



June 2004

Utilities Data from May 2004

City of Melbourne Public Works & Utilities Department

Stormwater permit provides tools to prevent pollution

Knowing what we have and getting people educated is how Project Engineer Jenni Lamb describes the main focus of the City's stormwater permit. Lamb is in the process of preparing the first annual update of this five-year permit with the Florida Department of Environmental Protection (FDEP) called the "Generic Permit for Discharge of Stormwater from Phase II Municipal Separate Storm Sewer Systems." Permits are required by all cities and counties through the Environmental Protection Agency's National Pollution Discharge Elimination System (NPDES).

The permit includes six minimum control measures and provides goals for each measure. The measures and goals have tangible projects the City will perform to reduce pollution from entering area receiving waters, which include the Indian River Lagoon, Crane Creek, Eau Gallie River, Lake Washington and Horse Creek.

The first two control measures are closely related: Public Education and Outreach as to Stormwater Impacts, and Public Involvement/Public Participation.

"We already had been doing a lot of our goals in these measures," Lamb said. "But now we are having to account for what we are doing. It will be a big exercise in record keeping." Marla Keehn, a part-time engineering staff member, has as her primary responsibility documentation for the permit.

New projects will also be added. The City's web site will be expanded to include stormwater education and a stormwater hotline will be put into place.

Lamb explained that another big key to the program will be to get the City's stormwater inventory onto the GIS system.

"We have 13 huge manuals and we are not quite complete," Lamb said. These binders contain detailed descriptions with photos of every stormwater structure in the City. "We have an excellent field inventory, which is about 90 percent complete," Lamb said.

The information from the binders will be input into the GIS system and, according to Lamb, will be a massive undertaking. Much of Engineering Technician Raul Reveron-Ruiz's time in the upcoming year will be devoted to this task. "Once complete this will help us a

great deal," Lamb said. "It will help us with modeling; we will be able to identify where all the flow is coming from, not just where the structures are, so we can control any illicit discharges; and it will help us schedule for repairs and replacements."

Besides public education, public involvement and illicit discharge detection and elimination, another critical measure included in the permit is construction-site stormwater runoff control. This is to try to prevent debris and excess soil from going down storm drains

and into receiving waters.

"This year we reviewed our erosion and sediment control ordinance," Lamb said. "We have a pretty good one but we will work with the City Attorney to see what changes we can make. It will probably be to add more enforcement powers."

Lamb added that new this year, all construction sites one acre or larger have to submit a stormwater pollution prevention plan to the City and to FDEP.

The final measure is pollution prevention/good house-keeping. "This is internal — making sure we are doing a good job. We have met with staff from the golf courses and parks since they all use fertilizers' Lamb explained. "Our Fleet Management Division uses chemicals but they run a very clean ship. For some cities this will be a huge issue but we are already doing a really good job with record keeping."

Lamb said the next round will be implementing clean-up measures. "This will require us to build facilities and look at other ways to reduce pollutant loads. We will be in good shape because we have some good projects already started and what we do today will count."



Project Engineer Jenni Lamb pores over paperwork associated with annual stormwater permit update.

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Monthly Water Usage and Raw/Finished Water Quality Statistics

Water Usage

- ◆ Water pumped to service: 524,803,000 gallons or 16.929 MGD average
- ◆ Maximum finished water pumped to service: 18.921 MGD on May 29, 2004
- ◆ Water billed: 435,178,800 gallons
- ◆ Fire hydrant flushing: 16,607,470 gallons
- ◆ Fire Department water usage: 43,900 gallons
- ◆ Flushing and testing new water mains: 7,436 gallons
- ◆ Committed capacity: 1.5631 MGD
- ◆ Capacity available for development: 9.9911 MGD (Based on 12-month average daily flow)

- ◆ Total hardness: 152 mg/L
- ◆ Chlorides: 110 mg/L
- ◆ Color: 138
- ◆ Total dissolved solids (TDS): 336 mg/L

Well water quality

- ◆ pH: 7.3
- ◆ Alkalinity: 134 mg/L
- ◆ Total hardness: 628 mg/L
- ◆ Chlorides: 769 mg/L
- ◆ Color: 6
- ◆ TDS: 1,578 mg/L

Finished water quality - pumped to service

- ◆ pH: 8.2
- ◆ Alkalinity: 46 mg/L
- ◆ Total hardness: 117 mg/L
- ◆ Chlorides: 96 mg/L
- ◆ Color: 3
- ◆ Total dissolved solids (TDS): 299 mg/L

Water Quality Statistics

Lake water quality

- ◆ pH: 7.2
- ◆ Alkalinity: 82 mg/L

Backflow prevention program ensures City's water safety

Automation is making Environmental Compliance Technician Darrell Manchester's job tremendously easier. He has recently entered all the data into the XC2 software to track all the backflow prevention devices in the City's water distribution system. "It's the Cadillac of backflow software," Manchester said.

Backflow prevention devices are required for all new commercial buildings, and for all homes or other properties that have reclaimed water. The backflow prevention devices prevent the water from going in the wrong direction and polluting the potable water. They are required by City code and are mandated by the State of Florida.

The new software will track when every backflow device in the system is due for an annual inspection and recertification. The owners are responsible for having them inspected by a certified backflow tester and



Environmental Compliance Technician Darrell Manchester checks backflow prevention device.

providing proof to the City once the inspection is complete. There are currently 2,425 devices that are monitored, with more being added almost daily.

According to Bill Williams, Assistant Superintendent of Utilities Operations, the most common cross connection is through a garden hose. "Nationwide, there are around 100,000 cross connection incidents per year," Williams said. "The cross connection control program protects our water system," Williams explained.

With the automation of the tracking complete, Manchester has more time to devote to other programs such as monitoring private lift stations and sewer lines, ensuring proper grease traps are in place and operating efficiently in restaurants and other institutions, and troubleshooting continuous dirty water complaint issues.

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Wastewater Treatment Operational Summary and Reuse Statistics

D.B. Lee WWTP

- ◆ Treated this month: 143.58 MG
- ◆ Treated daily: 4.63 MGD
- ◆ Reuse production — total month flow: 80.19 MG
- ◆ Reuse average daily flow: 2.59 MGD
- ◆ Reuse number of days run: 31
- ◆ Plant efficiency, BOD removal: 98.71%
- ◆ Committed capacity: 0.7211 MGD
- ◆ Capacity available for development: 0.9724 MGD
(Based on 12-month average daily flow)

Grant St. WWTP

- ◆ Treated this month: 78.92 MG
- ◆ Treated daily: 2.55 MGD
- ◆ Reuse production — total month flow: 10.43 MG
- ◆ Reuse average daily flow: 0.34 MGD
- ◆ Reuse number of days run: 31
- ◆ Plant efficiency, BOD removal: 98.52%
- ◆ Committed capacity: 0.4638 MGD
- ◆ Capacity available for development: 2.0987 MGD
(Based on 12-month average daily flow)

Michelle Shoultz, City's new utility engineer, joins department

Even as a new City employee, working with Melbourne is nothing new for Utility Engineer Michelle Shoultz. Prior to being hired in May she had been serving for close to two years as City Engineer for the City of West Melbourne. During that time she coordinated with the City of Melbourne on projects that had to do with water, including development projects, transportation projects, water main extension requests, and larger issues facing municipalities in Brevard County, including a proposed regional biosolids facility.



Michelle Shoultz is Melbourne's new Utility Engineer.

Shoultz said the opportunity to join the City of Melbourne provides new and different challenges with a larger city.

Major capital improvement projects for water production, wastewater treatment and utilities operations will be a primary focus as utility engineer, along with smaller

surveys and reports.

Her education and experience will be called on for the many new challenges she will face. Shoultz holds bachelor's degree from Rutgers University in New Jersey and a master's degree in environmental engineering from Florida Tech. She has also earned her professional engineer license from the state of Florida.

She has worked as an engineer for the Brevard County Land Development Department and as a project engineer for L.S. Sims & Associates, an environmental engineering firm.

Engineering runs in the family. Shoultz's husband Chad is a civil engineer and works for the City of Palm Bay as the division manager for the Transportation and Drainage Department. They also have a potential future engineer in the family; their eight-month-old son Brock.

Streets and Stormwater Management Monthly Summary

- ◆ Daytime street sweeper — hours run: 390
Cubic yards of material removed: 163
- ◆ Nighttime street sweeper — hours run: 133
Cubic yards of material removed: 123
- ◆ Asphalt repairs made: 8
- ◆ Tons of asphalt used: 11
- ◆ Feet of canals cleaned mechanically: 7,645
- ◆ Acres treated through aquatic spraying: 20
- ◆ Feet of storm drain pipe repaired: 175
- ◆ Concrete repairs: 10
- ◆ Cubic yards of concrete used: 47.5

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May Highlights

The level of Lake Washington decreased significantly during May. At the end of the month, the lake level was 12.00 feet above sea level. That compares to the end of April reading of 13.07 feet above sea level. Water quality remains good.

The D.B. Lee Wastewater Treatment Plant recorded 0.9 inches of rain during three days in May. The Grant Street Wastewater Treatment Plant received 1.14 inches of rain over six days during the month. A total of 90.62 million gallons of reclaimed water was produced during May. This represents 41 percent of total plant flows for the month.

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

Water Projects

Under Construction:

- ◆ Croton Road utility relocation associated with widening, \$593,257
- ◆ Trailer Haven waterline upgrades, \$195,905
- ◆ Wickham Road waterline replacement from SR 192 to Nasa Blvd., \$1,257,000
- ◆ Sludge handling facility motor control center and belt filter press control cabinets, \$175,685
- ◆ Waterline upgrade, Olde Eau Gallie, \$347,409

Under Design or in Bid Process:

- ◆ Phase II surface water treatment plant improvements
- ◆ Utility relocation in association with NASA Boulevard realignment at Wickham Road
- ◆ Painting various structures at Lake Washington Water Treatment Plant
- ◆ Chemical feed upgrades at Canova Beach Booster Station
- ◆ Hibiscus booster station electric shut-off valves
- ◆ Wickham Road ground storage tank and booster pump station
- ◆ Parkway Drive and Turtlemound water line extension

- ◆ Covered storage building at surface water treatment plant
- ◆ Fee Avenue waterline replacement under FEC
- ◆ Eau Gallie River sub-aqueous crossing

Wastewater Projects

Recently Completed:

- ◆ Large (36") diameter sewer rehabilitation, \$669,465

Under Construction:

- ◆ Sewer manhole rehabilitation, Leewood Forest, \$123,525
- ◆ Inflows and infiltrations elimination, Lift Station 6 area, \$317,953

Under Design or in Bid Process:

- ◆ Lift Station 24 replacement design
- ◆ New monitoring network for reuse system at DB Lee WWTP
- ◆ Demolition of old treatment units at D.B. Lee WWTF

Streets & Stormwater Projects

Recently Completed:

- ◆ Rio Lindo canal dredging, \$457,289

Under Construction:

- ◆ Street milling and resurfacing of various streets, \$794,000
- ◆ Sarno Road/Bell Street drainage improvements, \$257,911
- ◆ Swift Street stormwater improvements, \$195,107
- ◆ Babcock Street realignment, \$1,394,649
- ◆ Houston Street seawall rehabilitation, \$71,707

Under Design or in Bid Process:

- ◆ Lime Drive cul de sac
- ◆ Hoag Avenue paving and drainage improvements
- ◆ Eber Road widening from Babcock Street to Dairy Road
- ◆ Upgrade of stormwater outfalls along Charles Dr./Almar Subdivision
- ◆ Upgrade of existing culvert crossing under Pirate Lane
- ◆ Baffle box at Cliff Creek
- ◆ Pineapple Avenue pedestrian bridge at Cliff Creek

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