

# Where did all the Sewage Go?

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$$\frac{\partial u}{\partial t} + \vec{v} \cdot \nabla u - fv = -\frac{\partial \phi}{\partial x} + \mathcal{F}_u + \mathcal{D}_u$$

$$\frac{\partial v}{\partial t} + \vec{v} \cdot \nabla v + fu = -\frac{\partial \phi}{\partial y} + \mathcal{F}_v + \mathcal{D}_v$$

$$\frac{\partial T}{\partial t} + \vec{v} \cdot \nabla T = \mathcal{F}_T + \mathcal{D}_T$$

$$\frac{\partial S}{\partial t} + \vec{v} \cdot \nabla S = \mathcal{F}_S + \mathcal{D}_S$$

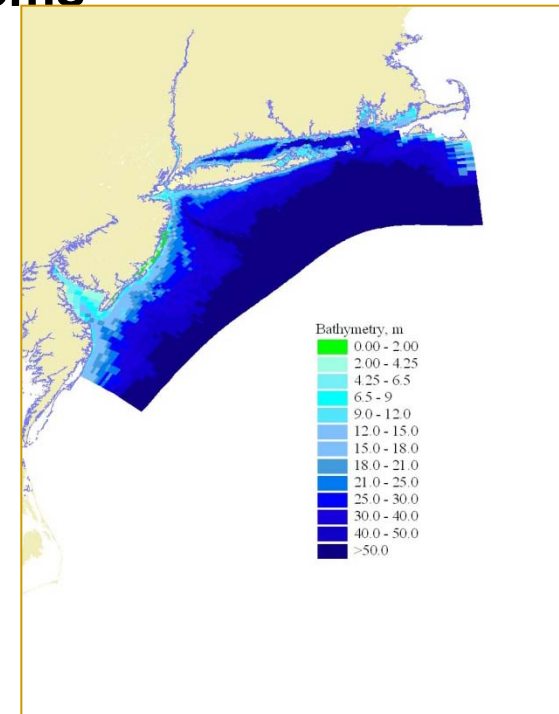
$$\rho = \rho(T, S, P)$$

$$\frac{\partial \phi}{\partial z} = \frac{-\rho g}{\rho_0}$$

$$\frac{\partial u}{\partial x} + \frac{\partial v}{\partial y} + \frac{\partial w}{\partial z} = 0.$$

Castle Point on Hudson  
Hoboken, NJ

July 28, 2011



## NYC Sewage Treatment Plant Dumping Raw Sewage into Hudson After Fire

Since 5:15 p.m. yesterday, the North River Wastewater Treatment Plant, at 135th Street in New York City, began discharging untreated sewage into the Hudson River following a four alarm fire that caused severe damage and the shutdown of the plant.



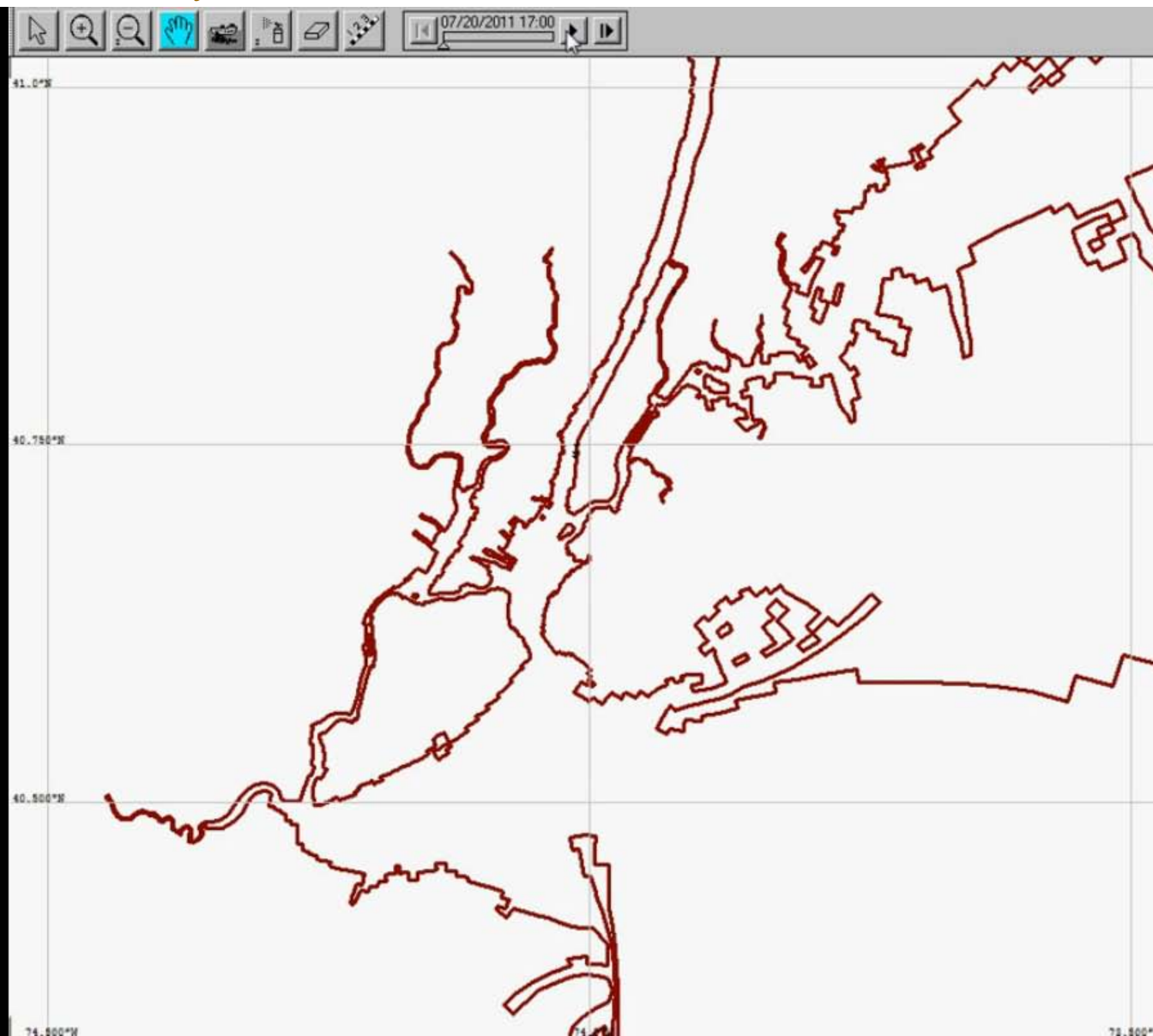
	Latitude	Longitude	Location
NR-023	40,44,42	74,00,36	W. 18th Street (6 blocks north of NR050)
NR 003	40,50,07	73,56,56	W. 158th St. (just north of Riverbank State Park and Trinity Cemetery)
NR 050	40,44,30	74,00,36	Bloomfield Street (Meatpacking District- 6 blocks south of NR023)
NR 045	40,51,35	73,54,56	Academy Street (Discharging into the HARLEM River)
NR 026	40,45,11	74,00,32	W. 26th Street (8 blocks north of NR 023)

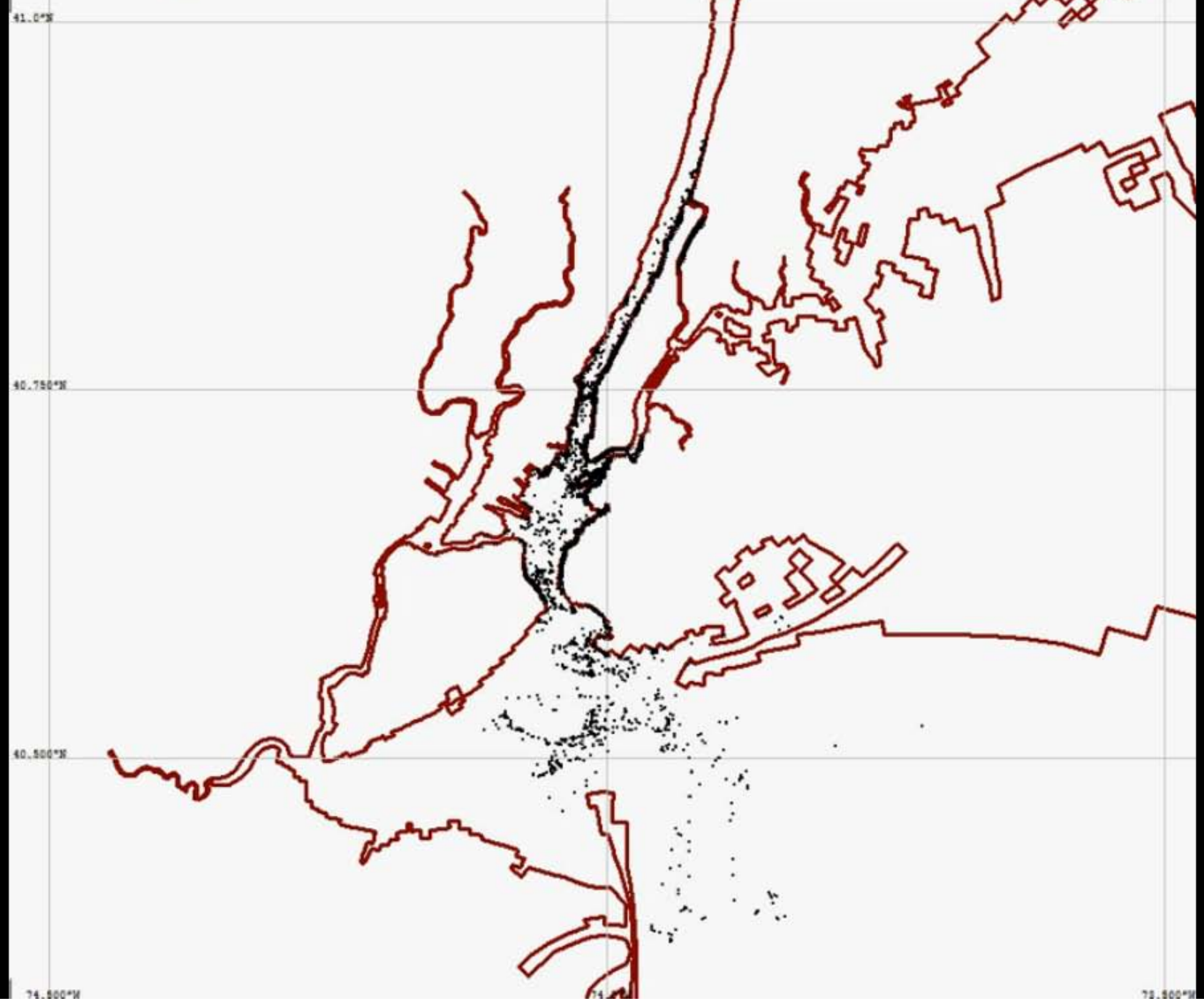


# Release Info

- 6 release points
- 3.9 million gallons per day
  - Calculated from 130 million gallons per day and 97% was water so 3% = 3.9 million gallons
- 7/20/11 5pm to 00AM, July 27, 2011

# SpillMovieJuly26.mov







An aerial photograph of the Stevens Institute of Technology campus in Hoboken, New Jersey. The campus features several large brick buildings, a green soccer field, and a parking lot. In the background, the Hudson River flows past the dense skyscrapers of Lower Manhattan. A large cargo ship is visible in the water to the left. The text is overlaid on the center of the image.

**Questions?**

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**[www.stevens.edu/maritimeforecast/](http://www.stevens.edu/maritimeforecast/)**