


# REPORT FROM THE IBTTA FORUM ON SUPER STORM SANDY: ADAPTATION AND RESILIENCE

JANUARY 10, 2013





A satellite image of Super Storm Sandy, showing a large, swirling cloud system over the Atlantic Ocean. The storm's eye is visible in the center, surrounded by dense, white cloud bands. The surrounding ocean is dark blue, and some landmasses are visible in the lower right.

**The IBTTA Forum took place just months after Sandy devastated a swath of the northeastern United States from New Jersey to Connecticut, and its purpose was simple: to capture front-line success stories and lessons learned from affected tolling authorities, and from agencies in Florida with much longer experience coping with severe storms.**



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## EXECUTIVE SUMMARY

IBTTA hosted *A Forum on Super Storm Sandy: Adaptation and Resilience* in Miami, Florida on January 10, 2013. The purpose of the Forum was to capture members' unique experience with severe weather events, involve front-line tolling agencies in building adaptive solutions to climate change, and bring together the latest thinking on an issue of crucial importance to transportation systems.

"This was a game-changer for all of us who operate infrastructure," said IBTTA President **Rob Horr**, Executive Director of the Thousand Islands Bridge Authority. "There's an opportunity here for our industry to grow, be better, and be better prepared for future severe weather events," added IBTTA Executive Director and CEO **Pat Jones**.

Hurricane Sandy delivered a harsh lesson "about climate change and the need to prepare for these kinds of superstorms in a way we didn't previously," said **Ronnie Hakim**, Executive Director of the New Jersey Turnpike Authority. "What we saw unfold with Sandy was something we'd never seen before in any of our careers, and maybe in two or three generations," agreed **James Fortunato**, Vice-President and Chief of Operations for New York's Metropolitan Transportation Authority Bridges and Tunnels (MTA).

The group identified emergency procedures and systems as the cornerstone of an effective response to weather disasters. Emerging practices for future storms include:

- ✍ Establishing an integrated emergency operations center
- ✍ Pre-identifying backup locations and systems to speed business recovery when a key facility is lost

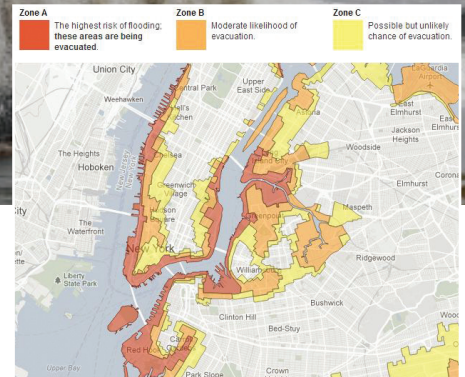
- ✍ Stationing engineering teams to assess damage as soon as a storm has passed
- ✍ Identifying essential personnel and laying out pathways for them to do their jobs
- ✍ Anticipating the need for key operational information, like mobile PIN numbers, and basic equipment like phone chargers, flashlights, and flashlight batteries.

Participants discussed the crucial importance of bringing in the right human resources with the right expertise to solve specific problems—firefighters, for example, have the best experience to deal with flood water. Access to limited fuel supplies became a human resource issue when agencies saw they would lose access to essential personnel if they couldn't drive home. "We mobilized 1,200 employees, and 900 of them couldn't get home, so it's a big deal," a participant said.

Although the focus of the forum was on hurricanes, a couple of participants endorsed an all-hazards approach to emergency preparedness. **Cedrick Fulton** of the Port Authority of New York and New Jersey said agencies in the U.S. Northeast had spent years planning responses to potential terrorist threats. Now, "we're going to focus a whole lot more on water, surge, and the impacts, duration, and unpredictability" of severe storms.

Although toll roads are opened up to facilitate outbound traffic during the evacuation phase of an emergency, the group generally agreed that utility fleets responding to emergencies should pay their tolls when they're being compensated for recovery work. Participants also agreed that accurate, timely public communication is essential in an emergency, with social media playing an increasingly important role.





## INTRODUCTION AND OVERVIEW

Advance planning, effective systems, and committed personnel emerged as key ingredients of the response to severe weather disasters like Hurricane Sandy when a group of senior executives from U.S. tolling agencies gathered for *A Forum on Super Storm Sandy: Adaptation and Resilience*.

The Forum took place less than three months after Sandy devastated a swath of the northeastern United States from New Jersey to Connecticut, and its purpose was simple: To

capture front-line success stories and lessons learned from affected tolling authorities, and from agencies in Florida with much longer experience coping with severe storms. The session coincided with the IBTTA Board meeting in Miami in early January.

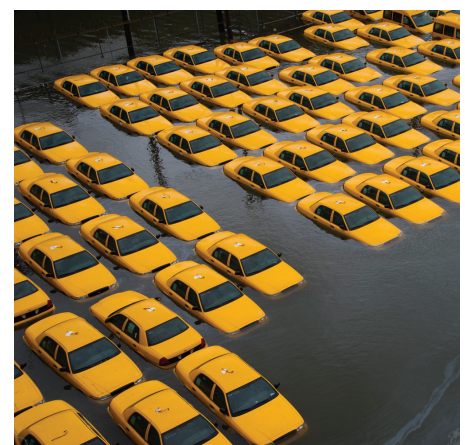
IBTTA President **Rob Horr**, Executive Director of the Thousand Islands Bridge Authority, said toll authorities' most fundamental mandate is to deliver safe, reliable mobility.

"This was a game-changer for all of us who operate infrastructure," and "we're very interested in your wealth of knowledge and experience and your thoughts toward the future," he told participants. "You were in the middle of it for much longer than the storm itself, and you still are."

"You've all been through some terrible events, some very challenging events," said IBTTA Executive Director and CEO **Pat Jones**. "There's an opportunity here for our industry to grow, be better and be better prepared for future severe weather events."

"There's an opportunity here for our industry to grow, and be better prepared for future severe weather events."

— Pat Jones, IBTTA



"This was a game-changer for all of us who operate infrastructure."

— Rob Horr,  
Thousand Islands Bridge Authority







## A GAME-CHANGING EXPERIENCE

Participants from Florida, New Jersey, and New York, all veterans of past emergencies and their effects on transportation infrastructure, said they'd never imagined the devastation they would experience in the midst of a severe weather disaster.

Service areas along toll roads are the only facilities in a storm zone with power, food and light.

"I never thought I would gain the hurricane experience I've had over the years," said **Alfred Lurigados**, Deputy Executive Director of the Miami-Dade Expressway Authority. "We learned a ton of things about communicating internally, communicating with staff, communicating with consultants," and how to get infrastructure back in service as quickly as possible. The group shared stories of:

- ✦ An expressway closed by the collapse of a bridge under construction
- ✦ A well-intended but dangerous

attempt to monitor conditions on the ground in 60 to 70 mile per hour winds, leading to a command order that "no one is ever to go out in a storm ever again"

- ✦ A futile attempt to anticipate the changing track of a major storm that left "devastation everywhere" in a county that was not expected to see significant damage
- ✦ The sudden realization that it wouldn't suffice for an agency to rely on even a very effective snow manual, since "that [plan] did not withstand a hurricane"
- ✦ The recognition that service areas along toll roads are often the only facilities in a storm zone with power, food, and light
- ✦ The shock of seeing 101 mile per hour winds on New York's Triborough Bridge, followed soon by water rushing into commuter tunnels that had never flooded in 80 years of operation.

Hurricane Sandy delivered a harsh lesson "about climate change and the need to prepare for these kinds of superstorms in a way we didn't previously," said **Ronnie Hakim**, Executive Director of the New Jersey Turnpike Authority. "After the storm hit, the agency realized its mission was

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— *Ronnie Hakim,*  
New Jersey Turnpike Authority



to restore the greatest possible degree of normalcy, as quickly as possible."

"That was our goal," she said. "On Tuesday morning, how much of the road can we deliver?"

"This was a life-changing event for our agency," agreed **James Fortunato**, Vice-President and Chief of Operations for New York's Metropolitan Transit Authority (MTA). "In the Northeast, we have blizzards and snow and the public is used to that kind of event. What we saw unfold with Sandy was something we'd never seen before in any of our careers, and maybe in two or three generations," with "unbelievable" devastation in the Rockaways district and on Staten Island. Touring those sites nearly three months later, "you would never believe you were in America."





A key practice for future storms – establishing an integrated emergency operations center where various agencies can coordinate efforts.

## EMERGENCY PROCEDURES AND SYSTEMS

Participants identified procedures and systems as the cornerstone of an effective response to a weather disaster, with all the interagency and interjurisdictional coordination that is required. While participants from Florida had had ample opportunity to refine and test their plans through long experience with seasonal storms, some participants from the Northeast pointed to Hurricane Irene in 2011 as the trial run that helped them prepare for Sandy—even if there was some initial expectation that the latest storm would be another false alarm.

“We updated our hurricane plan for Irene,” said Fortunato. “It was a good thing we prepared for it when it came time for Sandy.” Despite scattered suspicions that public agencies had wasted their efforts the last time, “we followed our plan and implemented a lot of things we had put in place but never used for Irene.”

Key practices for future storms include:

- ✦ Establishing an integrated emergency operations center where state and local police, the department of transportation, and the toll authority can coordinate efforts
- ✦ Identifying backup locations and systems, from internal communica-

tions to payroll, to speed up business recovery in the event that an emergency center or a key administrative office is lost

- ✦ Stationing engineering teams on location to assess damage as soon as a storm has passed
- ✦ Developing a telecommuting policy for headquarters staff, to identify essential personnel and lay out pathways for them to do their jobs—whether their regular places of work are open or closed, and whether or not a travel ban is in place
- ✦ Setting up contracts that require private maintenance vendors to accept emergency change orders, then pre-staging crews on either side of expected points of vulnerability so that one team can get access if the other is cut off
- ✦ Anticipating the need for key operational information, like mobile PIN numbers, and essential equipment as basic as phone chargers, flashlights, and an adequate cache of flashlight batteries.

In contrast to more predictable events like snowstorms, **Hakim** and **Cedrick Fulton**, Director of Bridges, Tunnels, and Terminals for the Port Authority of New York and New Jersey, said

hurricanes require a much more nimble response. “The storm path can change dramatically, very quickly,” Hakim said. “You need a very timely forecasting schedule, and you need your entire senior team listening to the forecasts and asking questions in real time, then adjusting the plan.” Participants from other jurisdictions pointed out that storm tracks sometimes change faster than weather forecasts can keep up.

The New Jersey Turnpike began implementing its emergency plan five days before Sandy was expected to make landfall, accelerating communication with key staff and external agencies as the storm approached. A crucial conversation with state hydrologists took place about 36 hours before predicted landfall. The group mapped out the expected storm surge with printed wall maps from the Federal Emergency Management Agency (FEMA) and highlighter pens, “and it proved to be remarkably accurate,” Hakim said.



"The group mapped out the expected storm surge with FEMA wall maps and highlighter pens," and it proved remarkably accurate."

— Ronnie Hakim,  
New Jersey Turnpike Authority

For any agency, a key priority is to restore some degree of normalcy as soon as a storm has passed. "People get a sense of security when they see their government is back in business, so we wanted to get these facilities open as soon as possible," Fortunato said. "The good news is that we had all the bridge crossings open by noon Tuesday [after a Monday evening storm], which was really an unbelievable feat."

But to do that, organizations must be prepared to protect their vehicles and other equipment during the worst of a storm. "We'd have to be crazy to put our assets out there," Fortunato said. "We could lose equipment that can't be replaced for two, three, or four years." At some point, it was essential to shut

"Even with the best advance preparation, hurricanes still force emergency managers to ad lib."

— Jose Quintana,  
Florida's Turnpike Enterprise



down key tunnels in anticipation of the storm, rather than allowing a rush of salt water to damage the switching gear.

Participants identified a series of process and procedural issues that had to do with the relationships among agencies and jurisdictions:

- ✍ A "tremendous amount of managing" was often required when elected officials took a direct, visible role in recovery efforts.
- ✍ The Army Corps of Engineers arrived to assist with recovery efforts following Hurricane Sandy, and expected to operate in a consulting and oversight capacity. This required tolling authorities to coordinate efforts between their own contractors and in-house crews and the agencies mobilized by the Army Corps.
- ✍ In the aftermath of Hurricane Sandy, FEMA brought in fuel in lots of 9,000 gallons, but could not distribute it in smaller batches—even though no agency had that much storage capacity at a single location.
- ✍ It takes a huge amount of time and paperwork (and the occasional bit of semantic adjustment) to get FEMA reimbursement for allowable expenses. And the repair target—whether an agency is working to current code, or adopting a more resilient standard in anticipation of future weather events—is a constant question. In Florida, FEMA denied reimbursement for 3,000 light poles that had been destroyed by Hurricane Wilma in 2005: policies may have changed since but, at the time, lighting was not considered a safety item.
- ✍ Agencies in the states affected by Sandy were promised replacement buses from across the U.S., but the 350 vehicles arrived very slowly, and half of them were in poor condition.
- ✍ Local power utilities in the Northeast seemed to have a lot of trouble responding after Hurricane Sandy. "These are normally reliable people, but at the height of the storm they were nowhere to be seen, in both

states," a participant said. "We know they were under tremendous pressure given what was happening...but the communication between what was going on with them and what we could expect, particularly in terms of restoration, wasn't really good."

"It was essential to shut down key tunnels in anticipation of the storm, rather than allowing a rush of salt water to damage the switching gear."

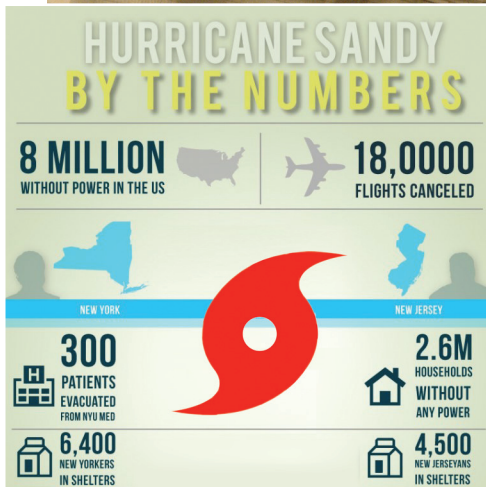
— James Fortunato,  
Metropolitan Transportation Authority



In the Northeast, one centralized communications center played a vital role in hosting conference calls and keeping the overall recovery effort on track. Road, bridge, and tunnel closures and openings had to be coordinated across multiple agencies, often by piecing together information and updates from multiple sources. The agencies most directly affected in New Jersey and New York State operated a varied infrastructure serving different transportation modes, Fulton said, and "there's a real difficulty trying to establish the issues going on simultaneously that have to be dealt with."

Even with the best advance preparation, hurricanes still force emergency managers to ad lib, said hurricane veteran **José Quintana**, Maintenance Engineer with Florida's Turnpike Enterprise. "But if you have a good plan to attack the storm, you can work with what you have and assign people to different functions."





## INTERNAL SYSTEMS: COMMUNICATIONS, POWER AND FUEL

Fortunato said the first rule in an emergency is to be self-sufficient for communications, power, and fuel. “It’s a credit to all of us around the table to have plans to deal with all these things on our own,” he said.

When severe weather strikes, email and mobile phones are often the first systems lost. One agency backs up its email on Google, so that essential information can still be exchanged when regular networks are down. Fortunato recalled a satellite phone that performed perfectly in an advance test, but was only useful as a paperweight when a storm actually hit.

When all else failed, he said he was grateful MTA Bridges and Tunnels hadn’t decommissioned its land lines and 400-MHz radio systems. “Our radios stayed up through the whole

“Our radios stayed up because they’re analog, they’re old, and we own the lines and the power.”

— James Fortunato,  
Metropolitan Transportation Authority

event because they’re analog, they’re old, and we own the lines and the power,” he recalled. “You really have to think about keeping the old technology mixed in with the new and make sure you can maintain your own systems.”

In Hurricane Sandy, the long delay in getting power back online became debilitating for road operators. In the field, “it was power and supply,” Fulton said—the dual challenge was insufficient fuel to operate trucks, and insufficient backup power to run fuel pumps.

The MTA was fortunate to have made a significant prior investment in back-up power supplies. “We have generators so massive that the first year we got back \$83,000 from [the power utility], because on high demand days we take our facilities off the grid and start up our own generators,” Fortunato said. When the grid failed, the equipment ran entire toll plazas and emergency facilities.

At one point in the Hurricane Sandy recovery, the New Jersey Turnpike Authority realized it had a couple of extra generators that could be used to reopen private gas stations along the

highway, helping to alleviate massive backups at the few other operating stations. By the fourth or fifth day of the crisis, “our maintenance efforts were about keeping the generators up and running,” Hakim said.

Fortunato said the MTA already owned a diesel fuel truck to move scarce supplies between facilities and keep mobile command centers in operation. But after Hurricane Sandy, “the lesson learned is that we also need a gasoline tanker.”

Fulton said underground storage tanks may be problematic from an environmental perspective, but they’re more reliable than an extended supply chain when disaster strikes. “Many of our facilities are resisting pressure from the environmental folks to take the tanks out of the ground, and thank goodness,” he said.

One agency reported some tense moments when local law enforcement showed up and demanded fuel that was needed to keep transportation operations on the road. “Once people found out we had fuel, the floodgates opened,” another participant agreed.





## HUMAN RESOURCES

Participants discussed the crucial moments when effective emergency response depended on the institutional memory of veteran employees who had been on the job for decades—or on retirees who were called back into service to share their on-the-ground knowledge of complex transportation systems.

Bring in the right expertise to solve each problem. Firefighters are “the smartest people for moving water.”

— Cedrick Fulton,  
Port Authority of New York and  
New Jersey

Effective human resource management also means bringing in the right expertise to solve each problem. The Port Authority quickly learned that firefighters are “the smartest people for moving water,” Fulton said, with experience calculating volumes, rises, runs of pipe, and the pump power required to empty a flooded area.

Access to limited fuel supplies became a human resource issue when emergency managers saw they would lose access to essential personnel if they couldn’t drive home. As public agencies, toll authorities had to charge employees for their fuel—and to avoid any appearance of impropriety, they limited supplies to five gallons of diesel and gasoline at an above-market rate that would still be preferable to a three-hour wait in a gas line. “Four weeks later, they discussed filing a grievance that we’d overcharged them,” one participant said. “No good deed goes unpunished.”

For future emergencies, the participant’s organization will introduce a swipe card system to facilitate cashless payment and institute a fixed procedure, reviewed by in-house legal counsel, for setting an appropriate fuel price for employees who are stranded. The key takeaway: This was yet another area where advance planning was critical.

“It sounds like it isn’t a big deal, but it is,” the participant said. “We mobilized 1,200 employees, and 900 of them couldn’t get home, so it’s a big deal.” During Hurricane Wilma, Florida’s

“I had people who knew their whole neighborhood was on fire in The Rockaways... people who knew they’d lost their homes [who] stayed on the lines.”

— James Fortunato,  
Metropolitan Transportation Authority



Turnpike had no difficulties when it charged employees at cost for five gallons of gas per day, Quintana said. But when one agency charged less than the pump price, a participant said, “that was like starting a war.”

Agencies operating under disaster conditions always face difficulties determining who should and should not be compensated if they stay



home from work. Some staff report for duty out of sheer dedication, but others might still receive their regular pay if they stay away in a declared emergency. Fortunato noted that some private companies offer bonuses for employees who work during an emergency, but that practice is not available to public agencies.

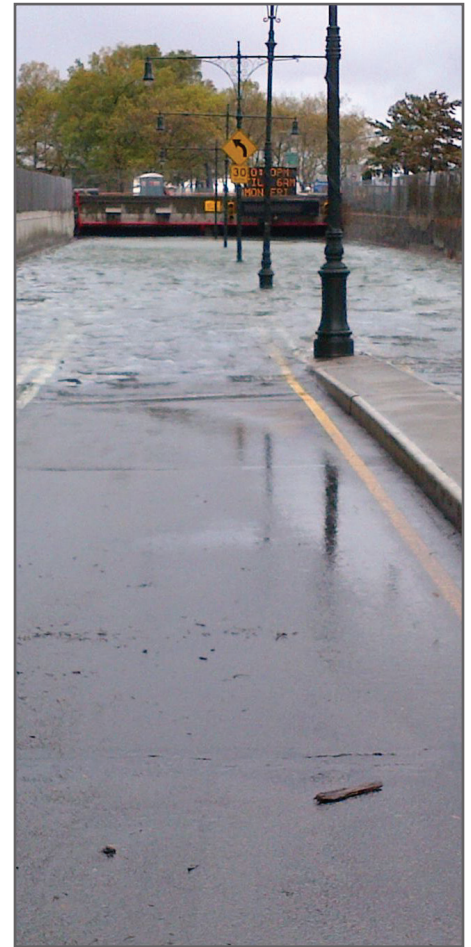
An equal and opposite problem arises when the most dedicated staff and managers refuse to leave their posts. “There’s a certain point where we tell them they must come off the clock and get some rest,” he said.

And then, there were the heroes who worked up to 40 hours at a stretch with no food or provisions. “I had people who knew their whole neighborhood was on fire in Rockaways, with 60 houses burning at one time,” but spent their days walking through flood water to carry out rescue operations. “Several people who knew they’d lost their homes stayed on the lines,” Fortunato recalled.

“We’ve gone through snowstorms and you could always find a store open and food in the area,” he continued. But during Hurricane Sandy, with the Port of New York closed due to debris, tanker traffic stopped and the city ground to a halt. “People knew that once they came in they were going to be there forever. And yet they still came in, did what they had to do, and had the bridges open the next morning. That’s a hero story.”

In Florida, agencies’ standard practice is to shut down operations and send staff home eight hours before sustained, gale-force winds are expected. As soon as a storm passes, employees are asked to report for work as soon as they think it’s safe to do so.

“I have people on my staff who want to be out there in the wind, and that’s just not right,” Quintana said, but other employees are uncomfortable driving at night or in heavy rain. “That’s fine, too,” he said. “I want them to feel safe.”



## AN ALL-HAZARDS APPROACH

Although the focus of the forum was on hurricanes, a couple of participants endorsed an all-hazards approach to emergency preparedness.

“When I look at our hurricane plan, our snow plan, and our emergency plan, they’re very much alike,” said Fortunato. “An emergency is an emergency, and the planning is very similar. You have to remember what happened, expect the unexpected, and plan for the next operational period.” Once this broader approach to emergency preparedness takes hold, the next step is to “push down in the organization [and] get people two and three levels down thinking the way we think.”

Fulton said agencies in the Northeast had spent years planning responses

to man-made incidents and crises that shaped their approach to emergency preparedness. “A couple of years ago, we began to look at the capital investment and recognized that it’s about all hazards. We actually changed the language we were using,” from “a terroristic framework to an all-hazards framework.” Flooding still didn’t receive much attention for agencies in the Northeast. But now, “we’re going to focus a whole lot more on water, surge, and the impacts, duration, and unpredictability” of an event like Hurricane Sandy. After devoting so much attention to the possibility of a rocket-propelled grenade fired from across the water, he said, “the water is right there.”

“We’re going to focus a whole lot more on water, surge, and the impacts, duration, and unpredictability” of an event like Hurricane Sandy.

— Cedrick Fulton,  
Port Authority of New York and New Jersey







## IMPLICATIONS FOR TOLL REVENUE

Whenever severe weather strikes, the toll agencies in the affected areas have a series of decisions to make—and face predictable expectations from customers—when it comes to revenue collection.

“There was such a groundswell of emotion after Sandy that the decision

“There was such a groundswell of emotion after Sandy that tolls were waived for anyone associated with the recovery.”

— Ronnie Hakim,  
New Jersey Turnpike Authority



was made to waive tolls for anyone associated with the recovery,” Hakim said. “That’s as reasonable a decision as any other, particularly if we work something out to recover some of [the lost revenue].”

During the evacuation phase of an emergency, toll roads are opened up to facilitate outbound traffic. Even with open road tolling, a participant said his agency suspends collections, “not to give anyone the excuse that they couldn’t evacuate because they didn’t have the money.” Another agency learned the value of allowing free access in both directions, to accommodate users who have to make more than one trip to evacuate their families and their most valuable possessions. The larger issue remains: Will FEMA reimburse toll agencies and authorities for lost revenue during severe weather?

In Hurricane Sandy, tolls in the Rockaways area were suspended by order of the Governor of New York, and the state legislature issued a special bond to compensate the toll agency for lost revenue. But when out-of-state utility vehicles arrived

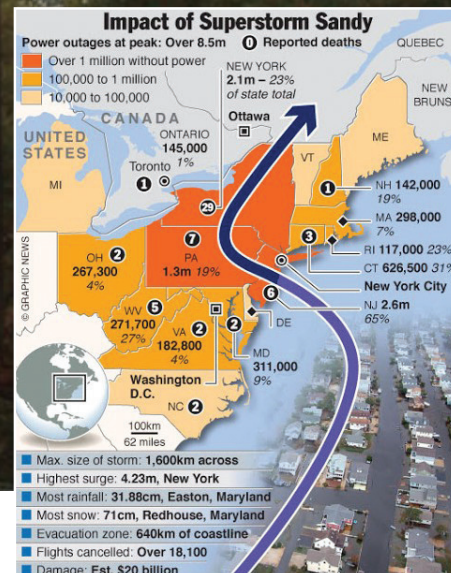
Participants generally agreed that utility fleets responding to emergencies should pay their tolls when they’re being compensated for their work.

to assist with reconstruction, “it was very hard to believe what was going on,” Fortunato said: Even the vehicles that had EZ-Pass accounts wanted free access to toll roads.

“They were making money transporting goods and supplies, but when they got up here, they wanted toll-free passage.” Participants generally agreed that utility fleets responding to emergencies should pay their tolls when they’re being compensated for their work.

A participant said FEMA was still deciding whether to reimburse tolls for utility and tree companies and insurance claim investigators involved with Hurricane Sandy. For future storms, one option would be to establish pre-funded accounts through local utility companies, then run customers through cash lanes.





# HURRICANE SANDY

IN THE EYE OF SOCIAL MEDIA

by: *Matthew Conslazio*

via **Facebook**

Top-Shared Terms by U.S. Users

1. we are okay
2. please everyone to please, have power!
3. damage
4. hope everyone is ok
5. frozen
6. made it
7. safe
8. thankful
9. fine
10. affected


Talk Trends

Hurricane Sandy

8.34

1st Dominant Debate

8.18




via **Twitter**


Used as a major communication device

- \* Con Ed tweeted to shoot down false rumors of trapped workers
- \* MTA tweeted to update with damage and service information

Mentions of Hurricane Sandy between IPM and TIAA



via **Instagram**



\* On Monday night, roughly 10 photos per second were uploaded

**#Sandy**  
484,600 photos


**#Frankenstorm**  
38,000 photos

via **Foursquare**

40,000 people checked into

**Frankenstorm Apocalypse - Hurricane Sandy**

users shared tips & news



Even when people have lived through that experience, “it gets to the point where if a hurricane misses or goes on another track, the next time around, they don’t pay attention.”

But over the last dozen years, Hakim said, motorists have adjusted their expectations, variable message signs (VMS) have become more common, and real-time communication systems have made it easier to let customers know which areas are open or closed, with fuel or service available.

Participants described the websites, email systems, mobile apps, Facebook pages, and Twitter accounts they had used to distribute up-to-date information on road safety and closures. One agency found its staff weren't sure they could turn to Twitter for emergency communications in an organization that generally restricted employees' use of social media on the job. Lurigados said social media had been a useful alternate channel for reaching commercial and mainstream media, particularly after email systems failed.

January 10, 2013 • Miami, Florida • [www.IBTTA.org](http://www.IBTTA.org)





## WHAT'S NEXT?

*A Forum on Super Storm Sandy: Adaptation and Resilience* is the beginning of a dialogue that will be crucial in building greater resilience and adaptability across the tolling industry. IBTTA is committed to helping its members prepare for greater weather variability and more frequent severe storms that are widely predicted for the years ahead.

As a first step, we welcome your comments on this report, and any information on your own organization's response to severe weather.

Please write to [pjones@ibtta.org](mailto:pjones@ibtta.org) and put "Sandy" in the subject line.

As people anxiously scanned their Twitter feeds, Instagram and web browsers throughout the storm, a number of stunning, yet fake photos also went viral. The photo displayed on this page of the 14th Street-Union Square subway stop in Manhattan is a good example of a stunning faux photo that is all over the internet. Beware!



If you ask people what they remember about Hurricane Sandy, social media usually isn't the first thing that comes to mind. Gov. Chris Christie of New Jersey took to his Twitter account to get the word out before, during and after the storm and with the widespread power outages Sandy left behind, people relied on social media, which they could access from their mobile devices, for



warnings and updates. More than 20 million tweets were sent about the storm between Saturday and Thursday, said Rachael Horwitz, a spokeswoman for Twitter.

**Governor Christie**
  
@GovChristie

Don't Be Stupid, Get Out.  
[youtube.com/watch?v=5hpxj6...](https://www.youtube.com/watch?v=5hpxj6...)

8:37 PM - 28 Oct 12

313 RETWEETS 59 FAVORITES

**Mike Bloomberg**
  
@MikeBloomberg

NYC Tap Water is absolutely safe to drink #SandyNYC #Recovery

6:40 PM - 01 Nov 12

179 RETWEETS 19 FAVORITES

**Andrew Cuomo**
  
@NYGovCuomo

#LIRR update for FRI: Hrly service on #Babylon & #Huntington (to Penn Station) RESTORED @LIRRScoop #recovery

10:21 PM - 01 Nov 12

24 RETWEETS 3 FAVORITES

**Governor Dan Malloy**
  
@GovMalloyOffice

An uprooted tree in #Stonington  
[pic.twitter.com/Fp3Gd6Xs](https://pic.twitter.com/Fp3Gd6Xs)

2:48 PM - 31 Oct 12

2 RETWEETS 2 FAVORITES

**Martin O'Malley**
  
@GovernorOMalley

A big thank you to @Twitter @whitehouse @Facebook & @Google for helping us share information related to #Sandy.

3:18 PM - 31 Oct 12

7 RETWEETS 3 FAVORITES

**NJ National Guard**
  
@NJNationalGuard

HOBOKEN food distribution update. Please read.  
[fb.me/inMnQi4dD](https://fb.me/inMnQi4dD)

4:53 PM - 01 Nov 12

**American Red Cross**
  
@RedCross

In Hoboken, we have 20 vehicles and 6 box trucks w boxed lunches, ready-to-eat meals, water, 7 mental health workers (11.1.12) #Sandy

6:35 PM - 01 Nov 12

209 RETWEETS 26 FAVORITES



## SANDY FORUM PARTICIPANTS

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**Daniel DeCrescenzo** is Director of Central Operations at the Triborough Bridge and Tunnel Authority, aka, TBTA or MTA Bridges and Tunnels, based on Randall's Island in New York City. The agency serves some 800,000 customers daily, with annual toll revenue of approximately \$1.5 billion. TBTA operates the Verrazano-Narrows, Bronx-Whitestone, Throgs Neck, Henry Hudson, Robert F. Kennedy (formerly Triborough), Cross Bay and Marine Parkway bridges, and the Queens Midtown and Hugh L. Carey (formerly Brooklyn-Battery) tunnels. The Authority is currently operating a pilot program at the Henry Hudson Bridge using all-electronic tolling.

Mr. DeCrescenzo began his career at the Authority as a Bridge and Tunnel Officer in 1990. As he progressed through the ranks he held various positions within the Agency, including Training Instructor, Operations Superintendent and General Manager. In his current role Daniel oversees the Incident Management and law enforcement operations across the agency's nine facilities. He also manages the Operations Command and Control Center as well as the Central Notification Unit.

During his long tenure in management at the Verrazano-Narrows Bridge, which links Brooklyn to Staten Island, he worked year-after-year in conjunction with New York City Marathon organizers on planning the race kick-off for the over 40,000 runners at the Staten Island side of the bridge, and directed post-race clean-up efforts in order to reopen the bridge to traffic without unnecessary delay. His ultimate goal for the Authority is to keep traffic moving safely and securely at all crossings, while maintaining a high standard of customer service.

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**James Fortunato** is Vice President and Chief of Operations at the Triborough Bridge and Tunnel Authority, aka, TBTA or MTA Bridges and Tunnels, based on Randall's Island in New York City. The agency serves some 800,000 customers daily, with annual toll revenue of approximately \$1.5 billion. TBTA operates the Verrazano-Narrows, Bronx-Whitestone, Throgs Neck, Henry Hudson, Robert F. Kennedy (formerly Triborough), Cross Bay and Marine Parkway bridges, and the Queens Midtown and Hugh L. Carey (formerly Brooklyn-Battery) tunnels. The Authority is currently operating a pilot program at the Henry Hudson Bridge using all-electronic tolling.

Chief Fortunato joined the Authority in January 1981 in an entry level role, then moved on to various positions across all facilities in the Law Enforcement unit, Internal Affairs, Maintenance, and Special Operations. In his current role reporting to the Authority president, he oversees the Law Enforcement, Operations and Maintenance functions under one umbrella, including Emergency Response and Preparedness, Commercial Vehicle and Speed Enforcement.

During his 32-year tenure he has managed the operation of the Authority's busy crossings through extreme weather conditions, high-security alerts, and in coordination with such major events as the New York City Marathon, the "5-Boro Bike Tour," and the annual "Firefighter Stephen Siller Memorial Tunnel-to-Towers" charity run. At the time of the 9/11 World Trade Center attacks, Chief Fortunato was in the midst of establishing the agency's first 24/7 Central Command and Control Center, which became operational just one week before the attacks. In the following months and years he expanded the Center into TBTA's primary communications and incident response unit.

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**Cedrick Fulton** was appointed Director of the Tunnels, Bridges and Terminals Department of the Port Authority of New York and New Jersey in November of 2010. He served previously as the department's Deputy Director. As Director, he is responsible for overseeing the operations, maintenance, security and planning for the George Washington Bridge, Holland Tunnel, Lincoln Tunnel, Bayonne Bridge, Goethals Bridge, Outerbridge Crossing, Port Authority Bus Terminal and George Washington Bridge Bus Station. Together, these facilities serve between 1.2 and 1.5 million customers each day and generate approximately \$2 billion in annual revenue. Under Mr. Fulton's leadership, the department's efforts are focused on preserving the Authority's infrastructure, improving customer service while implementing operational efficiencies at the Authority.

Mr. Fulton is active on a number of toll and transportation industry boards, serving on the Boards of the International Bridge, Tunnel and Turnpike Association, the I-95 Corridor Coalition, and Transcom. Since starting his Port Authority career in 1993, Mr. Fulton also held important positions in the Port Authority's Aviation Department. In addition, he managed the world's busiest bus transit facility, the Port Authority Bus Terminal that services over 200,000 customers and 7,000 bus movements per day.

Prior to joining the Port Authority, Mr. Fulton was the Director of Contract Administration for the New York City School Construction Authority and a Senior Contract Negotiator for the State of New Jersey Division of Building and Construction.





**Veronique (“Ronnie”) Hakim** Ms. Hakim was named Executive Director of the New Jersey Turnpike Authority in September 2010. Since joining the Turnpike Authority, Ms. Hakim has spear-headed needed cost cutting initiatives while maintaining the agency’s high performance levels. These savings and efficiencies include cutting \$10M from NJTA’s operating budgets, continuing funding of the agency’s ambitious \$7B Capital Program at a lower cost of capital and bringing a higher level of transparency and accountability to the agency. Ms. Hakim currently serves on the Board of Directors of the International Bridge, Tunnel and Turnpike Association, the Committee for a Smart New Jersey, and is a member of the Alliance for Toll Interoperability.

Previously, Ms. Hakim worked for more than 23 years at the Metropolitan Transportation Authority (MTA) in New York City, as Special Counsel at MTA New York City Transit and later as Senior Vice President and General Counsel for Capital Construction at MTA Capital Construction. In that position she provided senior management with policy and legal advice on numerous large-scale projects, including the Second Avenue Subway, the LIRR East Side Access Project, and the No. 7 Subway Extension Project.

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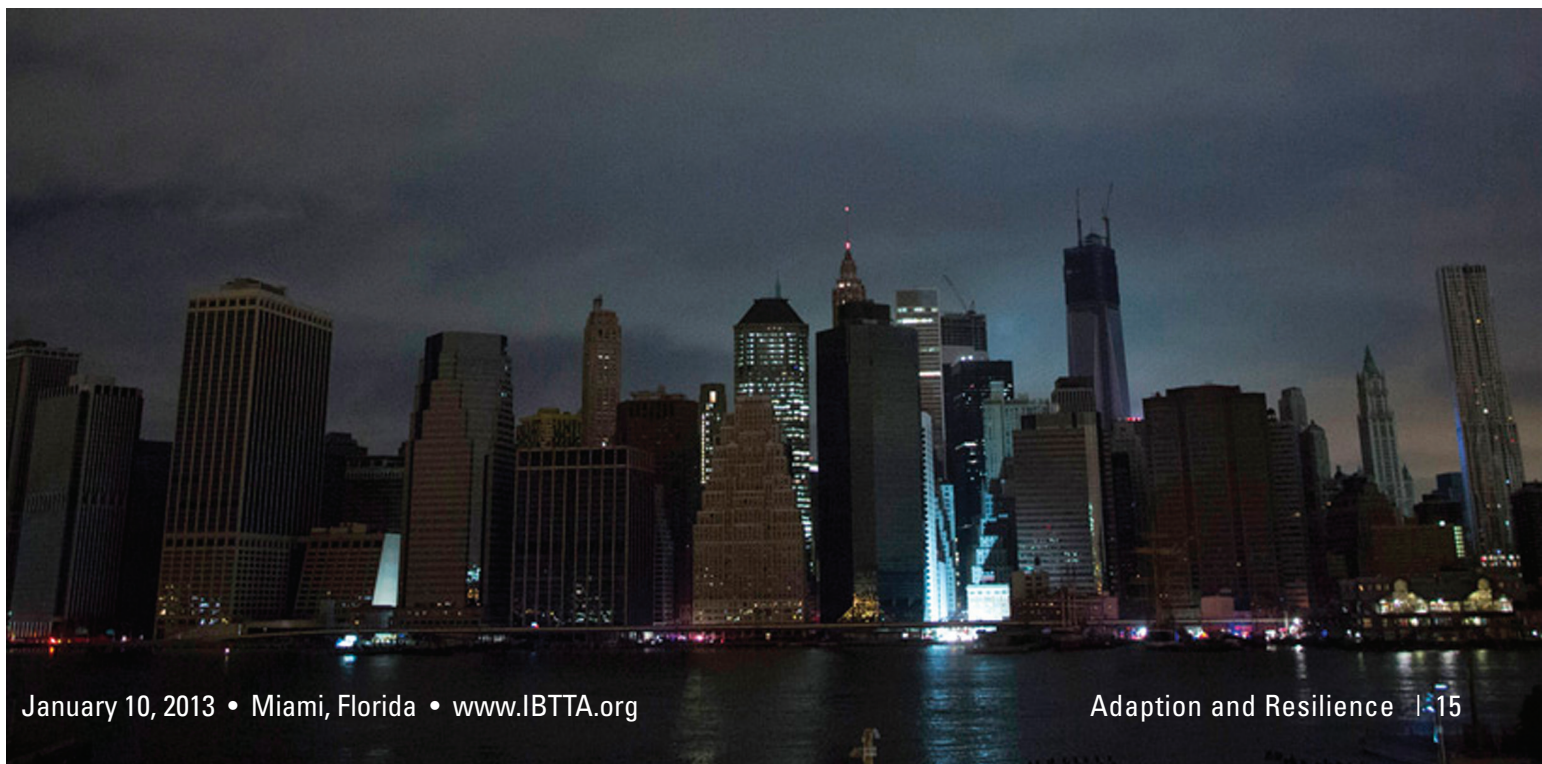
**Alfred Lurigados, P.E.**, is the Deputy Executive Director / Director of Engineering at the Miami-Dade Expressway Authority (MDX). Mr. Lurigados oversees the implementation of MDX’s Five-Year Work Program, which includes all planning, design, construction, operations and maintenance of the MDX highway system. MDX currently has over \$700 million worth of projects on-going, some together with Florida Department of Transportation.

A graduate of Florida International University, Alfred sits on the university’s Engineering Industry Council and the Engineering Advisory Board for Miami-Dade College.

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**Jose Quintana, P.E.**, is with Florida Drawbridge, a leader in movable bridge operations, maintenance and repair services. He previously held the position of Maintenance Engineer for Florida’s Turnpike Enterprise (FTE) and was responsible for managing all aspects of the Enterprise’s Roadway Maintenance Program. This included oversight of FTE’s maintenance budget for road and bridge maintenance program, structures inspection program and emergency management responsibilities. His area of expertise includes bridge structure design and repair, bascule bridges, bridge inspection and maintenance management systems. Mr. Quintana has over 25 years of experience in the construction and maintenance field, with over 22 of those years in service with the Florida Department of Transportation.







The International Bridge, Tunnel and Turnpike Association (IBTTA) is the worldwide association for the owners and operators of toll facilities and the businesses that serve tolling. Our mission is to advance toll financed transportation. Each year the association engages thousands of transportation professionals from toll agencies, concessionaires, and allied businesses through educational meetings, knowledge-sharing, and advocacy. Founded in 1932, IBTTA has members in more than 20 countries on six continents.

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**CAUTION GAS LINE  
BURIED BELOW**

**SHIELDTEC**  
Warning Tape  
Model: ST-100  
Length: 100 ft  
Width: 2 in  
Weight: 1 lb



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