



# PW/Utilities Connection



## February 2006

Utilities Data from Jan. 2006 City of Melbourne Public Works & Utilities Department

### Road milling and resurfacing project covers 59 City streets

Keeping all of the City's 1,378 streets in good condition requires a consistent, thoughtful approach. An annual paving and milling program has been in effect for decades, but in 2003, the approach became more analytical.

At that time, City Engineering staff rode through every street to determine condition ratings. A rating of one meant it was perfect, while a rating of five indicated the road was in serious need of repair.

Next, all the data was put into a spreadsheet which has been used to determine which streets to include in the annual street resurfacing program.

To date, all the streets with the lowest rating of five have been completed and most of the fours have also been finished.

"Sometime this summer we are going to go back and look at the entire City again and re-rank the roads," said Rory Dittmer, engineering design supervisor. "This has worked out well to keep our evaluations consistent."

This fiscal year's program started in mid-December and will be completed in mid-February. Fiscal year '04 was combined with the current fiscal year to make the project larger, and thus more cost-effective for the contractor, which kept City costs down.

The current project includes 59 streets or sections of streets. In addition to repaving, 39 of these streets are also being milled first so that all the old pavement is removed. The streets to be milled are determined by how thick the asphalt has become.

According to the Dittmer, the primary cause for asphalt decay is groundwater.

"Groundwater is our biggest enemy," Dittmer said. He explained that in some areas of the City the groundwater is 10 feet below the surface, while in others it is

just a little more than a foot. During rainy periods, the water can come up all the way to the road surface.

"Asphalt would last a very long time if it weren't for the groundwater," Dittmer said. "Truck traffic also wears it out."

APAC - Southeast, Inc., of Melbourne, is performing the work at a cost of \$906,359. The cost for asphalt, which is a petroleum-based product, has increased significantly over the past few years, with the spike in oil prices. Currently, the going rate is \$63.14 per ton, up 67% from the 2002 price of \$42 per ton. For the current year's projects, 10,239 tons of asphalt are being used.

The following streets are included in the project:

Andrews Ave., Applin Way, Arnold Dr. (north of Lee-wood), Aristocrat Dr. (Edge-wood to Senator), Avignon Dr., Banyan Dr., Bon Aire Ave. (east of US 1), Buick Ave., Cedar Dr., Cedarwood Dr., Chaffee St., Chapparal Ct., Cindy Cir., Cooling St.,

Cove Ct., Croton Rd. (Hacienda Girls Ranch exten-sion), Cypress Bend Cir. (south), Dakota Dr., Diplomat Dr., Ford Cir. East, Front St., Garfield St., Greenway Dr. (north of 192), Grissom St., Hailwood Ct., Hailwood Dr., Harbor View Dr., Hedrick Dr., Hopi Dr., Iowa Dr., Johnson St. (south of Eau Gallie), Maple Ave., Mas-ters Ln., Maxwell Dr., McKinley Dr., Meadowood Ct., Montgomery Rd., Mosswood Dr. (n. of Circlewood and n. of Aurora), Nelson Ave., New Haven Ave. (east of Hickory - to be coordinated with downtown redevelop-ment), Pine St., Pinehurst Cir., Plantation Dr., Renee Place, Rutgers St., Sadler Ln., Senator Way, Skywind Cir., Sioux Ave., St. Dunston Ln. (east of Sherwood), St. Swithin Ln. (east of Sherwood), Tompkins St., Village Park Dr., Virginia Dr. (north of Aurora), White Heron Dr., White St., Williams St., and Yukon Ct.



City Construction Inspector Calvin Oliver (r), discusses the recent repaving at Williams Street with APAC Foreman Calvin Pratt.

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

### Water Usage

- ◆ Water pumped to service: 478,030,000 gallons or 15.420 MGD average
- ◆ Maximum finished water pumped to service: 16.191 MGD on January, 11, 2006
- ◆ Fire hydrant flushing: 20,713,890 gallons
- ◆ Committed capacity: 3.1743 MGD
- ◆ Capacity available for development: 7.8056 MGD (Based on 12-month average daily flow)

### Water Quality Statistics

#### Lake water quality

- ◆ pH: 7.6
- ◆ Alkalinity: 56 mg/L

- ◆ Total hardness: 89 mg/L
- ◆ Chlorides: 55 mg/L
- ◆ Color: 165
- ◆ Total dissolved solids (TDS): 205 mg/L

#### Well water quality

- ◆ pH: 7.7
- ◆ Alkalinity: 125 mg/L
- ◆ Total hardness: 592 mg/L
- ◆ Chlorides: 675 mg/L
- ◆ Color: 7
- ◆ TDS: 1,428 mg/L

#### Finished water quality - pumped to service

- ◆ pH: 8.5
- ◆ Alkalinity: 33 mg/L
- ◆ Total hardness: 67 mg/L
- ◆ Chlorides: 50 mg/L
- ◆ Color: 3
- ◆ Total dissolved solids (TDS): 218 mg/L

## Temporary chloramination station installed beachside

The City has recently installed a temporary chloramination station at the 2 MGD Canova Beach Ground Storage Tank. The system is being used to feed chlorine and ammonia into the distribution system in order to maintain disinfection residuals at the extremities of the system.

According to Dave Phares, Assistant Water Production Superintendent, the only chlorine addition points for the north end of the beachside distribution system that were used prior to the installation of this facility were at the Avenue B chlorine booster station and at the Patrick elevated tank.

Due to rising costs, a temporary structure had to be built before sufficient funding was in place for the permanent facility. In-house staff built the pad for the structure, put the structure together, and did all the electrical and plumbing work at a cost of \$2,000. The two pumps, 650-gallon chlorine tank and

a 750-gallon containment tank are being leased, along with two 55-gallon ammonia drums and two pumps. A permanent structure had been designed by the City's engineering consultants in 2003 but construction bids came in much higher than anticipated.

"We changed some of the design elements to make sure we would get just what we wanted," Phares said. "We are going to re-fund the project, we hope in next year's budget."

He explained that the permanent structure will have more controls and monitoring capabilities, allowing for adjustments to be made offsite at the water plant if needed. It will be tied into the distribution tanks and the

disinfectant will be sent into the system during periods of high water demand.

"It will be a more robust structure and will be built to withstand hurricane force winds," Phares said.



*Assistant Water Production Superintendent Dave Phares (l) and Electronics Technician Vaughn Curry stand in front of new structure installed at the Canova Beach Pump Station.*

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Public Works/Utilities Data from Jan. 2006

## Wastewater Treatment Operational Summary and Reuse Statistics

### D.B. Lee WWTP

- ◆ Treated this month: 129.24 MG
  - ◆ Treated daily: 4.17 MGD
  - ◆ Reuse production — total month flow: 54.29 MG
  - ◆ Reuse average daily flow: 1.75 MGD
  - ◆ Reuse number of days run: 28
  - ◆ Plant efficiency, BOD removal: 98.5%
  - ◆ Committed capacity: 1.3044 MGD
  - ◆ Capacity available for development: 0.1106 MGD
- (Based on 12-month average daily flow)*

### Grant St. WWTP

- ◆ Treated this month: 88.31 MG
  - ◆ Treated daily: 2.85 MGD
  - ◆ Reuse production — total month flow: 4.68 MG
  - ◆ Reuse average daily flow: 0.15 MGD
  - ◆ Reuse number of days run: 31
  - ◆ Plant efficiency, BOD removal: 98.5%
  - ◆ Committed capacity: 1.5161 MGD
  - ◆ Capacity available for development: 0.3489 MGD
- (Based on 12-month average daily flow)*

## Determination prevents potential widespread water shut off

Dogged determination on the part of the Utilities Operations Division has prevented what could have been a huge inconvenience for thousands of Satellite Beach residents. An older beachfront condominium — Las Olas, which was built in the 1970s — had developed a leak. Water to the building would have to be turned off to make the repair. The City was called in and began a search for the valve to shut the water off, which was the only way the leak could be repaired. This would normally be an easy task to accomplish.

Not so here since no records existed to show where the valve was located. It appeared the only option was to turn the water off at the transmission main which would have shut off the water for thousands of homes. Following that, a boil water notice would have to be issued.

To avoid this, staff spent hours at Satellite Beach City Hall searching for records. None were found there so the Florida Department of Transportation (FDOT) was called to see if old permitting records would provide answers.

“Prior to 1985 records were hard to come by that showed where all the lines and valves were located,” said Utilities Operations Superintendent Tom Hogeland. He explained that when Bob Klapproth, the City’s current Public Works & Utilities Director, began working

for the City in the late-1970s as a construction inspector, he started making sure proper documentation was kept on everything going into the ground.

Hogeland said his FDOT contact searched all day and into the evening when he finally found the archived records. They discovered the tap was 350-feet away and it also connected three other condominiums.

To stop the water, City crews cut in a valve to isolate Las Olas from the other condominiums.

“If we didn’t cut in the valve, three condominiums to the north would have all lost water,” Hogeland said. “The way we were able to solve this problem only caused their fire water line to be out during the work. This was the only shut down required once our new valve was cut in.”



*Larry Williams operates the backhoe to dig up the main to cut the valve in. Mueller Services is shown in the background working to install the line stop.*

## Streets and Stormwater Management Monthly Summary

- ◆ Daytime street sweeper — hours run: 195  
Cubic yards of material removed: 277
- ◆ Nighttime street sweeper — hours run: 64  
Cubic yards of material removed: 72
- ◆ Asphalt repairs made: 35
- ◆ Tons of asphalt used: 37.3
- ◆ Concrete repairs: 9
- ◆ Cubic yards of concrete used: 14

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## January Highlights

The level of Lake Washington decreased during the last month. At the end of January, the lake level was 13.76 feet above sea level. This compares to the lake level at the end of December, when it was 15.07 feet above sea level.

The D.B. Lee Wastewater Treatment Plant recorded 0.4 inches of rain during two days in January. The Grant Street Wastewater Treatment Plant received 0.56 inches of rain over four days. A total of 58.97 million gallons of reclaimed water was produced. This represents 27% percent of total plant flows for January.

## City saves ospreys from high-voltage nest



A family of ospreys recently attempted to build a nest at the City's water production facilities on Lake Washington Road. Unfortunately, they found a pole with high-voltage electrical lines appealing. Staff erected an avian protector, used to deter birds from building a nest, but it seemed to further attract them.

"They wedged all their branches in between them," said Electrician Ray Eldon. "It was scary because the branches were

touching the power lines."

Eldon contacted the Florida Fish and Wildlife Conservation Commission and got a permit to move the nest. Upon their specifications, maintenance personnel built and erected the structure. The picture, above, shows the new nest.

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

### Water Projects

#### **Under Construction:**

- ◆ Phase II surface water treatment plant improvements, \$11,322,000
- ◆ Chlorine scrubber at Avenue B booster station, \$102,000
- ◆ 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
- ◆ A1A water main interconnect
- ◆ Pineda Causeway 16" water main
- ◆ Babcock Street water line relocation between Fee Avenue and Melbourne Avenue
- ◆ Waterlines in annexation areas — Deerwood and El Dorado

### Wastewater Projects

#### **Under Construction:**

- ◆ Crane Creek sub-aqueous bypass main, \$54,745
- ◆ Garage doors at Grant Street 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
- ◆ 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

- ◆ Bell Street sewer aerial crossing
- ◆ Reuse interconnect

### Streets & Stormwater Projects

#### **Under Construction:**

- ◆ Eber Road widening from Babcock Street to Dairy Road, \$3,840,879

#### **Under Design or in Bid**

##### **Process:**

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

### General Public Works:

#### **Recently Completed:**

- ◆ Public Works & Utilities Administration Building, \$512,391

*For more information about this report, please contact the Melbourne Public Works & Utilities Administration Department at (321) 674-5761 or send an e-mail to [utilitiesadmin@melbourneflorida.org](mailto:utilitiesadmin@melbourneflorida.org)*