



# Utilities Connection



## November 2000

City of Melbourne Utilities Department Monthly Report

### Monthly Highlights

The level of Lake Washington remained stable during the past month. At month's end, the lake level was 13.71 feet above sea level, which is approximately three inches above the dam. Water quality remains good.

A total of 56.54 million gallons of reclaimed water was used during the month for irrigation. The north service area system ran 30 days and used 50.94 million gallons. The Melbourne Golf Course irrigated 18 days and used 5.6 million gallons. These figures represented 28 percent of total plant flows for the month.

During November, the Environmental Community Outreach Manager participated in the two-day Melbourne Harbor Fest event.

### Hydrant Replacement Program Successful

Due to corrosion problems, significant improvements were needed to over 1,000 beachside fire hydrants. The hydrants are exposed to an extremely corrosive environment due to the ocean air. In addition, residential irrigation systems using wells have higher levels of salt than mainland wells, and may spray the fire hydrants with salty water.

The repairs and improvements, which took less than two months to complete, included the following:

- □ Bottom bolts replaced by contractor on 1,016 fire hydrants; cost: \$50,700.
- □ Bottom bolts replaced on 123 hydrants and miscellaneous repairs to another 100 hydrants by Water Distribution personnel.
- □ Used 9,112 stainless steel nuts/bolts, which fare better in the salty environment; cost: \$7,500
- □ Bottom flanges replaced on 273 hydrants. The flange kits and various hydrant parts cost \$6,611.



### Lift Stations Monitored 24/7

Sewage lift station monitoring has come a long way in Melbourne since the not-so-old days of 1987. Back then, if there was a problem, bells and lights on the stations would send an alarm. Hopefully, neighbors in the area would notice and call in. An automated telephone system would also call each station once a day to check the status and a City worker would go to each station daily to monitor them.



Above, electrician Mike Brink checks the control panel at Lift Station #23.

Now, thanks to new technology, every 56 seconds a central computer sends a radio signal to each of the 79 lift stations. They in turn send back data if there is any change detected. "This system saves a lot of time and manpower," according to Lift Station Supervisor Doug Hammond. "Little problems are quickly identified and are corrected before they can become big problems."

### Utilities Fast Facts

#### Sewage Collection: Jan. - Nov. 2000

- □ Stoppages: 210
- □ Point repairs: 25
- □ Lateral repairs/replacements: 117
- □ Manhole repairs: 31
- □ Lift station repairs/maintenance: 124
- □ Manhole inspections: 248
- □ Sewer main inspections: 8,769 linear feet
- □ System locates - sewer: 1,127
- □ Misc. work orders: 428

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

### Water Usage

- Water pumped to service: 438,748,000 gallons or 14.656 MGD average
- Maximum finished water pumped to service: 15.489 on Nov. 18, 2000
- Water billed: 384,681,100 gallons
- Fire hydrant flushing: 8,498,160 gallons
- Fire Department water usage: 60,750 gallons
- Brevard County water usage – sewer flushing: 23,500 gallons
- Flushing and testing new water mains: 249,736 gallons

- Chlorides: 95 mg/L
- Color: 246
- Total dissolved solids (TDS): 352 mg/L

### Well Water Quality

- pH: 7.8
- Alkalinity: 119 mg/L
- Total hardness: 604 mg/L
- Chlorides: 682 mg/L
- Color: 6
- TDS: 1,503 mg/L

### Finished water quality - pumped to service

- pH: 7.6
- Alkalinity: 48 mg/L
- Total hardness: 174 mg/L
- Chlorides: 89 mg/L
- Color: 5
- Total dissolved solids (TDS): 347 mg/L

## Water Quality Statistics

### Lake Water Quality

- pH: 7.8
- Alkalinity: 70 mg/L
- Total hardness: 151 mg/L

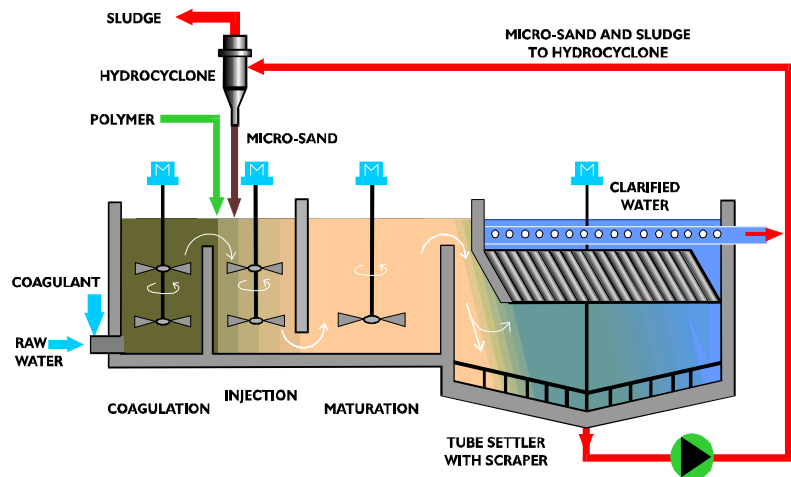
## A Guide Through the New ACTIFLO® Water Treatment Process

Much has been said about the new treatment process under construction at the water plant, but what exactly is ACTIFLO®?

ACTIFLO® is a high-rate water treatment process that uses a fine sand and polymer to remove color and solids from the lake water. The process, which uses microsand enhanced flocculation, occurs when the suspended solids grab onto the microsand with the help of a polymer. Water enters a flash mixing zone first and is rapidly mixed with a coagulant.

The water then enters the injection tank where the microsand and polymer are added. After this, the water goes into the maturation zone and is gently mixed. This gentle mixing allows the flocs to grow bigger. From the maturation zone, the water enters the settling tank, where the flocs settle out and the water flows up through settling tubes and exits the process. From there, the treated water heads to the sand filters.

The sand sludge is pumped from the bottom of the



settling tank to a series of hydrocyclones, where the sand is removed from the sludge by centrifugal force. The sludge is removed and the sand is recycled into the ACTIFLO® system and used again. The treatment time through the process is very short which results in a very compact system.

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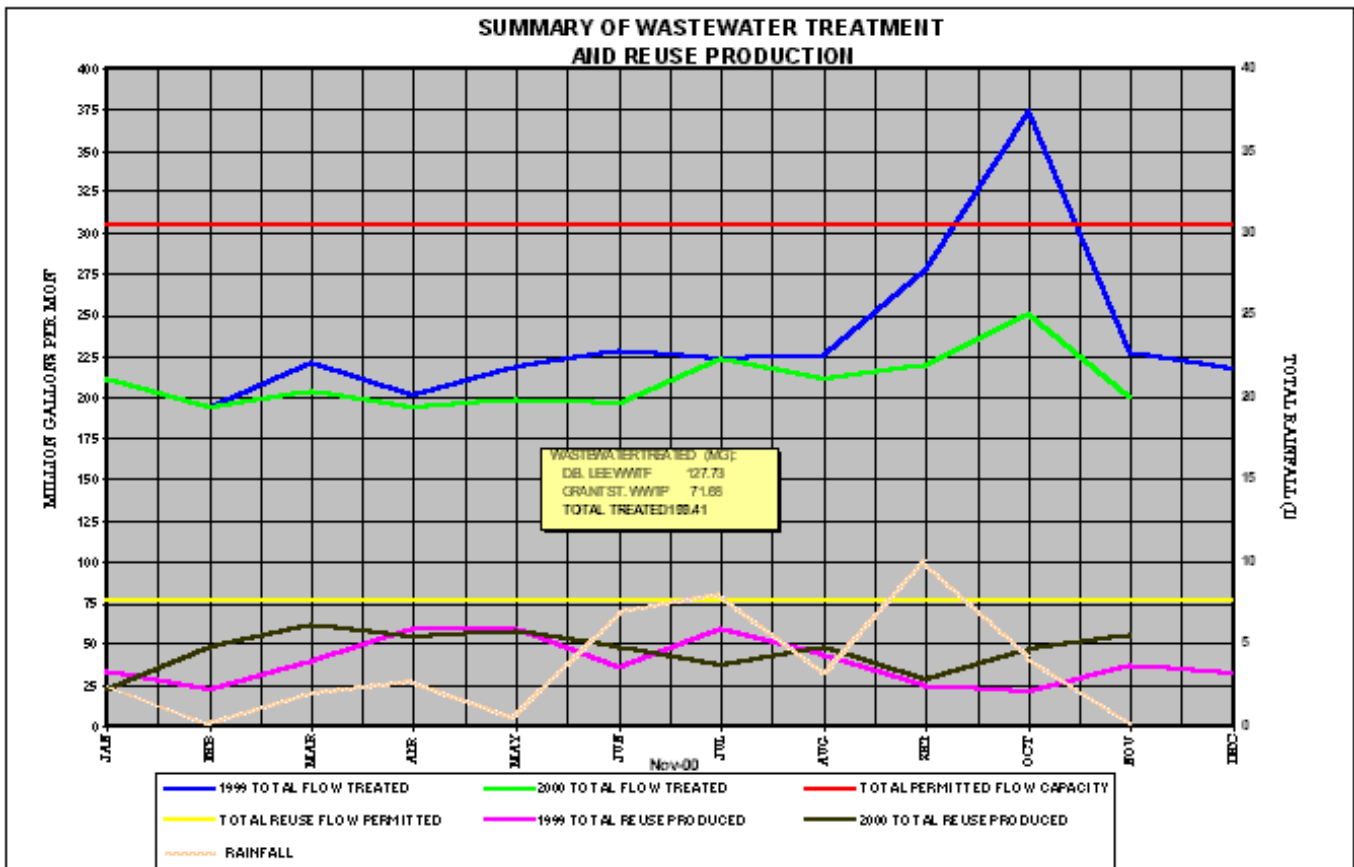
## Wastewater Treatment Operational Summary and Reuse Statistics

### D.B. Lee WWTP

- Treated this month: 127.73 MG
- Treated daily: 4.26 MGD
- Reuse distribution — total month flow: 50.94 MG
- Reuse average daily flow: 1.70 MGD
- Reuse number of days run: 30
- Plant efficiency, BOD removal: 97.80%
- Committed capacity: 0.241 MGD
- Capacity available for development: 0.529 MGD  
(Based on 12-month average daily flow)

### Grant St. WWTP

- Treated this month: 71.68 MG
- Treated daily: 2.39 MGD
- Reuse distribution — total month flow: 5.60 MG
- Reuse average daily flow: 0.19 MGD
- Reuse number of days run: 18
- Plant efficiency, BOD removal: 98.15%
- Committed capacity: 0.378 MGD
- Capacity available for development: 1.949 MGD  
(Based on 12-month average daily flow)



## Streets and Stormwater Management Monthly Summary

- Daytime street sweeper -- hours run: 997  
Cubic yards of material removed: 280
- Nighttime street sweeper -- hours run: 88.3  
Cubic yards of material removed: 80
- Asphalt repairs made: 24
- Tons of asphalt used: 16.5
- Canals cleaned mechanically: 6.2 miles
- Acres treated through aquatic spraying: 26
- Feet of storm drain pipe repaired: 120
- Concrete repairs: 19
- Cubic yards of concrete used: 25.8

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## Utilities Department Capital Improvement Projects Status Report

### Surface Water Treatment Plant Improvements



Construction of the new bulk chemical storage facility at the surface water treatment plant is moving along quickly. The five large tanks shown have a capacity of 12,500 gallons and will be used to store ferric sulfate and sodium hydroxide. Smaller bulk storage tanks will be used to store sulfuric acid and fluoride for use in the water treatment process. Chemicals from the large tanks will be transferred to smaller tanks, or day tanks, in the operations building.

Construction of the new bulk chemical storage facility at the

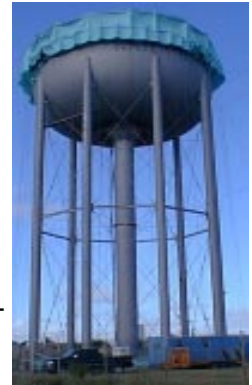
### Patrick Elevated Water Tank Refurbishment

The Patrick Air Force Base elevated water storage tank is undergoing repairs and repainting as part of the City's ongoing tank maintenance and repair program.

The Indialantic elevated water storage tank was repaired and repainted with a striking new City logo a few years ago. The one million gallon Patrick Tank will be painted with the same logo.

The steel, 155-foot tall PAFB tank was built in the late 1950s. The old paint will be sandblasted and repainted with a specialty two-coat painting system. The cost is \$448,000 and will be completed early next year.

The Patrick and Canova Beach tanks are important to the City's water supply and distribution system.



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

### Water Projects

#### Recently Completed:

- Simon Road waterline, \$174,251

#### Under Construction:

- PAFB elevated water tank painting and repairs, \$448,500
- Surface water treatment plant improvements, \$23.4 million

- 2 MG ground storage tank at Canova Beach, \$714,528

- Miscellaneous waterline replacements, \$351,057

#### Recently Awarded:

- Utility relocation associated with U.S. 1 widening

#### Under Design or Ready for Bid:

- Water distribution master plan improvements
- Well flushing lines at the RO WTP
- Aquifer exemption - RO potable water byproduct disposal at DB Lee

#### WWTP injection well system

- Old Eau Gallie waterline replacements
- Harlock Road waterline
- U.S. 1 utility relocations — Post Road to Pineda Causeway
- Seawall stabilization at north raw water intake at Lake Washington

### Wastewater Projects

#### Recently Completed:

- D.B. Lee Wastewater Facility sludge thickening improvements and reuse pump station improvements, \$1,059,000

- D.B. Lee and Grant St. wastewater treatment plant improvements, Phase IIB, \$3.87 million

#### Under Construction:

- Electrical improvements at D.B. Lee Wastewater Treatment Plant, \$228,219

#### Under Design or Ready for Bid:

- Lift Station No. 15 replacement

- Phase III improvements at D.B. Lee Wastewater Treatment Plant
- D.B. Lee & Grant St. sludge facility improvements

- Trickling filter upgrade at Grant Street Wastewater Treatment Plant

### Streets & Stormwater Projects

#### Under Construction:

- Downtown alley drainage improvements, \$35,499

#### Under Design or Ready for Bid:

- Paving of miscellaneous streets
- Dove Street paving
- Storm drain replacements at Hickory/Iris Streets
- Paradise Boulevard pipe lining

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