



PW/Utilities Connection



August 2006

Utilities Data from July 2006 City of Melbourne Public Works & Utilities Department

South raw water intake structure improved in Phase II

The project to renovate the south raw water intake structure is one of the primary components of Phase II of the Surface Water Treatment Plant Improvements. The intake structure is located in the middle of Lake Washington near the river channel. There is also a backup raw water intake structure on shore to the north of this primary unit.



South raw water intake structure on Lake Washington.

The renovations will make the structure much safer and accessible for the employees who need to maintain it, and it will improve the quality of the raw water entering the plant for treatment.

“This new platform and stairway will make the structure safer for our employees,” said Assistant Public Works & Utilities Director Harold Nantz. “For instance, before, on windy days, if they needed to do maintenance, they would have to jump from the rocking boat to the structure. With the new platform, they will be able to simply tie up the boat and safely step over to the platform. Also now, if they have to go out at night, with the new electrical system that’s being installed, they can bring a generator with them to power up more sufficient lighting.”

The platform and stairway will be used by City maintenance crews to access the structure to remove vegetation, and to service the navigation lights and the solar panel.

In addition to the platform, the project also includes rehabilitating the intake and outlet gates, and the bar screens, which had all deteriorated. This intake structure was originally built when the plant was constructed in 1950’s. It had changed little since then.

In total, the project includes replacing the gates and screens on four inlets into the intake structure, replacing the existing bar racks, and replacing two outlet pipe valves. Two 30-inch outlet pipes carry the water from the intake structure to the south raw water pump

station.

“There are high and low inlets to bring the water into the structure,” Nantz explained. “Depending on the situation, we can shut off either of the inlets.”



Assistant City Engineer Martha Campbell, who is project manager for the Phase II project, examines the work taking place at the intake structure, along with Water Production Superintendent Fred Davis.

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Monthly Water Usage and Raw/Finished Water Quality Statistics

Water Usage

- ◆ Water pumped to service: 470,951,000 gallons or 15.192 MGD average
- ◆ Maximum finished water pumped to service: 16.411 MGD on July 1, 2006
- ◆ Fire hydrant flushing: 20,002,375 gallons
- ◆ Committed capacity: 3.5432 MGD
- ◆ Capacity available for development: 7.1869 MGD (Based on 12-month average daily flow)

Water Quality Statistics

Lake water

- ◆ Level: 14.19 feet above MSL on July 31, 2006 (Prior month comparison: 13.53 feet on June 30)
- ◆ pH: 7.8
- ◆ Alkalinity: 83 mg/L

- ◆ Total hardness: 160 mg/L
- ◆ Chlorides: 111 mg/L
- ◆ Color: 98
- ◆ Total dissolved solids (TDS): 365 mg/L

Well water

- ◆ pH: 7.7
- ◆ Alkalinity: 121 mg/L
- ◆ Total hardness: 647 mg/L
- ◆ Chlorides: 781 mg/L
- ◆ Color: 7
- ◆ TDS: 1,673 mg/L

Finished water - pumped to service

- ◆ pH: 8.3
- ◆ Alkalinity: 39 mg/L
- ◆ Total hardness: 110 mg/L
- ◆ Chlorides: 89 mg/L
- ◆ Color: 3

Official week puts focus on water and wastewater operators

Water plant operators are typically very committed individuals who take their responsibilities extremely seriously.

"We're not just treating water, but we're making sure it's safe for all the citizens, including little children and babies," said Operations Supervisor Cody Wells, who has been employed at the City's water treatment plant as an operator for the past 22 years and is an "A" licensed operator. "It's a rewarding job. My whole career will be spent here."

Regulatory Compliance Coordinator Joan McGaughey, who has been at the plant for the past 33 years and also holds an "A" license, echoed Wells' sentiments. Her passion for the business is demonstrated in her continual giving back to the field in which she is so actively entrenched.

She is currently serving as District III (which covers all of Brevard County) Director for the Florida Water and Pollution Control Operators Association (FWPCOA). She has been an active member for more than 30 years. The organization officially began in 1940

and has 13 regions throughout Florida. There are 250 members in Brevard County and 5,000 members statewide.



Joan McGaughey and Cody Wells discuss report.

The week of August 7 - 11 has been proclaimed by Governor Jeb Bush, Mayor Harry Goode and by many other elected officials throughout the state as Florida Water, Wastewater and Systems Operators Week. The week serves to recognize the efforts of the water and wastewater industry employees to protect public health and the environment.

An FWPCOA member, Wells is advocating the field by presenting a DVD to high school guidance counselors that encourages students to

consider careers as water and wastewater plant operators.

"People in the water and wastewater business are concerned that young people aren't coming into the field. Who will fill our shoes when we retire?," Wells said. "The students really don't know about it, so I want them to be exposed to this video and learn about all the opportunities there are in this field."

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Wastewater Treatment Operational Summary and Reuse Statistics

D.B. Lee WWTP

- ◆ Treated this month: 155.74 MG
- ◆ Treated daily: 5.02 MGD
- ◆ Reuse production — total month flow: 50.28 MG
- ◆ Reuse average daily flow: 1.62 MGD
- ◆ Reuse number of days run: 31
- ◆ Plant efficiency, BOD removal: 99.40%
- ◆ Committed capacity: 1.0472 MGD
- ◆ Capacity available for development: 0.3753 MGD
(Based on 12-month average daily flow)
- ◆ Rainfall: 8.85 inches over 14 days

Grant St. WWTP

- ◆ Treated this month: 102.87 MG
- ◆ Treated daily: 3.32 MGD
- ◆ Reuse production — total month flow: 4.97 MG
- ◆ Reuse average daily flow: 0.16 MGD
- ◆ Reuse number of days run: 31
- ◆ Plant efficiency, BOD removal: 99.02%
- ◆ Committed capacity: 1.7132 MGD
- ◆ Capacity available for development: 0.4218 MGD
(Based on 12-month average daily flow)
- ◆ Rainfall: 5.84 inches over 11 days

A total of 55.25 million gallons of reclaimed water was produced during May, representing 21 % of total plant flows.

Break causes early replacement of Pirate Lane storm pipe

Pipes, like the weather, can be unpredictable. Take for instance a large-diameter pipe under Pirate Lane near Palm Bay High School. The pipe had been scheduled for replacement a few years ago but the bids had come in well over budget. As a result, the project had been delayed but the money had remained available. Unfortunately, before more revenue could be instated into the budget to cover the increased project cost, staff recently discovered a sinkhole in the road demonstrating the pipe's collapse.

There was adequate funding to replace the deteriorated section with corrugated metal using in-house crews. This type of pipe is not the best for the greatest longevity — either concrete or metal with a cured-in-place liner would last longer. One of these longer-term solutions is still planned, however, thanks to a developer's preliminary plans for a new subdivision adjacent to this section of the road. The development will require the widening of Pirate Lane and will include replacing the pipe as part of the widening. The existing pipe couldn't wait for plans to be



Dave Riley and Gator Hembree bring dirt to grade to prepare for paving following pipe installation. Involved also were Foreman Joe Gervais, along with Joel Mendola, Troy Parsons, Brian Harrison, Matt Carter, Josh Murwin, Silas Scott, and John Clark.

approved and for construction to proceed. Fast action had to be taken. In just two weeks, the Streets & Stormwater Management Division recently completed replacing the 140-feet of 96-inch elliptical pipe with the new corrugate metal pipe, for which the entire project cost approximately \$40,000.

"To have a contractor install concrete pipe it would have cost about \$198,000," said Assistant Superintendent Dennis Burke.

"When construction starts on the new development and

road widening, the contractor can either line this pipe or replace it with concrete pipe," Burke said. "Either way it will make it last indefinitely."

Similar to a recent stormwater pipe replacement project under Croton Road, crews had to work around water and wastewater lines, holding them in place with straps tied around poles crossing the excavation site.

For the benefit of students, parents and school bus drivers alike, the City completed the work just prior to the start of the new school year.

Streets and Stormwater Management Monthly Summary

- ◆ Daytime street sweeper — hours run: 102.5
Cubic yards of material removed: 160.5
- ◆ Nighttime street sweeper — hours run: 67
Cubic yards of material removed: 104
- ◆ Asphalt repairs made: 25
- ◆ Tons of asphalt used: 32.5
- ◆ Feet of canals cleaned mechanically: 4,682
- ◆ Acres treated through aquatic spraying: 21
- ◆ Feet of storm drain pipe lined: 450
- ◆ Concrete repairs: 29
- ◆ Cubic yards of concrete used: 49.5

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Summer intern working to expand City's GIS database

Some might describe summer intern Eliza Gonsalves as a super achiever. During her summer break from Dartmouth College, the Ivy League school in New Hampshire, she has been working hard for the City collecting GIS data (geographic information system) and inputting it into the computer.

She usually spends half a day in the mornings out collecting the data, and then the afternoon inputting it into the system.

Her summer stint will end September 15, and then she will travel back to New Hampshire on Sept. 18, ready to start her second year of college the following week.

There she will resume classes toward her major in

physics and astronomy. Her education is being funded through several scholarships she earned after obtaining a 3.98 GPA at Eau Gallie High School.

She graduated in 2004 with honors as the Salutarian and an AP Scholar with Distinction Award, along with a 4.0 GPA from B.C.C. dual-enrollment classes she had been taking during high school.

A Florida-native, Gonsalves chose Dartmouth because of its small size, academic reputation, and to see what it is like living up north.

"The winter was pretty awesome.

It was only the third time I had seen

snow," Gonsalves said. "The campus (in Hanover, right next to Vermont) is beautiful."



Intern Eliza Gonsalves

What's Done, What's Underway and What's Coming Up

Water Projects

Under Construction:

- ◆ St. Andrews water line replacement, \$10,000
- ◆ Phase II surface water treatment plant improvements, \$11,322,000
- ◆ Miscellaneous two-inch to six-inch waterline upgrades, \$874,857

Under Design or in Bid

Process:

- ◆ Wickham Road ground storage tank and booster pump station
- ◆ Automatic transfer switch and generator enclosure at the surface water treatment plant's belt press building
- ◆ Pineda Causeway 16" water main
- ◆ Wickham Road 8" water main
- ◆ Babcock Street water line relocation between Fee Avenue and Melbourne Avenue
- ◆ 36" water main clearing, Phase II
- ◆ Waterlines in annexation areas — Deerwood and El Dorado
- ◆ Rehabilitation to RO wells #1, 2 & 3
- ◆ Backup well #4
- ◆ Unidirectional flushing program

& Individual Distribution System Evaluation (IDSE) plan

- ◆ Water model update
- ◆ Harlock Rd water main extension
- ◆ 2006 Miscellaneous water line replacement projects

Wastewater Projects

Under Construction:

- ◆ St. Andrews lift station and subaqueous force main, \$33,500
- ◆ Various CIPP sewer line rehabilitation projects, Wastewater Collection: \$867,143, Wastewater Treatment: \$423,000
- ◆ Lift Station #43 (Front Street) upgrade, \$567,000
- ◆ Bell Street sewer aerial crossing, \$140,000

Under Design or in Bid

Process:

- ◆ Reuse master plan
- ◆ Water & Wastewater Operations maintenance building
- ◆ Lift Station #55 upgrade
- ◆ Electrical upgrade to the sludge

belt press building at D.B. Lee and Grant Street WWTPs

- ◆ D.B. Lee WWTP administration building
- ◆ Lift Station #29 (Aurora & Marywood) and Lift Station #46 (BCC) renovations
- ◆ Grant Place lift station and force main
- ◆ Reuse interconnect

Streets & Stormwater

Projects

Under Construction:

- ◆ Eber Road widening from Babcock Street to Dairy Road, \$3,840,879
- ◆ Various CIPP pipe rehabilitation projects, \$855,000

Under Design or in Bid

Process:

- ◆ Babcock and Hibiscus intersection improvements
- ◆ Gramling Park Road drainage improvements
- ◆ Melbourne Avenue drainage at Pennwood Avenue

For more information, contact the Melbourne PW/Utilities Administration Department at (321) 674-5761 or e-mail utilitiesadmin@melbourneflorida.org