Utilities Workshop
11/5/19

John A. "Jack" Walsh, P.E.
Utilities Director
City of Cocoa

Exhibit A: Utilities Presentation

24 hours a day

7 days a week

365 days a year

Team Cocoa

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FLORIDA

ONE TEAM – ONE MISSION

Agenda

- System Overview
  - Potable Water
  - Sanitary Sewer
  - Reclaimed Water
- Water Operations Activities
  - Hydrants
  - Backflows
  - Repairs
- Sewer Operations
  - Gravity – manholes, pipes
  - Other Maintenance – cleaning, camera, slip lining, force main assessment
- Reclaimed Water
- Septic to Sewer
  - Policy discussion
- Capital Project Summary
- Future
  - AMI
  - PAFB and KSC
- Questions

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System Overview

- Potable Water
  - 250 square miles of service area
  - Regional System serving multiple jurisdictions
  - Port St John to Pineda Causeway
  - Mainland to Cocoa Beach, Cape Canaveral, Merritt Island
  - Port Authority
  - 3 Federal Installations
    - NASA
    - CCAFS
    - PAFB

  84,000 service connections serving approximately ~250,000 customers

  Plant permits – 31 mgd ground, 8.8 mgd surface water

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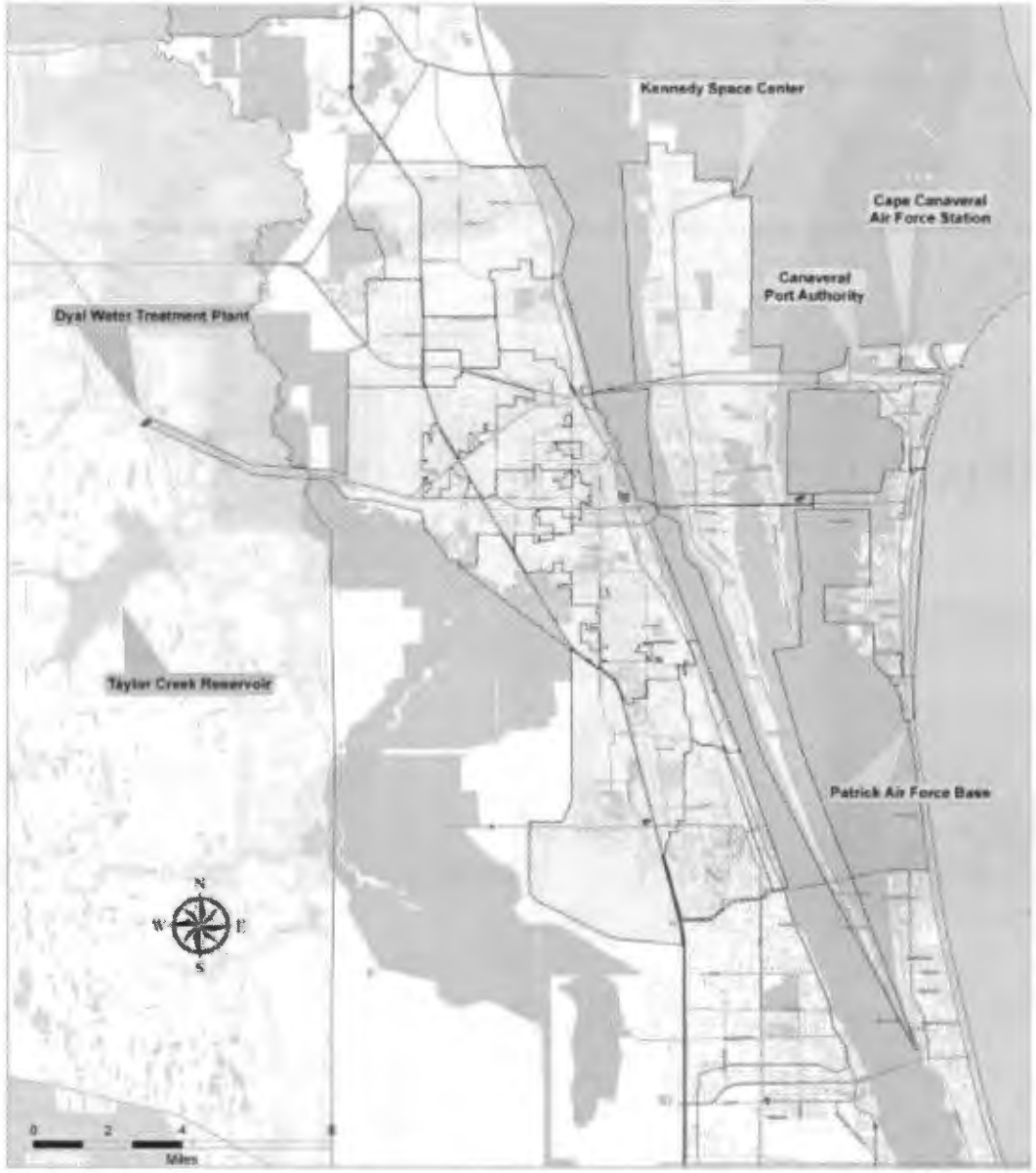

City of Cocoa Potable Water Service Area

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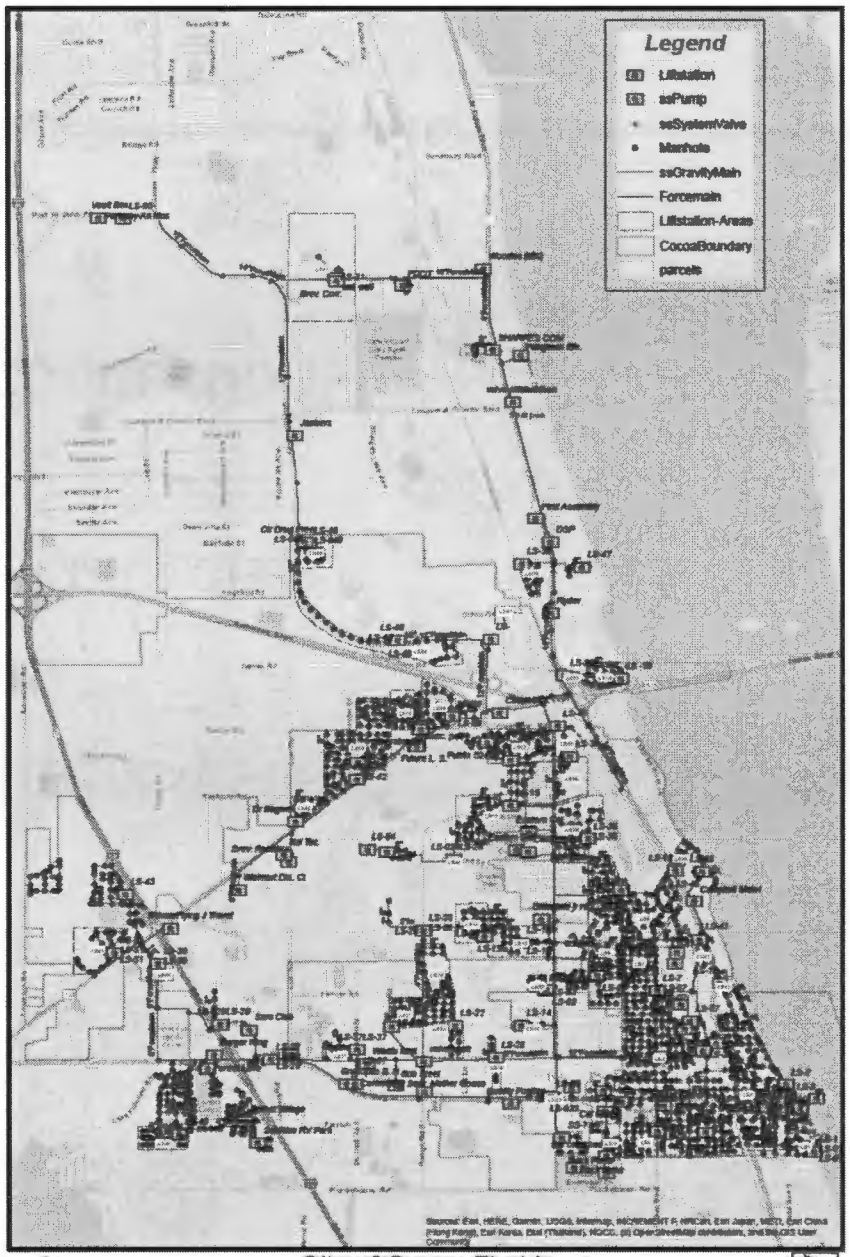
System Overview

- Sanitary Sewer
  - 15 square miles
  - City of Cocoa limits
  - 6,000 service connections
  - Plant Permitted Capacity 4.5 MGD
  - 78 Miles of Gravity Sewer // 47 Miles Force Mains
  - 1600 manholes
  - 53 Lift stations

System Overview Map



City of Cocoa Florida
Sanitary Sewer System 2019

System Overview

- Reclaimed Water System
  - 15 square miles
  - City of Cocoa limits only
  - 74 miles pipe
  - 2,221 service connections

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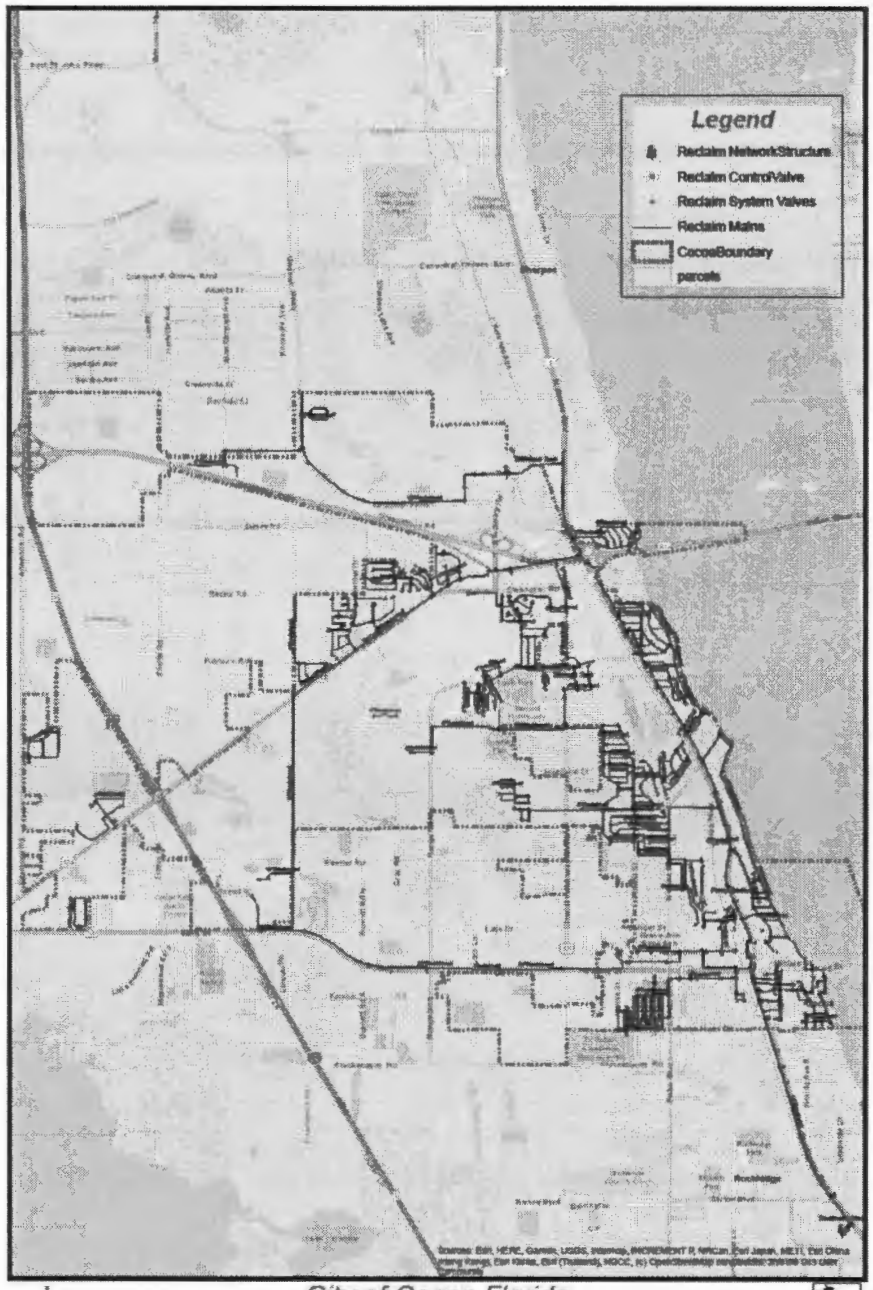
System Overview Map



City of Cocoa Florida
Reclaim Water System 2019

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Water Field Operations Activities – FY18 thru FY19

CITY STAFF
Work Orders – 12,537
Breaks - 225

ASSESSMENTS
Subaqueous Pipe – 6,200 ft.

REPAIRS
Valves & Hydrants – 10
Subaqueous Pipe Repair (Indian River)

Restoration (Mill & Resurface) – 11 sites

2018

2019

CITY STAFF
Work Orders – 14,192
Breaks - 140

ASSESSMENTS
Valves – 7,207 (WFO & Hydromax)
Hydrants – 6,003 (WFO & Hydromax)

REGULATORY
Hazard Surveys – 170
CCC Device Testing – 6,978
CCC Device Repair and Replace – 3,643
CCC Installations (WFO) – 124

Restoration (WFO) – 217 sites
Restoration (Mill & Resurface) – 17
Restoration (Joint Projects – WFO/Contractor) – 5

Water Field Operations Activities – FY2020

- Continue Annual Programs
  - Hydrant
  - Valve Exercising
  - Backflow/CCC Program
  - Repair/WO's

- Data Base Management/Refinement

Sewer Field Operations Activities – FY18 thru FY19

ASSESSMENTS
Sewer Manholes – 800

2018

REPAIRS
CIPP Lining – 10,672 ft.
Gravity Sewer Pipe Repair – 1 site
Gravity Sewer Cleaning – 20,750 ft.

2019

REPAIRS
CIPP Lining – 6,464 ft.
Manhole Lining/Rehab – 62
Gravity Sewer Pipe Repair – 1 site
Gravity Sewer Cleaning – 60,050 ft.

Sewer Field Operations Activities – FY2020

- Continuing slip lining program
  - 1-2 miles per year
  - 17.6% of gravity system complete to date
  - No smoke testing proposed
- Manhole assessments
  - Manhole rehabilitation
- Gravity system cleaning

Sewer Field Operations Activities – FY2020

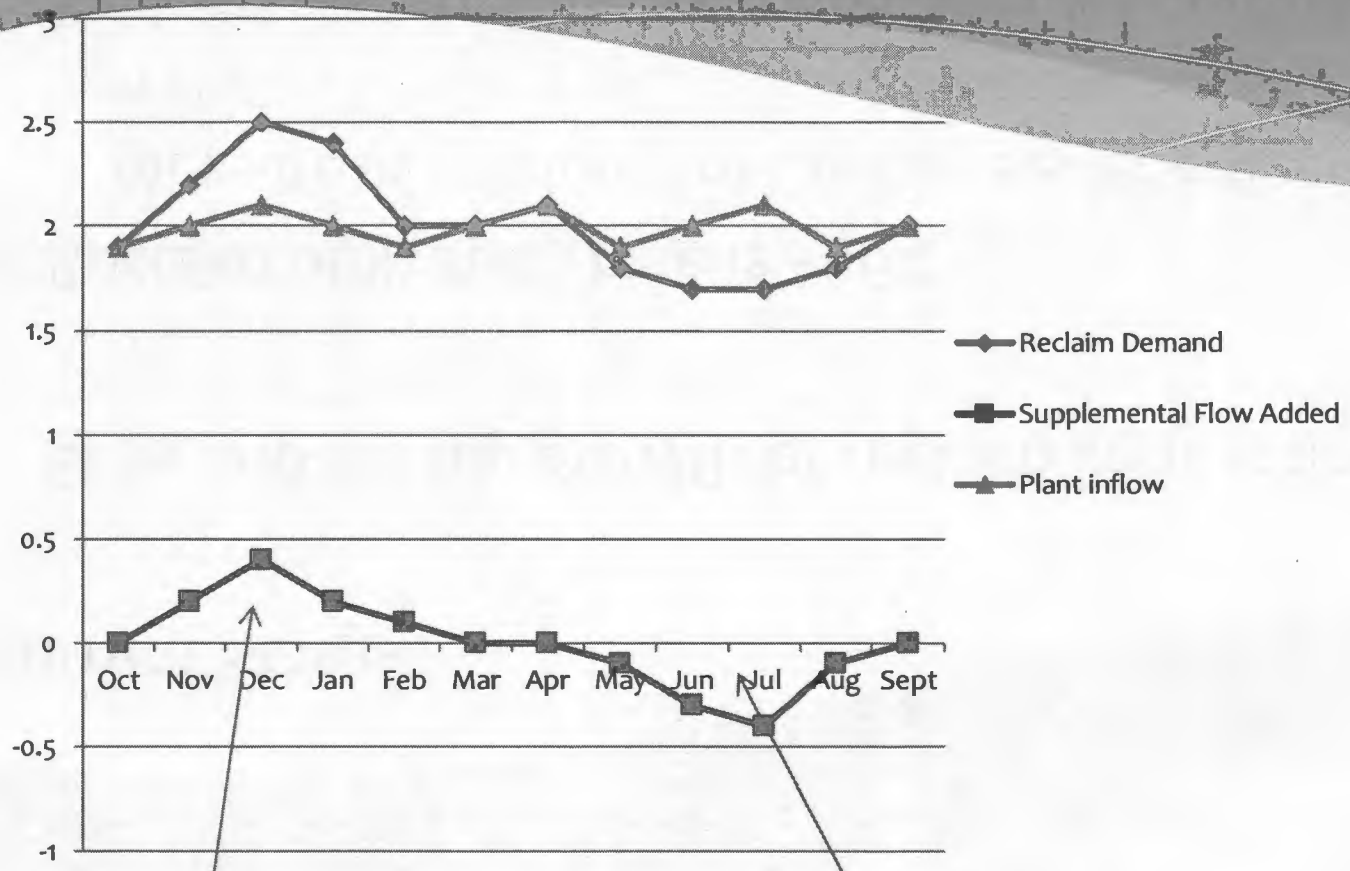
- FOG Program
  - Mitigates fats, oils greases
    - Exterior interceptors
    - Interior traps
  - Tracking new business through DRC process
  - Certified letter for cleaning required
  - Building FOG data base in GIS
  - Visiting businesses to develop relationships

Reclaimed Water

Current Status

- Slow and steady growth of reclaim connections
- Reclaim utilization rate is ~96%
  - Measure of efficiency of sanitary sewer effluent used as reclaimed water
- Reclaim system is in balance with plant influent

Reclaimed Water - Example



Use Storage or Supplemental Sources Needed

Storage Needed or Discharge

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Reclaimed Water

Future

- WQ – 26 Bracco Pond Irrigation System (Storm Water Master Plan)
- WQ - 29 2 Miles of Reclaimed Mains (Storm Water Master Plan)

Cocoa Septic to Sewer

Save Our Indian River Lagoon - Funded

- Funding available for areas "J' and "K"
- Scope and tasks
  - Geotechnical, Surveying, Engineering – Bussen Engineering Group
- Schedule – approximately 10 months for plans
  - Community meeting necessary (anticipated Feb/March)

Septic to Sewer Funding

- **SJRWMD Cost Share**
  - District Wide
    - 33% funding construction costs
    - $1.5M max per year
      - AWS/conservation
      - Flood
      - Natural systems
      - Water Quality/ nutrient loading
        - located within 0.25 miles water body (0.5 in 2021)
        - local ordinance enforceable
        - 50% commitment or better

Septic to Sewer Funding

- SRF Loans
  - Low interest loans for infrastructure projects
    - Loan, not a grant
    - Interest rates are below market
    - 20 year loan
    - Repayments starts after completion of the project
      - credit for Davis Bacon and American Iron
    - Requires facility master plans
    - More extensive engineering, needs alternatives
    - Certified payroll during construction,
    - 2% loan fee
    - Planning, Design or Construction can qualify

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BENEFITS of SOIRL

- The capital cost of the main line construction) gravity mains, lift stations, road repairs) will be covered by the SOIRL
- Potential overages or underestimated costs can potentially be covered
- Impact fees to new customers can be covered by SOIRL
- Service line connections, septic removals can also be covered by SOIRL thru a reimbursement by County to homeowner

Potential Challenges of SOIRL

- Money is allocated but always subject to funding availability
- City of Cocoa customers could be held liable for portions of mainline construction if not enough people connect
- City of Cocoa customers could be held liable for the O&M costs in future if not enough people connect
- Reimbursements available to customers today may not be available in future years, so connecting as soon as the project is complete is critical

Current Sewer Policy

- Current Cocoa Policy
- Code of Ordinances Chapter 22
- Article I
- Section 22-3
- (c) **It shall be unlawful to install or to permit installation of a septic tank or other onsite sewage treatment or disposal system on any property within the city if the city's sewer system is available to serve the property**

Sewer Policy - continued

- (e) The owner of all new houses, buildings or properties used for human occupancy, employment, recreation or other purposes situated within the city or outside the city and within the city's sewer service area pursuant to ch. 57-1232, Laws of Florida, **and abutting on any easement, street, alley or right-of-way** in which there is now located or may in the future be located an available public sanitary sewer of the city, **is hereby required at the owner's expense to install suitable and operable toilet facilities therein, and to connect such facilities at owner's expense with the city's sewer system in accordance with the provisions of this Code,** the Florida Statutes and the rules and regulations of the State Department of Health. **Connection to such facilities shall occur within three hundred sixty-five (365) days notice of availability of services**, in conjunction with a new development project, or as otherwise provided by law.

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Sewer Policy - continued

- Current Cocoa Policy
- Code of Ordinances Chapter 22
- Article I
- **Section 22-9**
- (e) *Owner to bear costs.* **All costs and expenses incidental to the installation and connection of the building sewer shall be borne by the owner.** The owner shall be responsible to the city for any loss or damage that may directly or indirectly be occasioned by the installation of the building sewer.

Sewer Policy - continued

- Current Cocoa Policy
  - DISCUSSION
    - Develop an enforcement on current policy – 365 days to connect, no current consequence
  - OPTIONS
    - Charge customers the readiness to serve fixed fee
    - Create a penalty for non- compliance
    - What if County seeks return of cash due to non-compliance?
      - No minimum percentage to connect has been established
      - who pays for this impact?

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Capital Project Update

Project: North Tropical Trail Looping Improvements (WS1431)

Residents of the Chase Hammock Road segment have been switched over to new 8" DIP water main. The Contractor is currently removing the old Asbestos Concrete water main.

* Located on two (2) areas of North Tropical Trail & one (1) area of Chase Hammock road.
* Scope includes the construction of approx. 7,100 feet of 8" DIP water main at these locations. Followed by the removal of approx. 3,600 feet of old 6" AC water main on CH road.
* Const. Cost = $1,196,754.19 (approx. $1.2 Mil)
* Currently 89% Complete
* Anticipated substantial completion 11/29/19
* Bond-Funded

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Capital Project Update

Project: Reactor Clarifier #1 Effluent Pipe Replacement (WS18DP)

The Contractor has removed old 48" steel pipe and butterfly valve (50+ years old) and is now preparing to install NEW 48" steel pipe and butterfly valve.

* Located at Dyal Water Treatment Plant
* Scope includes the removal and replacement of 48" reactor clarifier #1 effluent pipe and 48" butterfly valve.
* Const. Cost = $317,198.00 (approx. $0.32 Mil)
* Currently 86% Complete
* Anticipated substantial completion 11/02/19
* Bond-Funded

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Capital Project Update

Project: Groundwater Filters #1 and #4 Rehab (WS19FR)

The Contractor is currently working on rehabilitating Filter #1 at Dyal Water Treatment Plant.

* Located at Dyal Water Treatment Plant
* Scope includes the removal and replacement of filter media and underdrain caps in GW Filters #1 and #4.
* Const. Cost = $518,073.00 (approx. $0.52 Mil)
* Currently 12% Complete
* Anticipated substantial completion 02/28/20
* Bond-Funded

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Capital Project Update

Project: Cidco Tank Ladder Repair (WS19LR)

Contractor has repaired and replaced ladder rungs and standoffs that lost their structural integrity (e.g. left picture). The Contractor has also replaced the fall arrest system and installed anti-slip rung tape.

* Located on Cidco road, Cocoa, FL
* Scope includes the replacement and repair of corroded ladder rungs, standoffs and the replacement of the fall arrest system.
* Const. Cost = $44,000
* Currently 95% Complete
* Achieved substantial completion 10/14/19
* Bond-Funded

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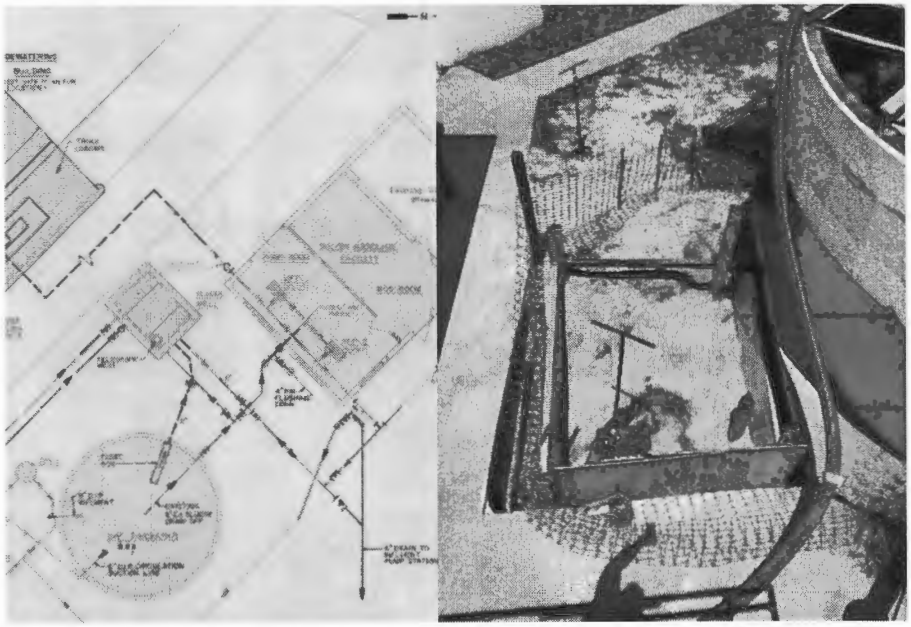
Capital Project Update

Project: Sludge Valves Replacement (WS19SS)



* Located at Sellers Water Reclamation Facility
* Scope includes the replacement of seven (7) plug valves and connecting piping and appurtenances between the sludge thickeners, digesters and filter press .
* Const. Cost = $84,700
* Anticipated Start Date 10/28/19
* Anticipated substantial completion 12/18/19
* Bond-Funded

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Capital Project Update

Projects in Design: Michigan Ave FM and Reclaim (WS17MI)

* Scope includes the installation of 2,400 linear feet of 10" FM and 1,200 feet of 6" Reuse main along Michigan Avenue to connect the existing FM and Reuse mains on US1 and Clearlake Road.
* Construction Estimate - $740,000
* Anticipated to Award construction contract in spring 2020.

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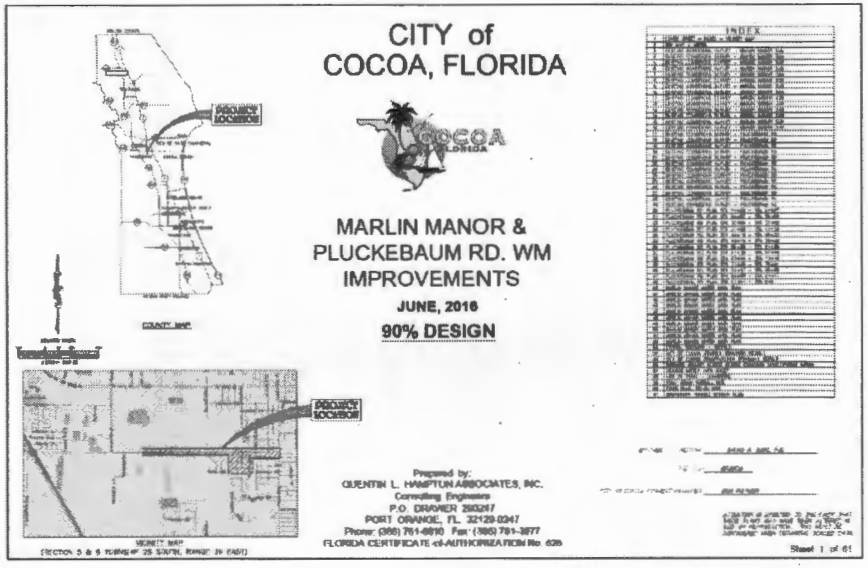
Capital Project Update

Projects in Design: Marlin Manor WM Improvements (WS16MM)

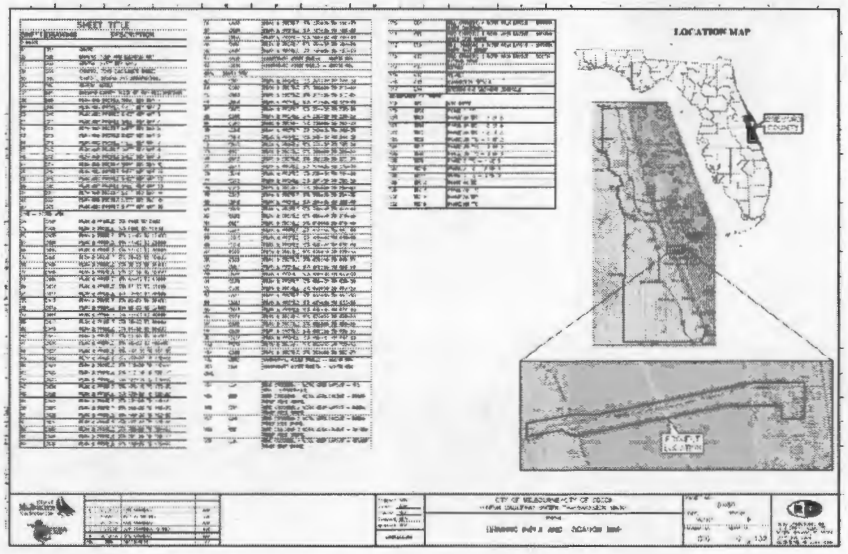
* Scope includes the replacement of approximately 7,000 feet of water main within the Marlin subdivision, 1,500 feet of water main along Revilla Lane, and 6,800 feet of water main along Pluckebaum Road. Additional improvements include the addition of new fire hydrants, service lines, and meters with backflow preventers.
* Construction Estimate - $2,000,000
* Anticipated to Award construction contract in spring 2020.



Capital Project Update

Projects in Design: Pineda Water Main Crossing (WS18MI)

* Scope includes approximately 20,000 linear feet of 16" water main installed via open cut, jack and bore, and HDD installation methods. The pipe will run adjacent to the Pineda Causeway and tie into our existing system at Wickham Road, US1, Tropical Trail, and will terminate on Pineda in the ROW adjacent to Patrick Air Force Base.
* Joint project with the City of Melbourne.
* Construction Estimate (Cocoa Portion) - $12.9 Mil
* Anticipated to Award construction contract in spring 2020.



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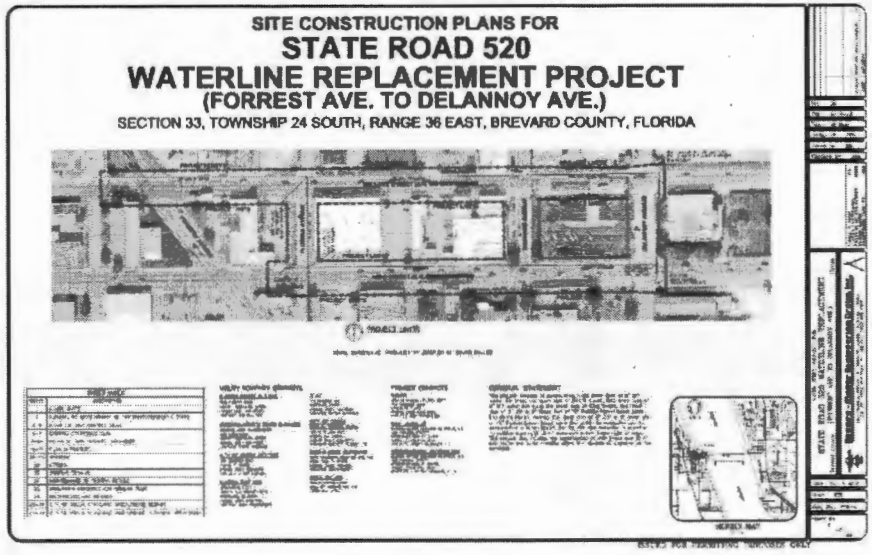
Capital Project Update

Projects in Design: SR 520 Water Main Improvements (WS1309)

* Project scope includes the construction of 1,200 linear feet of 8" water main within Willard Street, 850 linear feet of 8" water main within King Street, 270 linear feet of 8" and 10" water main within Florida Avenue, 250 linear feet of 8" and 10" water main within Dellanoy Avenue. The project also includes the construction of 1200 linear feet of 4" reuse main within Willard Street. Mains will be installed using open cut, and horizontal directional drilling.
* Construction Estimate - $1,600,000
* Anticipated to Award construction contract in spring 2020.



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Future

- **Advanced Metering Infrastructure**
  - Completed study and financial analysis by Jacobs Eng., Inc.
    - Enhanced customer service access
    - Minimizes misreads, rereads,
    - Approximately 10-12% ROI, 8 year payback
    - $18-20M investment – needs its own bond issuance
    - Re-purpose meter readers to Field Services
    - Schedule to be determined based on funding and city wide Enterprise Platform changes.

* Previous study completed by WRA, Inc. recommended future AMI conversion

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Future

- **Advanced Metering Infrastructure - continued**
  - Significant avoided costs
    - Avoid 9,000 billing reads
    - 14,000 maintenance reads
    - 18,000 move in/move out

    Estimated 20,000 labor hours per year!
  - Annual average benefit to the City
    - $2.25M

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Future

- **PAFB and KSC Infrastructure Privatization**
  - RFQ for water and sewer on hold by Federal Government
  - Letters of Interest requested and submitted
  - Significant costs to prepare and RFQ ~ $1.5M
    - May require significant staffing changes and organizational changes for the utilities system

Capital Projects

Fiscal Year	Capital Program Annual Expenditure	
2010	$256,828	
2011	$408,298	
2012	$11,200,470	
2013	$13,435,742	
2014	$18,360,228	
2015	$16,410,854	
2016	$14,978,123	
2017	$17,480,197	
2018	$8,696,986	
2019	$6,113,741*	
TOTAL	**$107,333,276**	

* Data from Jacobs Eng. – Utilities Program Sept. 2019 Report

Website Information

You are here: Home

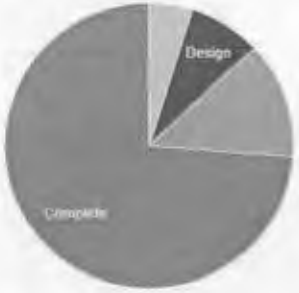
- CIP Home
- Utilities Capital Improvement Program
- Water Supply
- Water Treatment
- Water Transmission and Distribution
- Wastewater Collection and Conveyance
- Reclaimed Water Transmission and Distribution

Official Cocoa, FL Website
CocoaFL.org

Cocoa Utilities Capital Improvement Program Dashboard

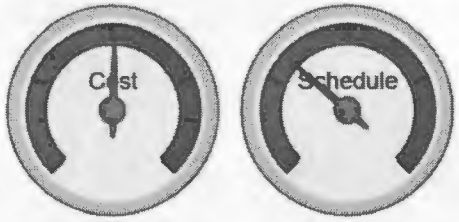
Current Statistics as of Sep. 27, 2019

Overall Progress



Cost & Schedule Performance

Program is on budget and behind schedule.



	Phase	Projects
	Planning	3
	Design	5
	Bid	0
	Construction	8
	Complete	45
	Total Projects	61

QUESTIONS?

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