

FLORIDA RURAL WATER ASSOCIATION

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RE: Operational Analysis

Florida Rural Water is pleased to provide this operational analysis to the City of Dunnellon. The City of Dunnellon Utilities which consists of Rio Vista, Juliette Falls, Rainbow Springs and the City of Dunnellon. The Utility Advisory Board for the city requested Florida Rural Water Association to provide an operational analysis of the water and wastewater operations. Each separate utility was inspected and evaluated for compliance and operational efficiency.

All of the systems were in Florida Department of Environmental Protection compliance at the time of this report.

There are eight employees for the utility department, this includes one certified wastewater operator and two dual certified operators. All employees perform all collection (wastewater) and distribution (water) duties, including meter reading, installation and removal of meters, water treatment plant, wastewater treatment plant, lift stations and building maintenance this includes mechanical repair and mowing/weed eating.

The City of Dunnellon operates 5 different water plants and 4 distribution systems. There are 3443 active connections that the utility is serving.

Each water plant is required to have a licensed operator. The duties of said operator include:

1. Process control and troubleshooting of water facility.
2. Testing of chlorine residual and adjustment of feed rate if needed.
3. Order all needed supplies.
4. Keep daily logs and maintenance records.
5. Maintain lawn and landscaping.
6. Perform all repairs and maintenance on equipment and pumps.
7. Maintain water certification licensing and continuing education units.
8. Prepare all forms and monthly operations reports.
9. Assist collection and distribution crew as needed.
10. Perform water testing at plant and distribution as required by FDEP.
11. Locate water and sewer lines as needed per 811 (Call before you dig)..

Meter reading is performed by all utility personnel, including rereads and turn-ons and turn-offs. The staff performs all distribution repairs including mainline and

service line breaks. Mainline valve exercising as required per FDEP (Florida Department of Environmental Protection) once a year to insure proper operation in case of needing to isolate lines. Restoration of repair sites, which includes driveways, repair of yards and roadways. Besides the 3443 active connections there are many more inactive connections that have to be maintained and repaired.

Active Connections – Water

City of Dunnellon – 1100
Rainbow Spring – 2078
Rio Vista – 212
Juliette Falls – 53

Active Wastewater Connections – 2496

Total Active Connections - 3443

The City of Dunnellon operates 4 different wastewater collection systems containing gravity and force mains, 42 lift stations, 92 grinder pump stations and 3 wastewater treatment facilities.

Each plant requires a certified wastewater operator. The duties include:

1. Process control and troubleshooting of wastewater facility.
2. Lab work, testing and analysis of wastewater.
3. Order all supplies.
4. Keep daily logs and maintenance records.
5. Maintain effluent disposal spray fields (100 plus acres) mowing and care of spray heads.
6. Perform all repairs and maintenance on plant equipment.
7. Maintain wastewater licensing and continuing education units.
8. Prepare all forms and spreadsheets.
9. Assist distribution and collection repairs as needed.
10. Clean and maintain collection ponds.
11. Oversee contractors working on site.
12. Oversee sludge hauling operations.
13. Maintain monitoring well sites.
14. Locate sewer and water lines.

Utility personnel maintain 39 lift stations which include taking daily readings, inspection of pumps and controls. Cleaning lift station wet well and mowing and weed eating site. Repair and maintenance as needed of 92 grinder pump stations at customer homes. Pull and repair pumps and replace floats in lift stations. Repair electrical panels as needed. Fix lateral stoppages cleanout and repair.

The City of Dunnellon employs seven administration staff that oversee finances, billing, work orders and various other duties for the utilities. This includes reporting to the water management district, department of environmental protection and other governmental agencies.

The City of Dunnellon



There are two well sites in the City of Dunnellon. Water Treatment Plant #1 at 12001 River View (secondary well) and Water Treatment Plant #3 (main well). It is required to take meter readings daily and chlorine residuals (making adjustment as needed). Inspection of the operation of the well motors along with required maintenance is performed on regular basis. The generator is required to be operated at least once per month underload per FDEP regulation.



All valves in the distribution system are required to be exercised once a year per the Florida Department of Environmental Protection. This requires cleaning of the valve pit.



Hydrants are typically flushed once per year and operated to insure operation. Records are kept to account for water use.



Dunnellon Wastewater Plant

The largest facility is the city of Dunnellon wastewater treatment plant which is 0.388 MGD and requires a licensed operator to be onsite 6 hours during the week and a visit on both weekend days. There are 17 lift stations as part of the city's wastewater collection system.



Dunnellon Wastewater Plant, holding ponds.

Rainbow Springs Utility



Rainbow Springs Wastewater Plant

The Rainbow Springs wastewater treatment plant is a 0.23 MGD and requires a licensed operator to be onsite at least 30 minutes per day during the week and 1 weekend visit. There are 22 lift stations that pump sewage to Rainbow Springs. The plant demands a lot of attention by the operator. The waste activated sludge and digesters have to be operated manually, forcing the operator to be onsite up to 3-5 hours per day.

Besides the operation of the plant routine maintenance also must be performed. (i.e. spraying down of the plant, greasing equipment, mowing and weed eating).



Aeration Bays Rainbow Springs Wastewater Treatment Plant.



All spray field maintenance is performed by utility personnel. This includes all mowing and repair of pumps and sprinklers.



Surge Tank at Rainbow Springs Wastewater Treatment Plant.



Holding Pond at Rainbow Springs Wastewater Plant



Well Pump with turbine motor at Rainbow Springs.



Repair being made on service line. Utility employees fix and repair line and sewer breaks, which included road or driveway repair along with making sure customers yard is repaired to original condition.

Rio Vista



Rio Vista Water Plant.

The Rio Vista water plant consists of two wells, chlorination, generator and hydro-pneumatic tank. Duties include reading meters and checking chlorine residual daily.



Well Rio Vista



Main Lift Station at Rio Vista.



Juliette Falls Water Treatment Plant.

The water plant is located at 18765 SW 108th Pl. There are two hydro-pneumatic tanks and a automatic start generator. The water plant consists of two wells, Well #5 SW 108th Pl and Well #6 SW 105th Lane Rd.



Chlorination system Juliette Falls.

Juliette Falls Wastewater Treatment Plant is a 0.1 MGD facility

The plant is currently offline and sewage is being hauled out several times a week instead of in operation. A licensed operator has to be onsite at least 30 minutes per day with no weekend visits the way it is currently being operated. The plant does not received enough wastewater flow to keep the biological process alive. When the development has more customers and the facility is online, when flows reach greater than 0.026 MGD, a licensed operator would be required to be onsite 6 hours per day, 7 days per week.

All facilities were found to be in good shape and well maintained. The city staff is taking care all operation and maintenance, mowing and weed eating not only the plant grounds but also effluent spray fields.



Wastewater Plant, Juliette Falls



Wastewater Plant, Juliette Falls



Percolation Ponds, Juliette Falls



Juliette Falls Generator



Lift Station, Juliette Falls

Summation:

All plants water and wastewater were found to be in compliance and good working order. Staffing is at a minimal level to maintain the utility facilities. The staff has to prioritize the workload, which in turn takes away from proactive maintenance. Sometimes less important items are needed to be pushed back to do more important work (i.e. mowing the grass, painting of hydrants).

In our review of the utility it was observed that preventative maintenance needed to be performed. This included painting of piping and hydrants, location and marking of infrastructure (i.e. valve, manholes etc.). This could be due to lack of staffing. At no times was it observed that staff was not busy.

Similar Size Utility Staffing:

1. Dade City – 3 dual certified operators, 7 distribution and collection personnel. 4,700
2. City of Wildwood – 3 water operators, 6 wastewater operators, 7 distribution and collection personnel. 3,667 connections
3. City of Groveland – 6 operators, 11 distribution and collection personnel. 3,498 connections.
4. City of Brooksville – 3 water certified operators, 5 wastewater operators, and 10 field personnel. 5,500 connections
5. Crystal River – 3 certified operators, 7 field personnel water and wastewater. 3,000 connections

Staffing at other systems varies due to number of plants and complexity of treatment. Many of the above utilities had only one wastewater plant and one water plant.

Please do not hesitate to contact us if there any questions regarding this report.

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