



## June 2007

Utilities Data from May 2007 City of Melbourne Public Works & Utilities Department

### Public Works hurricane season preparations underway

Lift stations go unnoticed during normal conditions but when conditions turn abnormal — for instance during a hurricane — they become critically important to people’s lives.

Wastewater flows by gravity into lift stations, which pump the flow to a higher elevation so it can continue its journey to the treatment plant. During heavy storms, the deluge of water infiltrates some of the underground pipes, greatly increasing the flow to the lift stations. If power is lost and there is no backup power source, the lift station wet well fills up and then raw sewage can overflow the structure.

To prevent such a calamity, the City has 37 permanently-installed generators at the larger lift stations in the City. The generators range in size from 30 kilowatts to 150 kilowatts.

There are 89 lift stations in the City, with more being added regularly, according to Lift Station Supervisor Darrell Manchester. Some are added as part of new large developments.

For the smaller lift stations that don’t have permanent generators, there are nine portable standby generators that are put into service when needed.

“We know how fast the lift stations will fill up so we know which ones to get to first with the portable generators,” Manchester said. “Once we get those pumped out, we go to the others, and then circle back.”

He explained that their radio telemetry system shows them which ones are down or have any other problems. These are all monitored on the computer.

The City has contracts with two companies to maintain and repair generators. Besides those for lift stations, there are many other generators used to maintain City operations. The largest are 350 kw and above that keep the power going at the water treatment and water reclamation facilities.

Fleet Management Superintendent Greg Schmidt said that maintenance on the generators is done two times per year and they are exercised weekly to ensure performance.

Schmidt said the City also has a number of contracts in place for heavy equipment rental should additional machinery be needed following a storm. This includes everything from loaders to bucket trucks, dump trucks, backhoes, pumps, additional generators, and more.

Schmidt also utilizes state and other governmental contracts for fuel and diesel to ensure adequate supplies can be obtained following storms.

If a hurricane is imminent, the Fleet Management staff ensures that all City vehicles are prepped and staged. This is necessary to lessen the possibility of damage during a storm and so they are ready to be put into service after the storm passes.

The Streets and Stormwater Management (SSWM) Division also plays an important role in protecting the City before and after hurricanes.

“We prepare all year,” said SSWM Superintendent Bill Williams. “We have one employee who does nothing but clean the ditches. Our mowers are out regularly cutting the grass to keep the stormwater from backing up. In addition, someone inspects all the ditches a minimum of once a month to make sure they are clean and that there are no blockages. We also check all the catch basins for obstructions.”

Williams also oversees sand bag production and distribution if there is a hurricane eyeing the City. There are approximately 100 tons of sand stockpiled and ready should it be necessary, and the warehouse has some 10,000 bags on hand.

If the need for sand bags arises, Williams’ crews, along with staff from Water Distribution, Wastewater Collection, and Parks Maintenance work together to fill the bags and then distribute them to Melbourne residents.



*Lift Station Supervisor Darrell Manchester checks status of lift stations at his computer.*

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Public Works/Utilities Data from May 2007

## Monthly Water Usage and Raw/Finished Water Quality Statistics

### Water Usage

- ◆ Water pumped to service: 492,907,000 gallons or 15.90 MGD average
- ◆ Maximum finished water pumped to service: 17.882 MGD on May 1, 2007
- ◆ Fire hydrant flushing: 19,655,510 gallons
- ◆ Committed capacity: 3.2539 MGD
- ◆ Capacity available for development: 7.7765 MGD (Based on 12-month average daily flow)

### Water Quality Statistics

#### Lake water

- ◆ Level: 12.42 feet above MSL on May 31, 2007 (Prior month comparison: 13.17 feet on April 30, 2007)
- ◆ pH: 8.0
- ◆ Alkalinity: 121 mg/L

- ◆ Total hardness: 165 mg/L
- ◆ Chlorides: 126 mg/L
- ◆ Color: 131
- ◆ Total dissolved solids (TDS): 365 mg/L

#### Well water

- ◆ pH: 7.8
- ◆ Alkalinity: 121 mg/L
- ◆ Total hardness: 663 mg/L
- ◆ Chlorides: 797 mg/L
- ◆ Color: 7
- ◆ Total dissolved solids (TDS): 1,735 mg/L

#### Finished water - pumped to service

- ◆ pH: 8.3
- ◆ Alkalinity: 35 mg/L
- ◆ Total hardness: 119 mg/L
- ◆ Chlorides: 102 mg/L
- ◆ Color: 3
- ◆ Total dissolved solids (TDS): 311 mg/L

## New SUV's slogan: Harbor City Hybrid ~ Think Green

What is white, blue, and green all over? The answer to the riddle can now be seen driving around Melbourne's water service area.

The newest addition to the Public Works & Utilities fleet is a Saturn Vue Hybrid model that achieves 20 percent better fuel efficiency than the standard Vue. It is outfitted with low-resistance tires, which adds to its fuel efficiency.

The hybrid Vue should achieve 27 miles per gallon in City driving, and 32 mpg on the highway. The regular Vue rates at 20 mpg in City driving, and 28 mpg on the highway.

According to Fleet Management Superintendent Greg Schmidt, the new hybrid will act as a pilot test to evaluate future purchases.

"This will be a test to evaluate its usefulness and cost effectiveness to see if the City fleet should be expanded with more of these hybrids."



*Pictured with the new Saturn Vue Hybrid are Sign Shop Technician Nehru Powell (left), Lab Technician Shaniese Alexander, Fleet Mechanic Bobby Mattingly, and Sign Shop Technician Oliver Harden.*

Schmidt said they will review the vehicle's performance annually to compare it to other vehicles in the fleet that are in the same category. They will compare reliability, fuel savings, and maintenance costs.

"We'll look at all these factors and when we need to replace other vehicles, we'll see if they should be with hybrids or some other alternative fuel vehicles," Schmidt said.

The Vue will be used by the Water Production Lab staff to collect water

samples throughout the distribution system. Almost all of the driving will be in City traffic, which optimizes the fuel savings potential of hybrid vehicles. Schmidt also expects to find a savings in maintenance costs.

The hybrid fits in with a resolution passed by City Council on March 27, affirming Melbourne's commitment to learning about and engaging in climate protection actions. The hybrid will reduce carbon emissions and reduce energy consumption.

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Public Works/Utilities Data from May 2007

## Wastewater Treatment Operational Summary and Reuse Statistics

### D.B. Lee WWTP

- ◆ Treated this month: 112.46 MG
- ◆ Treated daily: 3.63 MGD
- ◆ Reuse production — total month flow: 79.46 MG
- ◆ Reuse average daily flow: 2.56 MGD
- ◆ Reuse number of days run: 31
- ◆ Plant efficiency, BOD removal: 99.40%
- ◆ Committed capacity: 0.8114 MGD
- ◆ Capacity available for development: 1.9544 MGD  
(Based on 12-month average daily flow)
- ◆ Rainfall: 1.35 inches over 6 days

### Grant St. WWTP

- ◆ Treated this month: 76.90 MG
- ◆ Treated daily: 2.48 MGD
- ◆ Reuse production — total month flow: 11.06 MG
- ◆ Reuse average daily flow: 0.36 MGD
- ◆ Reuse number of days run: 31
- ◆ Plant efficiency, BOD removal: 99.14%
- ◆ Committed capacity: 1.4799 MGD
- ◆ Capacity available for development: 1.1118 MGD  
(Based on 12-month average daily flow)
- ◆ Rainfall: 1.13 inches over 10 days

A total of 90.52 million gallons of reclaimed water was produced during May, representing 48 % of total plant flows.

## Summer intern's civil engineering major aids department

Justin Kise, summer intern for the Public Works & Utilities Department, doesn't need to concern himself with keeping in shape during the long break from school.

He has been logging many miles walking every street in Satellite Beach. All this walking is necessary to collect information on every water meter and hydrant on a hand-held Trimble Pocket PC computer. At the end of the day, the information he collects is loaded into the City's geographic information mapping system. This information will assist both the City of Melbourne and Satellite Beach Fire Department.

Kise noted there are 9,000 water accounts in Satellite Beach and he is able to obtain 300-400 entries a day.

He has the physical conditioning for all the walking. Growing up in Palm Bay, Kise was a well-regarded



Intern Justin Kise takes data from water meter.

football player before graduating in 2003 from Bayside High School. Now a Gator, Kise will begin his fourth year at the University of Florida, majoring in civil engineering. Both of his parents also attended UF, as did several other family members.

"I always wanted to go to the University of Florida," Kise said. "My parents took me to lots of football games there ever since I was six years old."

Kise said his interest in civil engineering began two years ago when he worked that summer for a construction company installing underground water mains and sewer mains.

During the school year, Kise is the facility manager for recreational sports at the university. He is a member of the National Society of Collegiate Scholars and the American Society of Civil Engineers.

## Streets and Stormwater Management Monthly Summary

- ◆ Daytime street sweeper — hours run: 169  
Cubic yards of material removed: 331
- ◆ Nighttime street sweeper — hours run: 135  
Cubic yards of material removed: 126
- ◆ Asphalt repairs made: 28
- ◆ Tons of asphalt used: 38
- ◆ Feet of canals cleaned mechanically: 1,840
- ◆ Acres treated through aquatic spraying: 21
- ◆ Feet of storm drain pipe repaired/replaced/lined: 284
- ◆ Concrete repairs: 28
- ◆ Cubic yards of concrete used: 54.5

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## Survey work underway to determine sidewalk fix on Aurora

An existing piece of sidewalk on Aurora Road, between Commodore Boulevard and Stewart Avenue, is piecemeal in several areas. In order to evaluate replacement and construction of a new sidewalk in the area, survey work is required. The approximate length of the survey work is 2,900 linear feet.

This survey is now underway and will be completed by the end of June. It will be used to determine if

existing right-of-way is sufficient to construct a permanent sidewalk. If it is, improvements would begin this summer. If not, the City will work with Brevard County to create a more safe and convenient solution.



Section of sidewalk, partly paved and partly dirt, on the south side of Aurora Road.

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

### Water Projects

#### Recently Completed:

- ◆ 36" water main clearing, Phase II, \$63,993

#### Under Construction:

- ◆ Phase II surface water treatment plant (SWTP) improvements, \$11,322,000
- ◆ Waterlines in annexation areas — Deerwood and El Dorado, \$1,722,656
- ◆ Rehabilitation to RO wells #1, 2 & 3, \$692,725
- ◆ Backup well #4, \$1,320,900
- ◆ Harlock Rd water main extension

#### Under Design or in Bid

##### Process:

- ◆ Automatic transfer switch and generator enclosure at the SWTP's belt press building
- ◆ Pineda Causeway 16" water main
- ◆ Wickham Road 8" water main
- ◆ Eau Gallie water line replacement, Phase I, Segments V & VI; portion of segments I & II, Phase II
- ◆ Country Road annexation water line extension
- ◆ Water line upgrade at Turtle-mound Rd.-Grand Haven subdivision
- ◆ 2006 misc. water line replacements

- ◆ 2007 misc. water line replacements (Phase I - Ballard Park) & Phase II
- ◆ North water treatment plant demolition

### Wastewater Projects

#### Recently Completed:

- ◆ St. Andrews lift station and sub-aqueous force main

#### Under Construction:

- ◆ Various manhole rehabilitation projects, \$274,340
- ◆ Lift Station #55 upgrade, \$159,564
- ◆ FY '07 CIPP rehabilitation projects, \$1,200,000
- ◆ Water & Wastewater Operations maintenance building, \$571,800
- ◆ Electrical upgrade to the sludge belt press building at D.B. Lee and Grant Street WWTPs
- ◆ Crane Field reuse project
- ◆ FIT/Leonard Weaver wastewater collection rehabilitation, \$2,100,000

#### Under Design or in Bid

##### Process:

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

- ◆ Reuse master plan, phase II
- ◆ D.B. Lee WWTP admin. bldg.
- ◆ Lift Station #29 (Aurora & Mary-wood) and Lift Station #46 (BCC) renovations
- ◆ Grant Place L.S. and force main
- ◆ Sarno Road force main improvements
- ◆ Grant Street WWTP admin. bldg.

### Streets & Stormwater

#### Projects

#### Recently Completed:

- ◆ FY '06 CIPP pipe rehabilitation projects, \$855,000

#### Under Construction:

- ◆ FY '07 CIPP pipe rehabilitation projects, \$1,350,000
- ◆ Melbourne Avenue drainage at Pennwood Avenue, \$184,290

#### Under Design or in Bid

##### Process:

- ◆ Babcock and Hibiscus intersection improvements
- ◆ Gramling Park Road drainage improvements