



**Massachusetts Water Resources Authority**

*Report to the*

**Wastewater Advisory Committee**

***Impacts of March Storms***

**April 23, 2010**



## Recent Rains Brought Record Totals

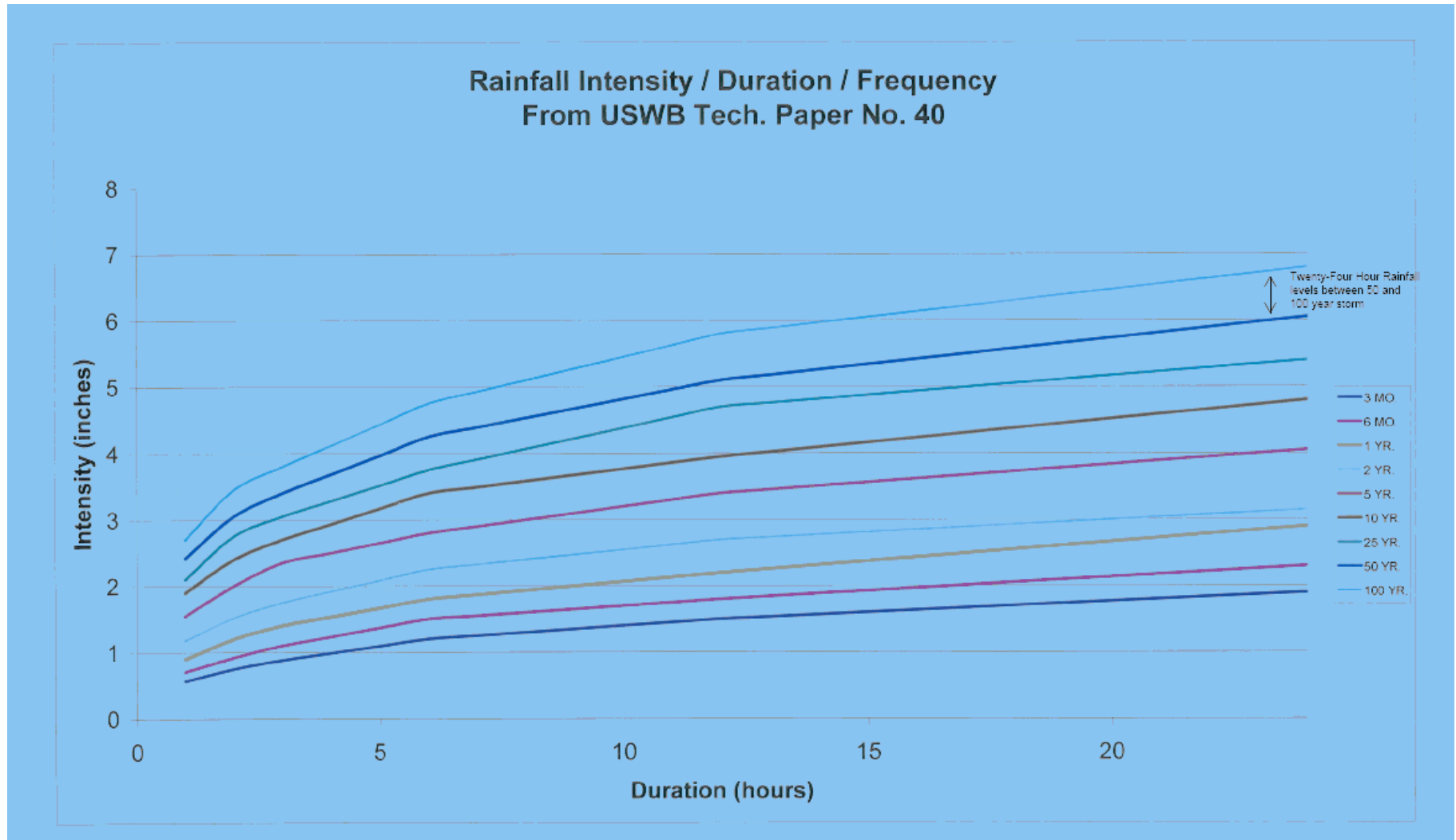
- Most rain since October 1955, when the area was hit with 2 hurricanes

Storm Period	Rainfall Total
February 24 - 26	3.49 inches
March 1	0.32 inches
March 13 - 16	9.16 inches
March 22 - 24	2.49 inches
March 26	0.22 inches
March 29 - March 31	5.45 inches
<b>Total</b>	<b>21.13 inches</b>



## Magnitude of March 13-16 Storm Event

- Twenty-four hour rain totals place this storm between a 50 and 100 year event





## Record River Flooding

- Record flooding of almost all rivers in Central and Eastern Massachusetts





## Record River Flooding





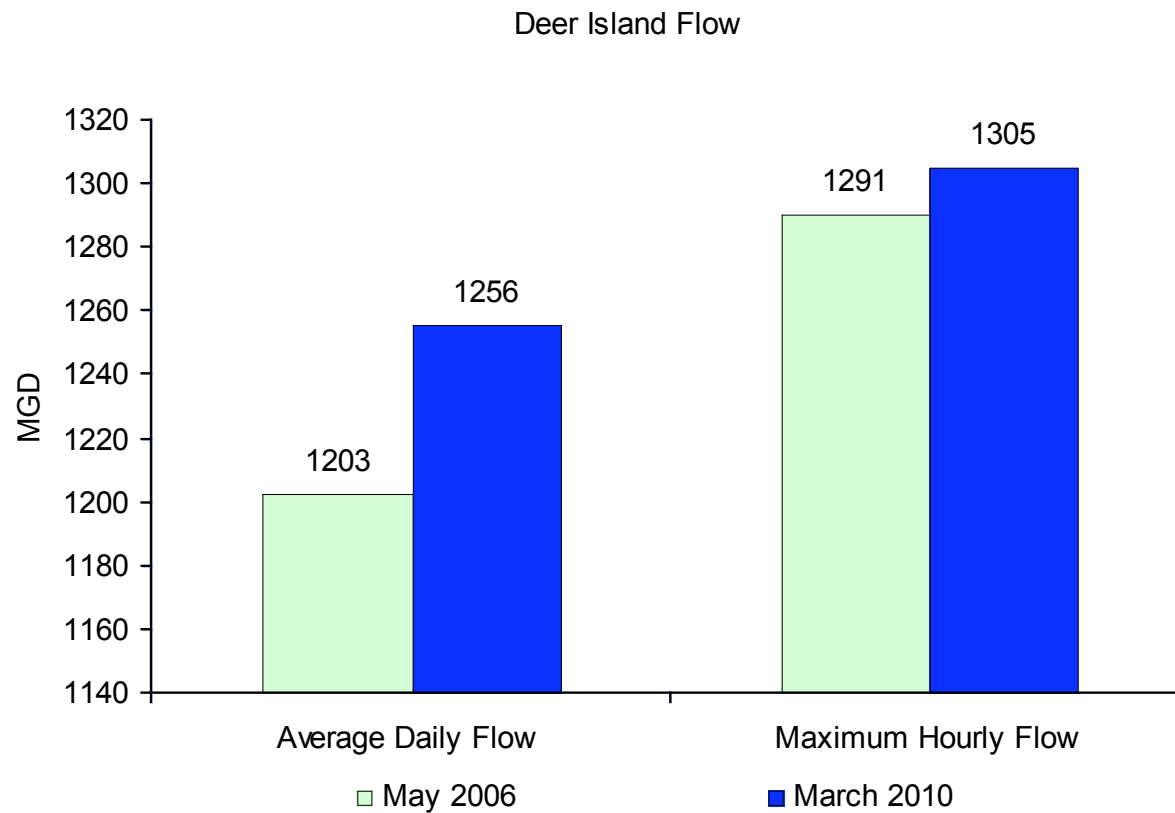
# Local Flooding Everywhere





## Deer Island Treatment Plant – Record Flow Levels

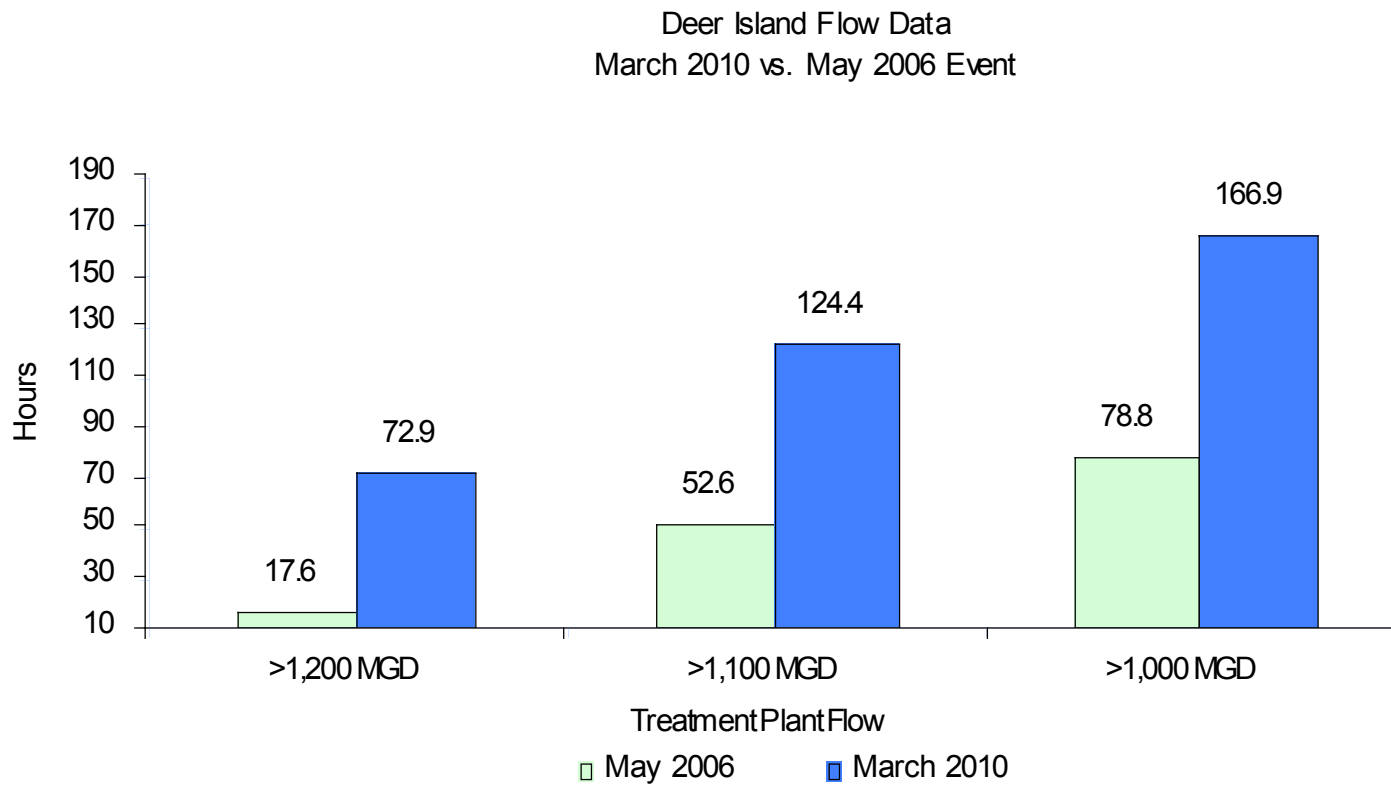
- Deer Island measured new record levels of average daily and maximum hourly flow rates





## Deer Island Treatment Plant – Record Flow Levels

- Deer Island has set new records for the number of hours that flow levels exceed certain thresholds.







# Deer Island Treatment Plant

**Dry Weather**



**March 2010**





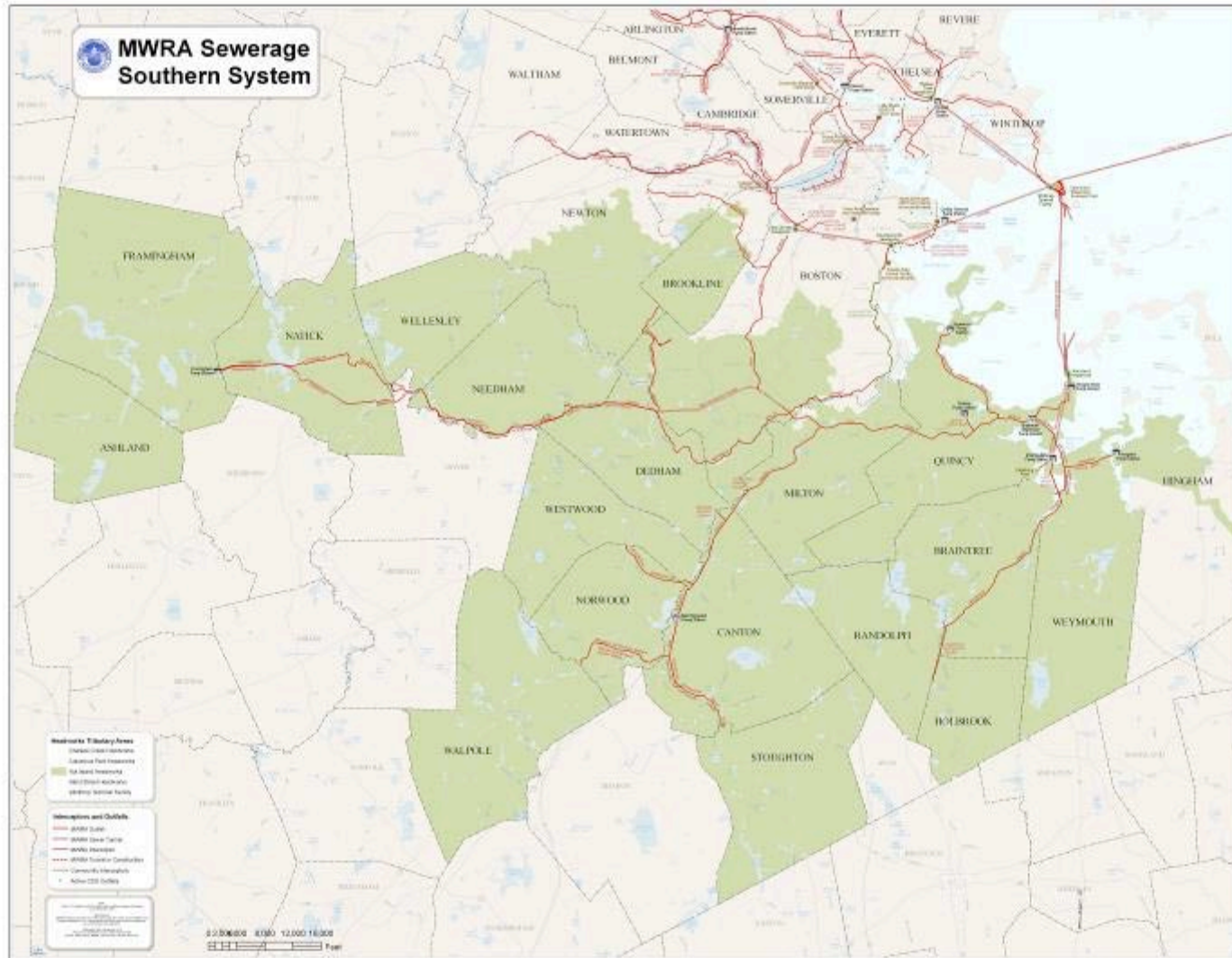
## Burnt-Out Pump Motor

- North Main Pump Station





# South System Communities





## Nut Island Headworks/ South System

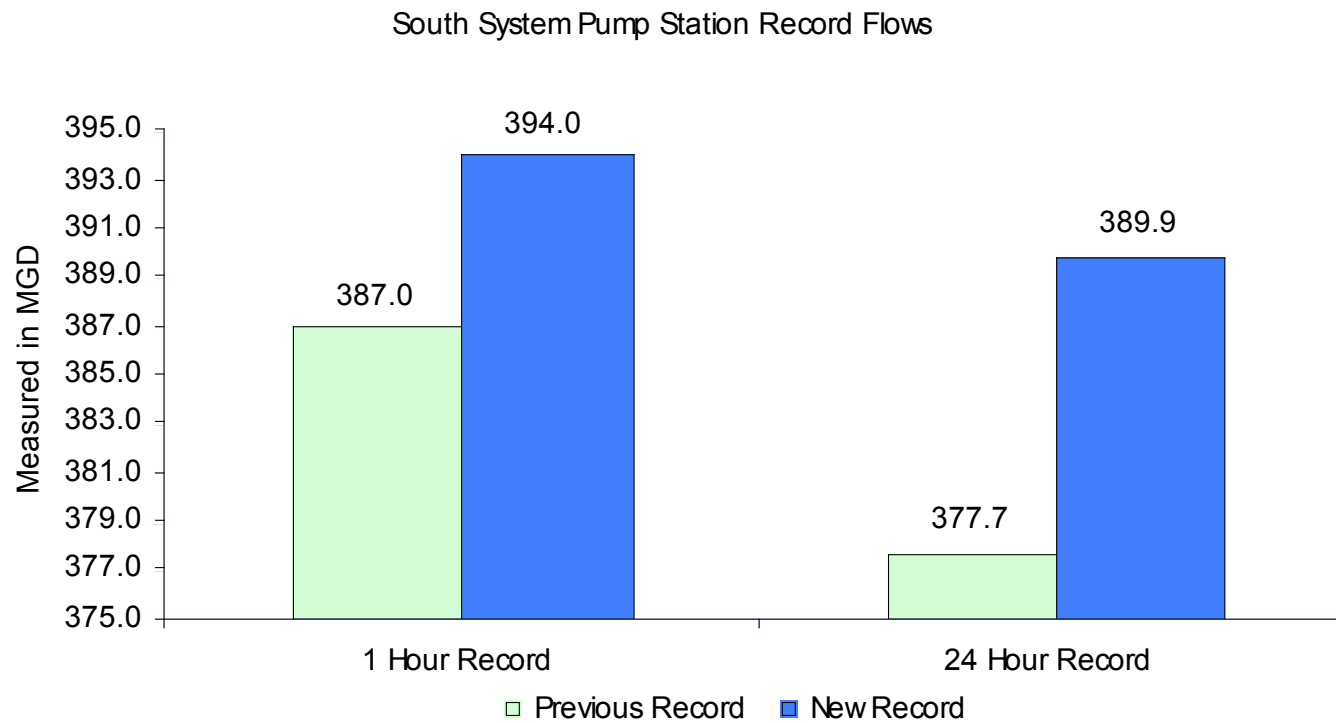
- **Flow to Nut Island exceeded system capacity resulting in two short duration releases on March 15th**
  - 12:30 pm to 1:09 pm – 39 minutes
  - 3:50 pm to 4:08 pm – 18 minutes
  - Total estimated volume discharged was 5 to 10 million gallons
  - Nut Island and Deer Island operated at full capacity
- **MWRA's NPDES Permit does not prohibit an emergency bypass of treatment facilities when the "Bypass was unavoidable to prevent the loss of life, personal injury or severe property damage."**
  - Due to record flows the bypass discharges were required to prevent long term damage to the headworks facility and protect public health.
- **NPDES Permit the requires notifications to local health authorities, EPA, and Massachusetts DEP**





## South System – Record Flow Levels

- South System Pump Station set new record flow levels





## 7,000 Feet Of Squantum Force Main





## Field Operations

- All facilities were staffed 24-hours a day
- Additional maintenance and field staff were available 24-hours a day to ensure any problems would be address quickly
- 16 large portable pumps were deployed to seven different locations





## Field Operations

- Combined Sewer Overflow Treatment Facilities Discharging

Hours of Discharge	Hours of Discharge	Treated CSO Volume	2009 Annual Total Treated CSO
Somerville Marginal	94	149 MG	73 MG
Prison Point	93	574 MG	254 MG
Cottage Farm	124	305 MG	43 MG
Union Park	80	126 MG	28 MG

- **3 times the volume of the entire previous year**





## Cleaning-Up





## Cleaning-Up





## Cleaning-Up





# Clinton Wastewater Treatment Plant

- Nashua River overflowing its banks into the facility





# Clinton Wastewater Treatment Plant





# Clinton Wastewater Treatment Plant





## Wachusett Reservoir

- Wachusett Spillway discharging over 1 billion gallons per day





# Wachusett Reservoir







# Southborough





# Community Advisories

- Updates were emailed to communities and posted on MWRA's homepage

**MWRA STORM INFORMATION**  
Updated Regularly

[home](#)

Storm Emergency Operations Center: (617) 305-5970

Page Last Updated Friday, April 2, 2010 3:04 PM

**This will be the last update for this storm event.**  
[Go to latest update](#)

The Massachusetts Water Resources Authority is continuing to address the record rainfall that occurred in our service area.

Sewer flows and reservoir elevations remain high throughout the MWRA service area. All MWRA facilities are staffed. The MWRA continues to monitor flows and issues by geographic location.

The MWRA does not have small pumps available to pump out flooded basements. If you experience flooding in your home, call your local fire department.

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**HELPFUL LINKS**

- [Flooding safety information from the Massachusetts Emergency Management Agency](#)
- [Storm Fact Sheet for Massachusetts Health and Human Services](#)

**April 2, 2010 –3:00 AM Update**  
**This will be the last update for this storm event.**

**Wachusett Reservoir**  
The Wachusett Reservoir has crested and the level is continuing to decrease slowly. Current elevation is 395.73 (down 0.02' from the [last report](#)). There is 1,015 mgd spilling over the spillway. There has been no transfer of water from Quabbin Reservoir to Wachusett Reservoir since February 2010.

**Quabbin Reservoir**  
The Quabbin Reservoir is at elevation 530.60, with no change since [last report](#). Spilling at 677 mgd.

**Other Western Operations**  
The Sudbury Reservoir continues to decrease its elevation slowly and is at elevation 259.23, a decrease of 0.02' as the [last report](#). The reservoir is spilling 72 mgd (spillway crest at 259.0 elevation).

Reservoir # 3 also continues to lower and is at 185.98, a decrease 0.03' since the [last report](#) – spilling at 137 mgd, (spillway crest at 185.25).

**Metropolitan Boston Sewerage System**  
All MWRA sewer facilities continue to be operational at this time. The MWRA system is still at or near capacity and just starting to lower slightly.

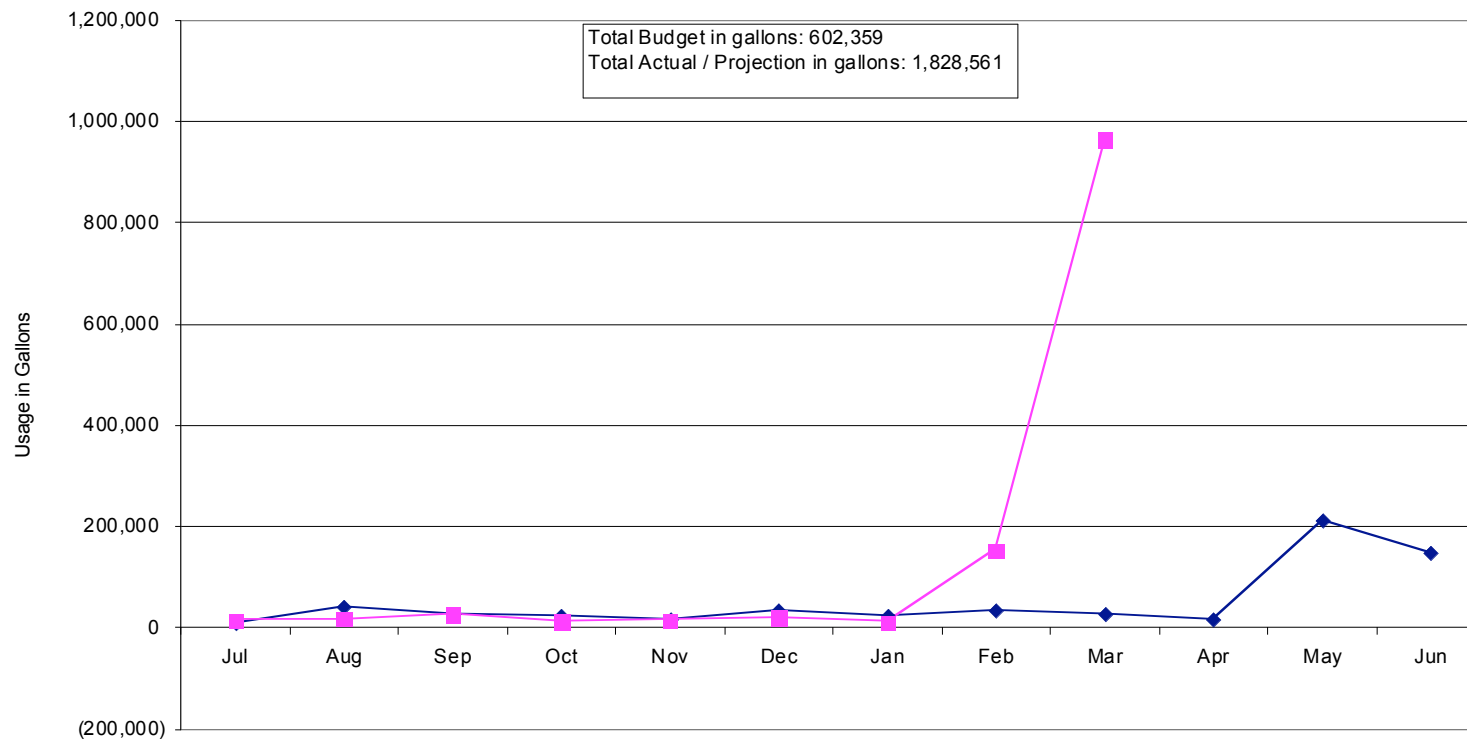
**South System**  
The Nut Island Headworks/IPS is currently running at about 338 mgd. Deer Island has been able to maintain this flow.

**Deer Island**  
The Deer Island Treatment Plant is processing at a rate of about 890 mgd.



# Deer Island Diesel Fuel Usage

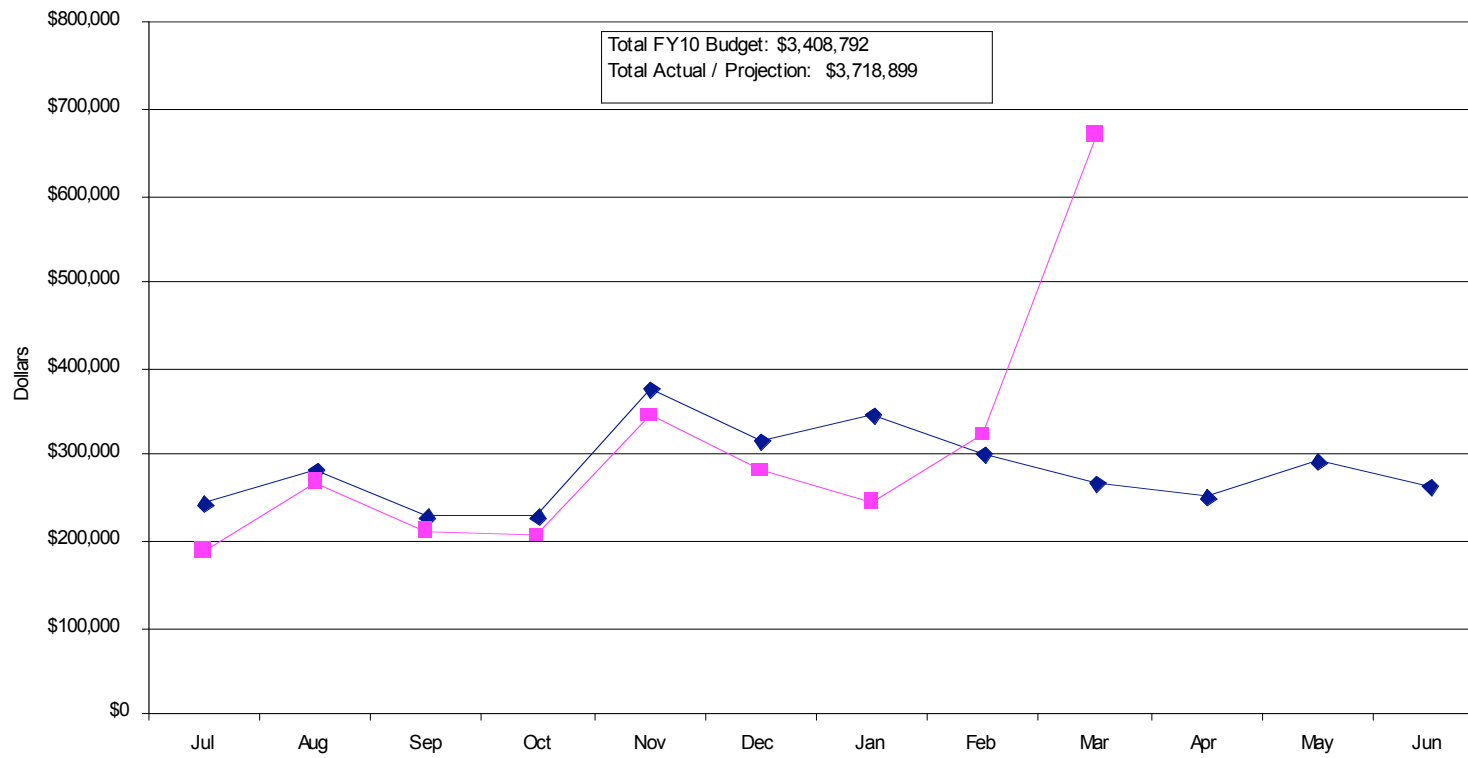
**Deer Island Total Diesel Fuel Usage  
FY10 March YTD**





# Agency-Wide Overtime

Authority Wide Overtime  
FY10 March YTD





## Budget Impacts

- Estimated total costs: \$3.5 million
- Net cost of running CTGs: \$1.7 million
- Applying for any available FEMA funding