

Middlesex County Utilities Authority

Hurricane Sandy Update

July 13 to July 19, 2013

FEMA, USACE, USEPA and NJDEP

Federal and State agencies have visited the site and are fully briefed on the restoration efforts being implemented by the MCUA. These agencies are constantly monitoring the situation. Coordination with FEMA and NJDEP representatives is ongoing for reimbursement of restoration expenses.

Service Interruptions

None reported

Central Wastewater Treatment Plant

The Central Treatment Plant is fully operational and is handling all wastewater and trucked waste entering the plant in Sayreville. Currently, the Central Treatment Plant is being powered by the Landfill Gas to Energy Facility and local electric utility. Analysis of December 2012 operating data showed Plant performance was impacted by the unscreened sewage conveyed through the Temporary Bypass Pumping System at the Sayreville Pumping Station. Excessive solids reduced the efficiency of the Final Settling Tanks for several days. Plant performance from January through March 2013 was compliant with permit discharge requirements. During the month of June 2013 the plant experienced a temporary upset condition in the secondary treatment process which resulted in total suspended solids permit excursions due several scheduled power outages to test onsite emergency electrical power equipment required to be installed per a directive from the NJDEP, high influent flows due to several rain events and operational issues attributable to Hurricane Sandy.

The week's estimated daily average rate of wastewater flow and peak daily flow entering the Central Treatment Plant:

97 million gallons per day average
113 million gallons peak day (July 13)

South Amboy Pump Station

Operational; repairs to damaged equipment are being performed by MCUA, which are ongoing.

On-site temporary emergency generator is functional in the event of loss of the electric utility power feed into the pump station.

The estimated average rate of wastewater flow conveyed to the Central Treatment Plant:

1-2 million gallons a day

Edison Pump Station

Four Main Pumps capable of conveying 85 MGD of wastewater to the Central Treatment Plant are in operation. Pump No. 4 has developed operational problems relating to the motor. The Pump motor was tested and found to be acceptable; testing and troubleshooting the variable frequency drive for the motor has determined that additional flood damage needs to be repaired.

On-site emergency generators are functional in the event of loss of electric utility power; however, generator automatic control issues remain to be resolved.

Currently, the Main Pumps are able to convey 85 MGD which exceeds the average daily amount of wastewater that enters the station. Bypass pumping system capable of handling 20 -24 MGD is in standby mode.

The week's estimated daily average rate of wastewater flow and peak daily flow conveyed to the Central Treatment Plant:

19 million gallons per day average
25 million gallons peak day (July 13)

Sayreville Pump Station

Six Main Pumps capable of conveying an estimated 300 MGD of wastewater to the Central Treatment Plant are in operation.

Original Sayreville Pump Station

Main Pump Nos. 2E and 3E are operational [rated capacities of each pump 33MGD @ 102 feet Total Head], continuing the evaluation of pump hydraulic and mechanical performance; tests performed indicate Pumps 2E and 3E are capable of conveying approximately 80 MGD.

Continuing hydraulic evaluations of pump system conveyance capacity; draft report on the findings has been completed and is under review, further evaluations of the Temporary Bypass Systems conveyance capacities and additional surge analyses on the Original Sayreville Force Main and Sayreville Relief Force Main are ongoing.

Bar Screen No. 1 ready for operation upon introduction of flow through the OSPS influent channel.

Continued construction of work platforms to repair the opening in the top slab of the OSPS Influent Chamber; began replacing damaged portions of the perimeter fence.

Sayreville Relief Pump Station

Main Pump Nos. 2R, 3R, 4R and 6R are operational [rated capacity of 3R &4R: 50 MGD @ 89 feet Total Head; rated capacity of 2R & 6R: 40 MGD @ 89 feet Total Head]; recorded flow

from the individual Main Pumps has, at times, exceeded 60 MGD. Operating Bar Screen Nos. 1, 2, 3 and 4, as needed, and the Interconnection channel between SRPS Wet Well and OSPS Wet Well.

Additional work is required for the 34.5KV cutout switches on both the M39 and Q69 Main JCP&L Utility Feeders; arrangements are underway for the replacement of these switches. The MCUA Board of Commissioners approved an emergency authorization to complete this work. The replacement switches are unique and require an extended time for manufacturing with deliver scheduled for July.

Main Pump No. 4R normal operation remains a concern; pump discharge cone valve and motor bearing temperature issues exist and amperage usage continues to be elevated. To address the amperage usage, an additional set of replacement diodes have been ordered for the pump motor rotating diode assembly. The replacement diodes have been received and coordination for installation on the pump motor is underway. Main Pump No. 4R is operational if needed.

During testing of Main Pump No. 5R, an electrical issue regarding the motor was identified and it was determined the motor needs to be removed, inspected and refurbished offsite. The motor was removed from the site for refurbishment at the Scheinert & Sons motor repair shop. Inspection of the motor performed has determined that a complete rebuild of the stator is necessary. Completion of the rebuild work is anticipated in July.

On-site emergency generator is functional in the event of loss of the two electric utility power feeds into the pump station; transfer of load to the generator must be performed manually. The generator is sized to operate two Main Pumps along with ancillary pump station equipment in either the SRPS or OSPS. The emergency generator was not operated.

Commissioned VFD and initiated startup activities for Main Pump No. 1R, excessive vibration issues with the pump motor are prevalent preventing operation of the pump; testing and troubleshooting both VFD and motor has been ongoing and will continue to identify the problem with representatives from Scheinert and ,the VFD manufacture, ABB; a report has been received from Scheinert indicating the vibration is not a mechanical issue but rather of electrical origin and recommended additional testing; an interim report from ABB was received on June 7. Supplemental information was provided by ABB on July 10. Discussions took place this week with ABB manufacturer's factory representatives to address electrical related vibration issues. ABB has indicated that additional VFD adjustments may be necessary upon review of detailed motor information. ABB was subsequently provided with pump motor name plate information, and post storm repair and test data for the all motors, for review. Planning is underway for scheduling additional tests and further adjustments to the VFD settings.

Completed the installation/routing of remote control wires and replacement of temporary electrical splices with permanent power blocks for all six suction valve actuators; completed the demolition of the old electrical disconnects from all suction valve actuator stands; completed adjustments to limit settings for suction valve (SV) 4R and 6R actuators, with SV-5R remaining to be adjusted; completed preparation to wire power and control cables for guard valve (GRV) 2R, 4R and 6R actuators; completed removal of GRV 2R actuator; completed preparation of feed wires at MCC for GRV 1R,2R,4R and 6R actuators; completed the installation of the wet well emergency lights;

As a result of Hurricane Sandy, the internal monitoring system on the MCUA's 102-inch diameter Sayreville Relief Force Main, which monitors the structural integrity of the pipe, was damaged. Subsequently, the MCUA prepared a contract to repair the monitoring system and conduct an internal inspection of the force main. The internal inspection will establish whether any damaged occurred to the pipe while the monitoring system was inoperable. This contract was awarded on June 27, 2013 at the MCUA's Regular Commissioners meeting. This work commenced on July 8, 2013 and the force main was back in service and the monitoring system was back in operation on July 16, 2013 with full commissioning of the monitoring system on July 17, 2013. Damage to the acoustic monitoring cable in the pipe was observed and attributed to excessive debris build up on the cable, within the pipeline, when sewage was conveyed without screening through the bypass pumping system.

Temporary Bypass Pumping System

System remains operational and operation has been on an intermittent basis due to Main Pump Nos. 2E, 3E, 2R, 3R, 4R and 6R capable of conveying all of the dry weather flow and the maximum wet weather flow to the Central Treatment Plant. Temporary Bypass Pumps were operated for conveyance of sewage flow on July 12 from 10:15PM to 11:59AM, July 13 from 12:00AM to 5:00AM and 2:00PM to 8:40PM, and July 15 from 12:30PM to 2:00PM. The Temporary Bypass Pumping System operation was necessary for the Sayreville Relief Force Main inspection and acoustic monitoring system repair.

Temporary Bypass Pumping System at the Weber Ave. Meter Chamber was not operated and will remain on standby. This System serves to isolate the MCUA Interceptor pipeline sewage flow from the local sanitary sewer collection system to mitigate potential impacts during wet weather events.

The week's estimated daily average rate of wastewater flow and peak daily flow conveyed by the Main Pumps and/or Temporary Bypass Pumping System to the Central Treatment Plant:

76 million gallons per day average
84 million gallons peak day (July 13)

Temporary Wet Weather Overflow Facilities

All piping, screening equipment and pumps have been removed from the MCLF site; removal of fill and stone for equipment pads and area restoration has been completed.

Industrial Users

The Sayreville Pump Station and Edison Pump Station currently can convey average daily flows to the Central Treatment Plant therefore; Industrial Users may resume discharging to their respective wastewater collection systems. Also, MCUA maintained the reduced trucked in waste rate until January 4, 2013. As of January 5, 2013 the Septage Rate is \$48.00/1000 gallons and the Industrial Rate is \$72.00/1000 gallons.

Uncontrolled Overflows

None as of January 26, 2013

Controlled Overflows

None as of January 17, 2013

Middlesex County Landfill Hours

Middlesex County Landfill is fully operational and open to accept solid waste for disposal. Below is the operating schedule for the Landfill in East Brunswick until further notice.

Monday thru Friday	7:00am – 3:00pm
Saturday	7:00am - 12:00 noon
Sunday	Closed

Contact Information: Tony Cicatiello, 908.568.3280