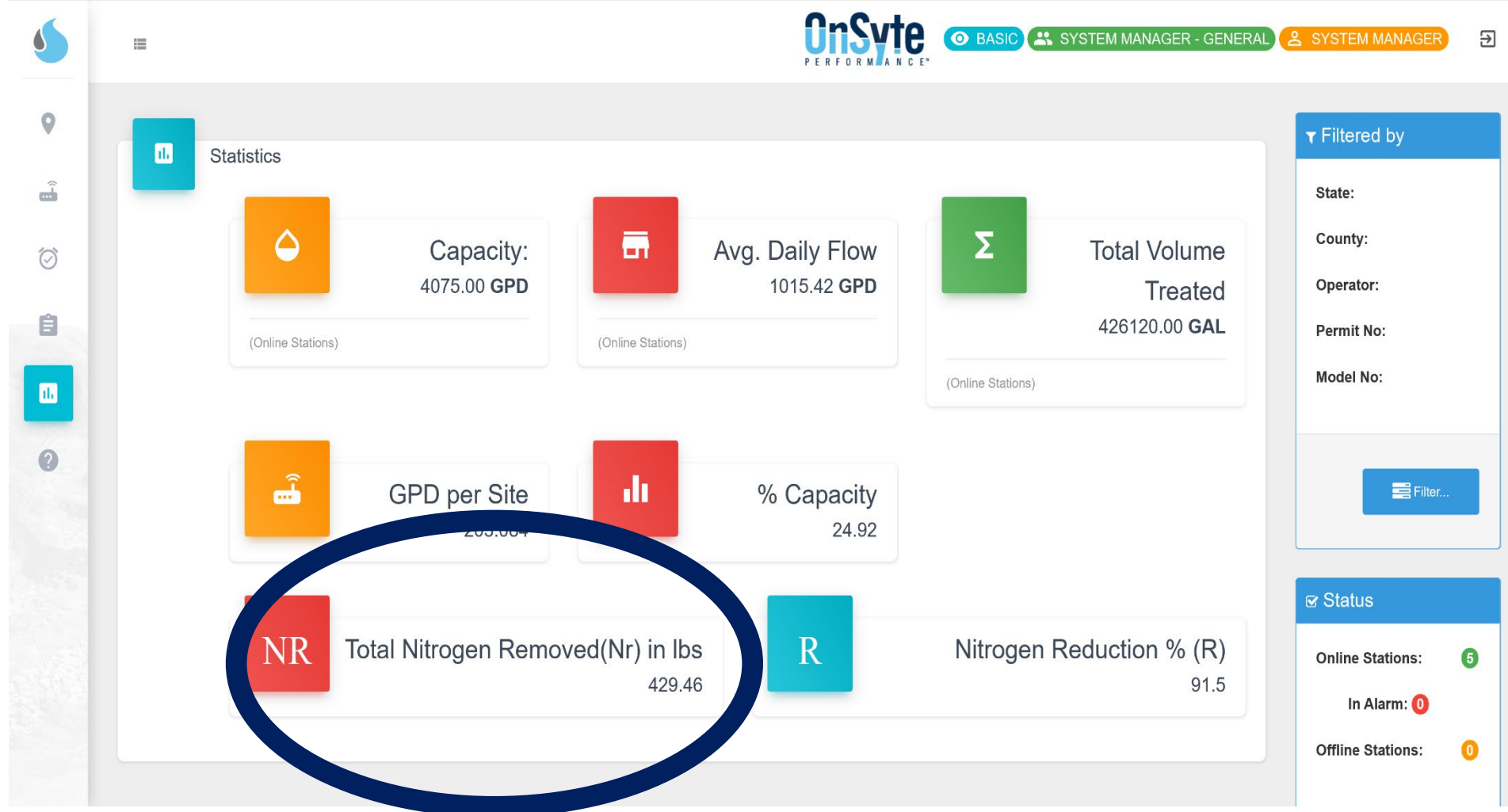


CLOUD CONTROL AND MONITORING



- Ability to monitor and control 100,000+ units – Real-time and remotely
- Uses data analytics to aggregate and analyze performance information
- Pushes information to operators for maintenance and regulatory compliance
- Advancement in IIoT and edge computing are making this type of deployment cost-effective

CLOUD CONTROL AND MONITORING





Live View

Station ID: FL_LAK_1

Connection Status:

03-06-2019 09:08:07

ONLINE

Connection PLC: OK

Inbound Service: OK

Outbound Service: OK

Alarm Status: OK

Time Elapsed: 00:01:35

Time out: 00:10:00

ACTIVE DATA

CURRENT BATCH SIZE: 125 GAL

PROCESS STAGE (43): AERATE 3

TIME ELAPSED(STAGE): 01:02:41

TIME LEFT(STAGE): 05:57:18

LAST BATCH

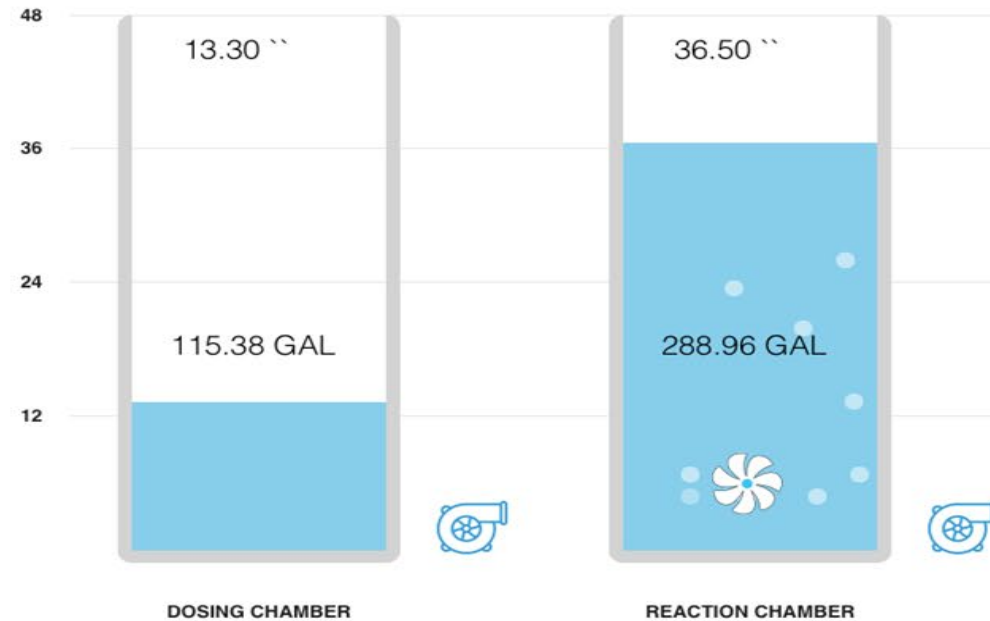
LAST BATCH SIZE: 125 GAL

START TIME(XFER): 12:21:02

END TIME(DISCH): 10:37:27

BATCH DURATION (Hours): 70.27

FLUID LEVELS



Filtered by

State:

County:

Operator:

Permit No:

Model No:

Filter...

Status

Online Stations: 6

In Alarms: 0

Offline Stations: 0

Total Stations: 6

AUTO

PAUSE

SKIP

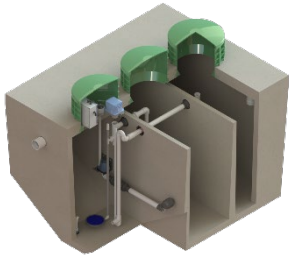
START OK

ABORT

RESET

ONSYTE DWTU

(DISTRIBUTED WASTEWATER TREATMENT UNITS)

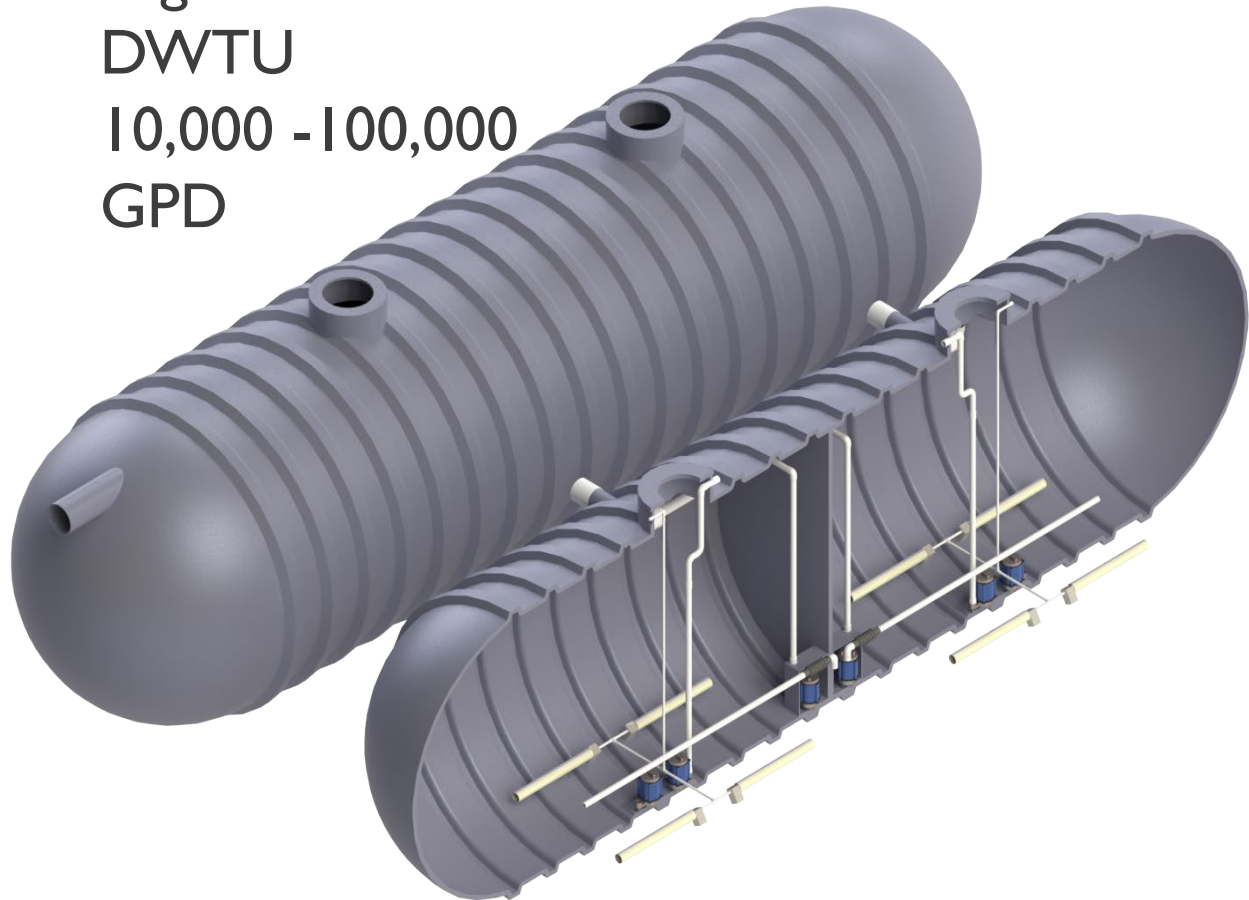


Residential DWTU
Up to 5 Bedrooms



Modular DWTU
Treatment Volume Sizes:
1500, 2000, 2500, 3500,
5000 GPD

High Flow
DWTU
10,000 - 100,000
GPD



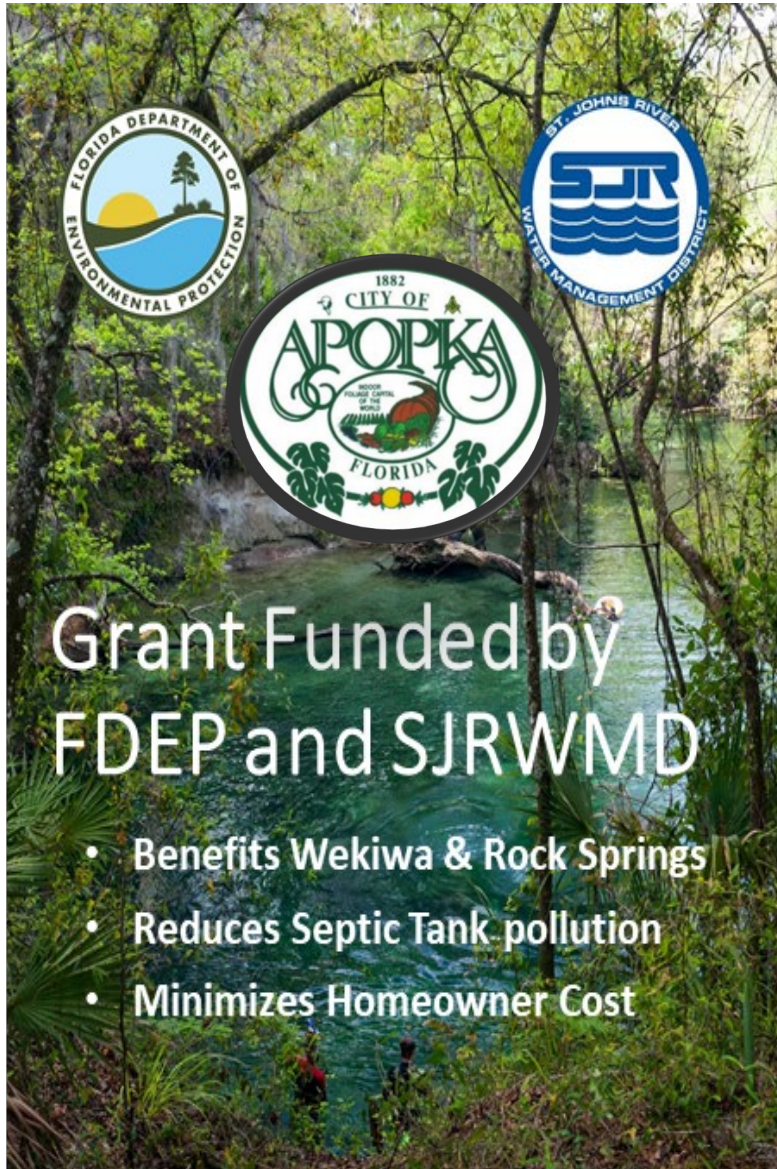
CASE STUDY: SEPTIC TO DISTRIBUTED SEWER PROGRAM, CITY OF APOPKA, FL (NOV 2020)

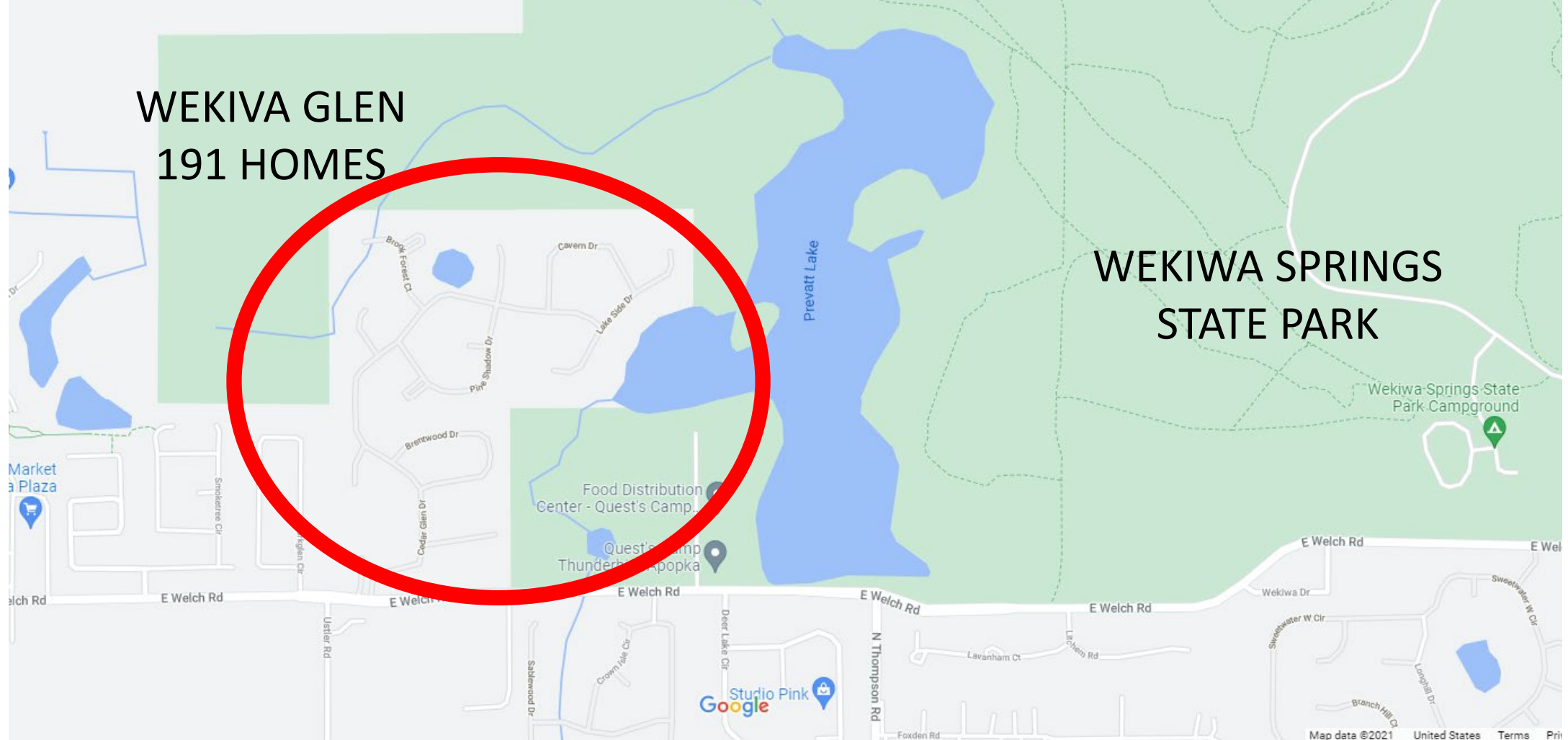
GOVERNMENT SUPPORT:

- \$2M in total grant funding available (approx. 175 installations)
- Service provided by the City of Apopka
- Treatment units installed and maintained by the City Utility Department
- Only feasible option to provide sewer services to the community

PUBLIC SUPPORT:

- Incentive-based, “First-come, First-served” program
- Community engaged through flyer campaign, dedicated City webpage
- Town Hall meeting, positive media coverage
- 30 Homeowners signed up in first 30 days
- First installations in March 2021



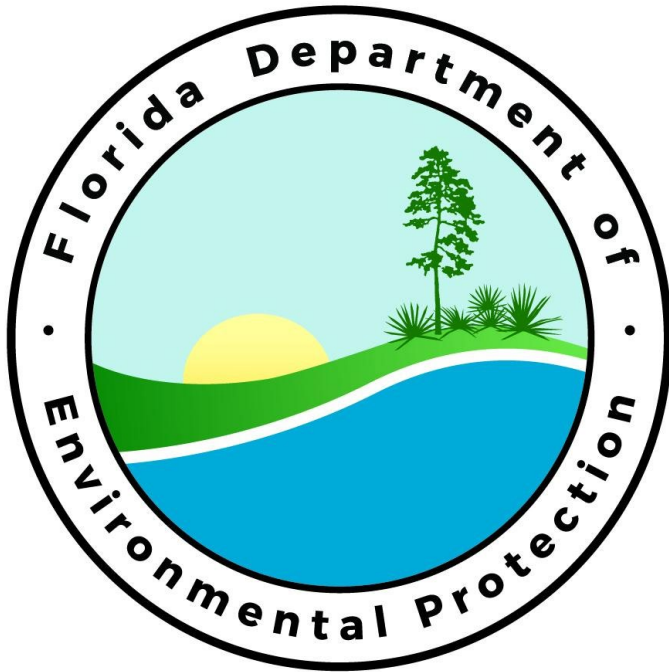


SEPTIC TO DISTRIBUTED SEWER CONVERSION PROCESS

- Site Inspection
- Electrical Connection
- Drainfield Repair (Optional)
- Abandon Septic Tank
- Install DWTU
- Commissioning
- Site Restoration (Sod)
- Ongoing Service by Utility
- Regulatory Oversight by FDEP



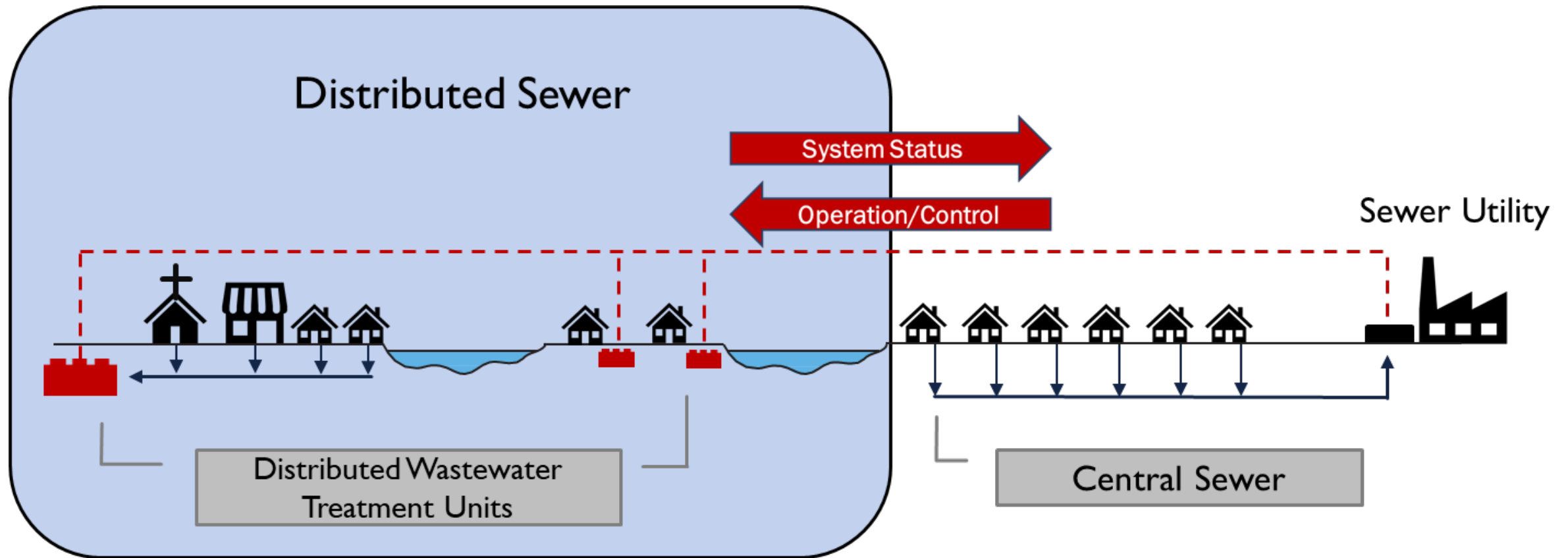
REGULATORY APPROACH



A **Distributed Wastewater Treatment System (DWTS)** is a category of “Domestic Wastewater Treatment Facility,” consisting of multiple individual **Distributed Wastewater Treatment Units (DWTU)**, each of which are “Treatment Works” that treat domestic waste to secondary treatment standards, and all of which are (1) commonly owned, (2) wirelessly networked together and individually (remotely) controllable (e.g. though a SCADA system), (3) operated and maintained by licensed wastewater operators, and (4) subject to the standard inspection, monitoring and reporting requirements in Chapter 62-600, F.A.C. (2020 FDEP working definition)

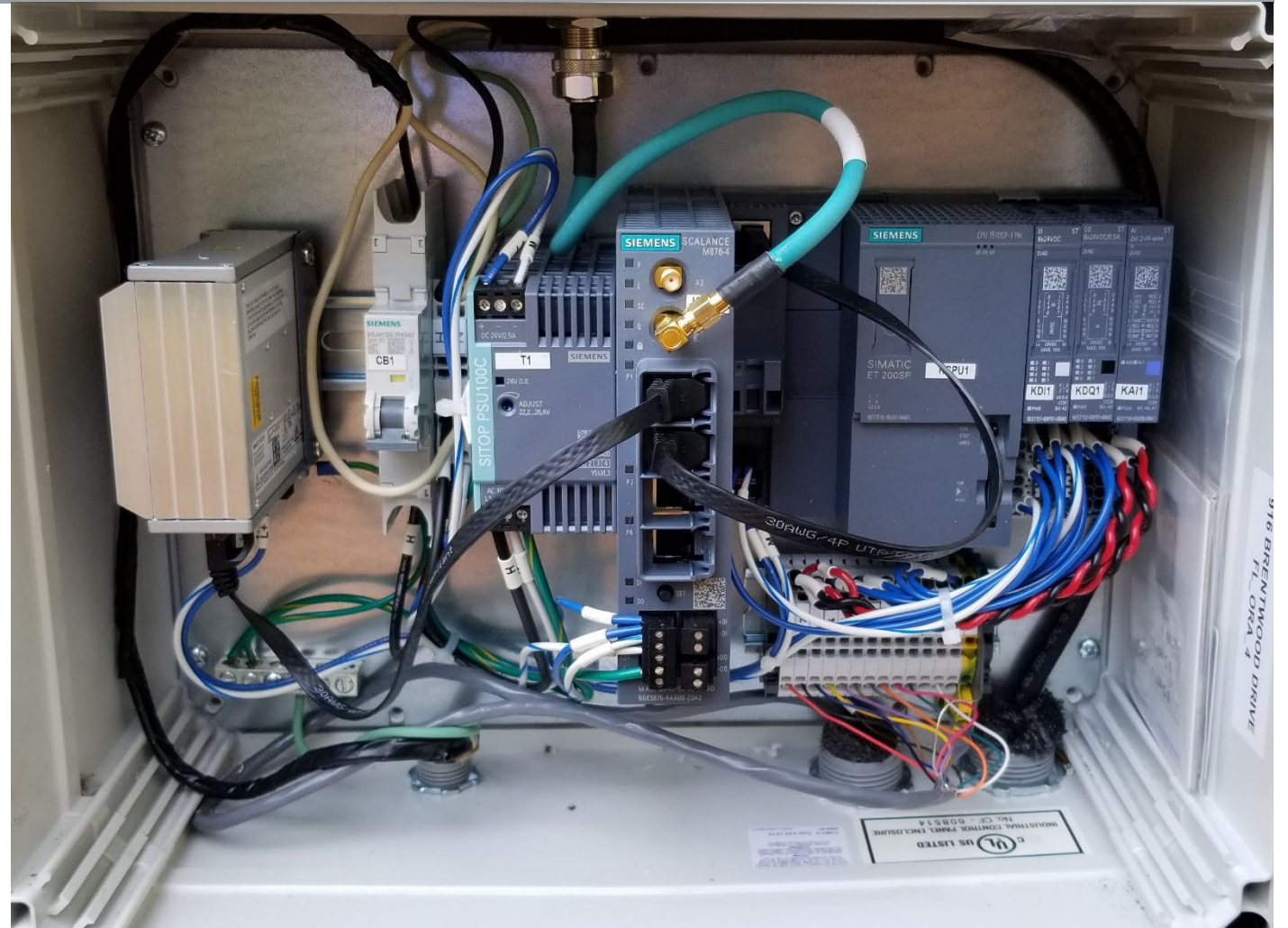
- FDEP pilot testing (2017-2019) conducted in Lake and Volusia County, FL
- First DWTS Permit issued by FDEP in April 2020
- **One DWTS permit covers an entire utility service territory**
- **Monthly sampling and lab testing for 10% of deployed units**
- **“Advanced Secondary Treatment” (equivalent) performance standards**
- Multiple DWTS Permits are issued or pending

DISTRIBUTED SEWER DECENTRALIZED TREATMENT WITH CENTRALIZED CONTROL





Leading the REVOLUTION in
Wastewater Treatment



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