



Hurricanes Frances & Jeanne's Impact on Rural Wastewater Systems

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The impact on rural wastewater systems servicing under 10,000 residences during Hurricanes Frances and Jeanne, mostly consisted of power outages and floodwaters inundating lift stations and wastewater treatment facilities. Most facilities with power outages were able to stay partially operational with the use of generators. Though many facilities lacked enough generators to service all of their lift stations, they reported moving portable generators from lift station to lift station.

Table 1 was constructed using data collected by the Florida Rural Water Association during Hurricane Frances, provided to FEMA in January of 2005. The Florida Rural Water Association (FRWA) is a non-profit organization that provides technical assistance to water treatment facilities.

Associated with these power outages were effluent discharged into floodwaters. This

often resulted from lift stations overflowing due to power loss. Floodwaters also caused a major problem to these facilities during the Hurricane events. Floodwaters inundated wastewater treatment plants, lift stations, and holding ponds, causing millions of gallons of untreated sewage to overflow into the surrounding surface waters. These floodwaters also overflowed some wastewater treatment facilities, causing them to release untreated effluent into surface waters.

In Osceola County, the St. Cloud/Lake Shore Wastewater Treatment Facility reported having over 100,000 gallons of effluent released into the surrounding surface waters, resulting in overflow of both the facility's lift stations and wastewater treatment plant during Hurricane Jeanne. This was a result of power loss to both the systems lift stations and wastewater treatment facility. Also, in Osceola County during Hurricane Jeanne, the Kissimmee/South Bermuda Wastewater Treatment Facility had a

County	Total Wastewater Treatment Facilities Affiliated with FRWA	Total Operational Facilities During Frances	Total Facilities with Power Outages During Frances
BREVARD	20	19	11
CITRUS	7	7	6
INDIAN RIVER	6	6	1
LAKE	26	24	11
MARION	20	15	7
OKEECHOBEE	2	2	2
ORANGE	17	16	9
OSCEOLA	13	13	9
POLK	33	32	1
SEMINOLE	13	13	4
ST. LUCIE	15	12	10
VOLUSIA	16	15	4
Totals	188	174	75

Table 1. Power Loss to Rural Wastewater Facilities During Hurricane Frances (reported to the FRWA as of 9/07/04; supplied to FEMA January 2005) * *Operational defined as being partially functional with or without the aid of generators.*

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sewage spill resulting from hydraulic overload. The facility reported that 0.5 million gallons of raw sewage and 2.5 million gallons of secondary effluent spilled into surface waters that contribute to the Kissimmee River Basin.

providing portable generators to facilities in lieu of major disaster events in the future.

During Hurricane Frances, the Buenaventura Lakes Waste Water Treatment Facility located in Osceola County reported loss of power and a flooded backup generator. The loss of power led to the plant discharging untreated effluent for approximately 34 hours through their emergency discharge into wetlands.

The Sanford/North Wastewater Facility in Seminole County reported a high flow of 15 million gallons per day running through their wastewater treatment plant during Hurricane Frances—the facility’s designed capacity is 7.3 million gallons per day. The facility’s filters had to be bypassed during the event and all effluent was overflowing into surface waters. During Hurricane Jeanne, the plant reported that the filters were being bypassed and that both plant effluent and reject ponds were overflowing to Lake Monroe, which is part of the Middle St Johns Drainage Basin.

In Orange County during Hurricane Frances, approximately 142 lift stations were without power, resulting in 12 to overflow, discharging a total of 10,000 to 20,000 gallons of untreated sewage into the surrounding surface water.

In conclusion, though some rural wastewater facilities suffered loss of function, the availability of portable generators during Hurricanes Frances and Jeanne lessened the impacts of the events. Therefore, emphasis should be placed on

References

Florida Rural Water Association data provide to FEMA on January 25th and April 5th, 2005.