



PW/Utilities Connection



May 2005

Utilities Data from April 2005 City of Melbourne Public Works & Utilities Department

Late night tie-in begins wastewater flow regulating valve work

A project was recently completed without a hitch, thanks to a great deal of pre-planning, coordination and cooperation. The project was part of the ongoing Phase III demolition project at the D.B. Lee Water Reclamation Facility.

The demolition will soon include the removal of one of the old units — an elevated wastewater influent flow splitter. The splitter diverts flow between the north and south side treatment trains. Before it can be taken off line, however, critical piping work had to be done. The first task was to install a large flow regulating valve.

“By regulating the flow, the new valve can create additional pressure in the system which allows the lift stations to pump more efficiently,” said Roger Mansfield, D.B. Lee Wastewater Treatment Plant Operations Supervisor. “As a result, the life of the pumps will be extended.”

The initial part of the project took place beginning late at night on April 19. Staff from the Wastewater Collection Division began prep work by installing temporary piping for certain lift stations that could not be shut down due to the small size of the wet wells. The remaining lift stations, approximately 85 percent of the D.B. Lee collection system, had to be shut down starting at 1 a.m. when the actual tie-in started. It was completed at 4 a.m. Florida Design Contractors performed the tie-in. The City had pumps, hoses, lighting, tools and equipment on hand during the project as backup.

“We did the work at a time that has the lowest flow. If there had been problems, we could have had overflow in the collection system,” said Utilities Operations Superintendent Tom Hogeland. “We had planning



Workers with Florida Design Contractors work on the tie-in.

meetings where we went over every potential problem and had plans of action to handle them. We put backup systems into place and even had a dry run before we did the actual tie-in.”

Hogeland, Mansfield, City Utility Engineer Michelle Shoultz, and other staff were there throughout the night to make sure it was proceeding as planned.

Thanks to all the efforts before the work took place there were no

problems.

“It was really a great effort between City divisions,” said Public Works & Utilities Director Bob Klapproth. “It was well planned and well done.”

The next step is to make some piping modifications in order to bypass the flow splitter. Once this is complete, the old unit can be removed from service.

Gator finds home in stormwater pond



An alligator has recently made its home in the stormwater retention pond located on NASA Boulevard across from the GE building. The pond is maintained by the City. This photo was taken by Dennis Burke, Streets & Stormwater Foreman.

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Monthly Water Usage and Raw/Finished Water Quality Statistics

Water Usage

- ◆ Water pumped to service: 470,709,000 gallons or 15.69 MGD average
- ◆ Maximum finished water pumped to service: 17.065 MGD on April 20, 2005
- ◆ Water billed: 396,588,700 gallons
- ◆ Fire hydrant flushing: 16,950,820 gallons
- ◆ Fire Department water usage: 35,000 gallons
- ◆ Brevard County water usage – sewer flushing: 15,950 gallons
- ◆ Flushing and testing new water mains: 18,654 gallons
- ◆ Committed capacity: 2.3891 MGD
- ◆ Capacity available for development: 8.7161 MGD (Based on 12-month average daily flow)

Water Quality Statistics

Lake water quality

- ◆ pH: 7.5

- ◆ Alkalinity: 58 mg/L
- ◆ Total hardness: 100 mg/L
- ◆ Chlorides: 66 mg/L
- ◆ Color: 206
- ◆ Total dissolved solids (TDS): 225 mg/L

Well water quality

- ◆ pH: 7.6
- ◆ Alkalinity: 120 mg/L
- ◆ Total hardness: 643 mg/L
- ◆ Chlorides: 785 mg/L
- ◆ Color: 5
- ◆ TDS: 1,628 mg/L

Finished water quality - pumped to service

- ◆ pH: 8.2
- ◆ Alkalinity: 34 mg/L
- ◆ Total hardness: 87 mg/L
- ◆ Chlorides: 68 mg/L
- ◆ Color: 4
- ◆ Total dissolved solids (TDS): 239 mg/L

Study examining major expansion needs for wastewater lift station #43



The City's engineering consultants, Frazier Engineering, have completed a preliminary engineering report for lift station #43, which is located at

Front Street Park. The lift station handles all the wastewater flows from NASA Boulevard south, to east of the railroad tracks, an area that covers 125 acres.

According to Assistant City Engineer Martha Campbell, several developments in the harbor area triggered the need for the study.

"The lift station is at capacity now," Campbell said. "With all the new condominiums and development, it will not be able to handle it."

Campbell expects the capacity of the lift station will need to be tripled to handle the existing needs, approved development, and for future land use. It currently handles

46,000 gallons of wastewater per day.

Design should be completed this summer. The project is expected to go out for bid at the start of the new fiscal year next October.

Storage building under construction



L.A. Construction of Merritt Island is beginning work on a \$98,000 pre-engineered 30-foot by 70-foot metal building at the City's surface water treatment plant. When complete, the building will be used for storage of vehicles and equipment used for plant maintenance. These include a front-end loader, fork lift, trailered pumps and generators, and other equipment. Storage has been outside. With the new inside storage, the life of all the equipment should be greatly extended.

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Wastewater Treatment Operational Summary and Reuse Statistics

D.B. Lee WWTP

- ◆ Treated this month: 129 MG
- ◆ Treated daily: 4.30 MGD
- ◆ Reuse production — total month flow: 50.64 MG
- ◆ Reuse average daily flow: 1.69 MGD
- ◆ Reuse number of days run: 30
- ◆ Plant efficiency, BOD removal: 99.1%
- ◆ Committed capacity: 0.8735 MGD
- ◆ Capacity available for development: 0.5572 MGD
(Based on 12-month average daily flow)

Grant St. WWTP

- ◆ Treated this month: 98.32 MG
- ◆ Treated daily: 3.28 MGD
- ◆ Reuse production — total month flow: 10.53 MG
- ◆ Reuse average daily flow: 0.35 MGD
- ◆ Reuse number of days run: 30
- ◆ Plant efficiency, BOD removal: 98.2%
- ◆ Committed capacity: 0.8525
- ◆ Capacity available for development: 1.4199 MGD
(Based on 12-month average daily flow)

Several drainage projects improving local neighborhoods

Two drainage projects are underway that will benefit local neighborhoods.

First, the Sherwood Park drainage improvements project has recently begun. The project involves removing 134-feet of old metal pipe and installing 600-feet of pre-cast concrete pipe. The old 60-inch metal pipe is failing, according to Streets and Stormwater Management Assistant Superintendent Mike Giorgio.

"When the project is complete, the new pipe will carry more water than the existing pipe while eliminating the erosion problem that had been occurring, and it will be easier to maintain," Giorgio said.

Because of inadequate drainage, some local homeowners have been losing their yards and fences to



Work is underway to construct the concrete head wall to prevent erosion and stabilize the bank around the pipe.

erosion. This was making it impossible for City crews to access the ditches to perform maintenance.

J.P. Donovan Construction, Inc. of Titusville is the contractor for this \$358,285 project. The work is scheduled to be completed by June 7.

In other neighborhood drainage work, the City is performing an in-house project at Avenue A and Babcock Street. There is only surface drainage in this neighborhood of older

homes. Two houses sit in the lowest area and have had flooding problems in the past. The project will provide for two new drainage inlets and larger pipes that will take the water away more quickly. Giorgio said that next fiscal year a study will be done for the whole area to determine other measures that can be taken.

Streets and Stormwater Management Monthly Summary

- ◆ Daytime street sweeper — hours run: 138
Cubic yards of material removed: 216.5
- ◆ Nighttime street sweeper — hours run: 101
Cubic yards of material removed: 105.5
- ◆ Asphalt repairs made: 47
- ◆ Tons of asphalt used: 23
- ◆ Canals cleaned mechanically: Crane Creek
- ◆ Acres treated through aquatic spraying: 20
- ◆ Feet of storm drain pipe repaired: 300
- ◆ Concrete repairs: 30
- ◆ Cubic yards of concrete used: 56.75

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April Highlights

The level of Lake Washington decreased during the last month. At the end of April, the lake level was 14.53 feet above sea level. This compares to the lake level at the end of March, when it was 15.14 feet above sea level. Water quality remains good.

The D.B. Lee Wastewater Treatment Plant recorded 1.45 inches of rain during three days in April. The Grant Street Wastewater Treatment Plant received 3.95 inches of rain over 7 days during April. A total of 58.19 million gallons of reclaimed water was distributed during April. This represents 26% percent of total plant flows for April.

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

Water Projects

Recently Completed:

- ◆ Hibiscus booster station electric shut-off valves, \$75,777

Under Construction:

- ◆ Parkway Drive and Turtle Mound water line extension, \$657,000
- ◆ Waterline upgrade, Olde Eau Gallie, \$347,409
- ◆ Replacement of RO membranes, \$469,000
- ◆ Water Treatment Plant storage building, \$98,000
- ◆ Fee Avenue waterline replacement under FEC, \$120,330
- ◆ Turtlemound north waterline extension, \$471,200

Under Design or in Bid

Process:

- ◆ Northern Oak water line extension
- ◆ Phase II surface water treatment plant improvements
- ◆ Utility relocation in association with NASA Boulevard realignment at Wickham Road
- ◆ Chemical feed upgrades at Canova Beach Booster Station
- ◆ Wickham Road ground storage tank and booster pump station
- ◆ Eau Gallie River sub-aqueous crossing
- ◆ Miscellaneous two-inch to six-inch waterline upgrades

- ◆ Dairy Road, US 192 and Hibiscus Boulevard water line interconnection
- ◆ Hazelwood waterline extension

- ◆ Automatic transfer switch and generator enclosure at the surface water treatment plant's belt press building

Wastewater Projects

Recently Completed:

- ◆ Lift Station 24 replacement, \$451,440

Under Construction:

- ◆ Demolition of old treatment units at D.B. Lee WWTF, \$624,700
- ◆ New monitoring network for reuse system at DB Lee WWTP

Under Design or in Bid

Process:

- ◆ Reuse master plan
- ◆ Water & Wastewater Operations maintenance building
- ◆ Lift station 55 upgrade
- ◆ Grant Street Wastewater Treatment Plant lighting upgrade
- ◆ Sarno Road force main 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 #43 (Front Street) upgrade

Streets & Stormwater Projects

Recently Completed:

- ◆ Babcock Street realignment, \$1,394,649

Under Construction:

- ◆ Sherwood Park drainage improvements, \$358,285
- ◆ Eber Road widening from Babcock Street to Dairy Road, \$3,840,879
- ◆ Pineapple Avenue pedestrian bridge at Cliff Creek, \$115,429

Under Design or in Bid

Process:

- ◆ Hoag Avenue paving and drainage improvements
- ◆ Upgrade of stormwater system at Charles Dr./Almar Subdivision
- ◆ Upgrade of existing culvert crossing under Pirate Lane
- ◆ Laurie Road drainage improvements
- ◆ Paradise Cay CIPP

For more information about this report, please contact the Melbourne PW/Utilities Administration Department at (321) 674-5761 or send an e-mail to utilitiesadmin@melbourneflorida.org