OEM
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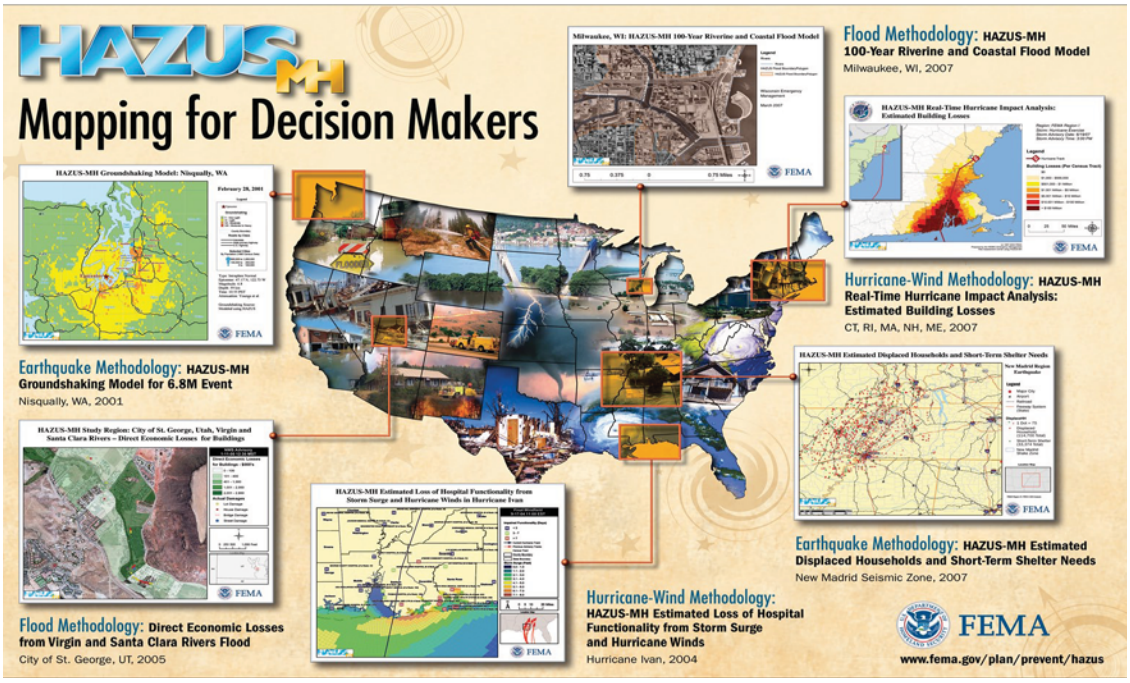
The Sit Rep

Newsletter of the NYC Office of Emergency Management

Grounding Guesswork in Science

Using HAZUS to Predict Damage



Disaster professionals around the world struggle with the difficulties of planning not only for the unexpected, but for the unprecedented. Learning from experience is one thing, but trying to guess what might happen if a city faces something new is a different challenge altogether. Expressions like "100-year flood" or "1,000-year earthquake" are abstract, even mystical terms for most people, but they are very real to emergency managers. Fortunately, there are tools like HAZUS-MH to ground the guesswork in science.

HAZUS-MH is a computer program created by the federal government to help cities estimate damages from earthquakes, hurricanes, and floods in order to create realistic plans, test mitigation strategies, and speed up resource requests and recovery efforts. The software was first used in California to estimate the effects of earthquakes on various types of buildings.

On July 15, OEM's Lynn Seirup gave a presentation on using HAZUS-MH to help plan for emergencies in New York City. Her audience at the Department of Health and Mental Hygiene's "Using Environmental Data During Emergencies" workshop consisted of engineers, city planners, and GIS specialists from across the city eager to learn how to use the technology to protect New York from disaster.

"The software develops a damage estimate by looking at the strength of individual building components and how they react to different forces," Lynn explained. "Fragility curves specify the probability of failure for different types of buildings."

An earlier version of HAZUS was used to estimate the amount of debris at the World Trade Center site after September 11th. HAZUS-MH is in its third installment and has expanded to include damage estimates for hurricanes and flooding in addition to its original estimates about earthquakes.

Of all the plans constructed by OEM, only the Hazard Mitigation Plan features estimates from HAZUS. The Hazard Mitigation Plan is a long-term education, protection, and investment plan

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Editor's Note

It' s summer in the city and it is hot. OEM opened cooling centers for two different heat waves already this summer and the broiling month of August has just begun.

This summer also marked the completion of a formal Disaster Assistance Center Plan and the first-ever OEM Independence Day potluck lunch.

This issue of *The Sit Rep* features articles about HAZUS, a disaster planning tool, and the volunteers who donate their time and energy to protecting and preparing New York City.

Enjoy the articles, celebrate the milestones, and catch up on agency news. And, as always, if you have ideas, stories, of photos you'd like considered for *The Sit Rep* please send them to Christopher Varley. He's sitting outside Henry's office trying to block out the whistling.

A Noble Sacrifice: Volunteering in New York City

For many people, the term "volunteer" conjures images of bleeding-heart liberals fighting off dysentery in some far away place or ladling soup into outstretched bowls at an inner-city shelter. But as the public sector grows, government agencies are reaching out to volunteers to help manage increasing workloads. OEM's Community Emergency Response Team (CERT), Citizen Corps Council, and Ready New York programs have grown significantly over the past year and the agency has retained the services of three volunteers to help keep pace. The Sit Rep sat down with these individuals to learn about them and their paths to volunteerism at OEM.

Jay Jun

Jay Jun, a 25-year-old Volunteers in Service to America (VISTA) volunteer from Seattle, Washington, joined OEM's CERT program to assist with volunteer coordination and team management in November 2007.

AmeriCorps VISTA is a one-year, full-time volunteer experience. Members receive a small living stipend, which barely covers living expenses in New York City, and medical benefits. AmeriCorps VISTA members are not permitted to participate in outside employment or schooling while in service.

Jay applied for a number of positions along the east coast, but insists that OEM was her first choice.

"I really wanted to come to New York, but it was more than that," Jay laughed. "I've always been attracted to the field of emergency management."

Before joining AmeriCorps, Jay spent four years with the American Red Cross (ARC) working in everything from volunteer coordinating to disaster services. In 2005, Jay even spent three weeks creating and staffing a 300-person call center to distribute resources to victims of Hurricane Katrina. She is proud to have helped people rebuild in the wake of tragedy, but the experience left a bitter taste in her mouth.

"We didn't really have a system to distribute money. ARC just wanted to push it out so we ended up with a lot of fraud," Jay explained. "One day, I spent almost 17 hours on the phone rejecting fraudulent claims."

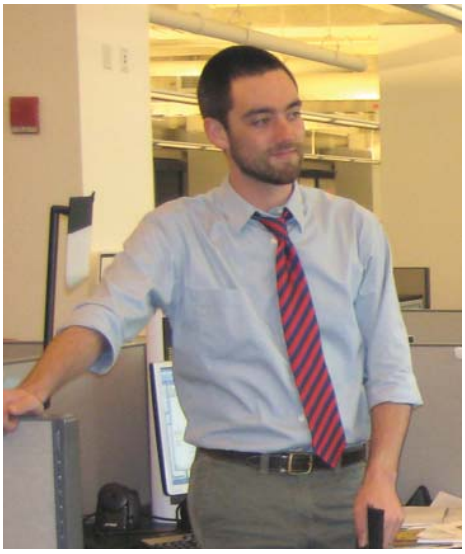
Jay first encountered CERT while working as a fire support EMT in Seattle. "It is basically the same as a fireman, but we didn't enter the buildings," Jay said. "I wasn't big enough to carry the hoses."

Jay has noticed a lot of similarities between Seattle's interpretation of the program and New York City's. But perhaps the differences are more interesting than the similarities.

"In Seattle, CERT played no active role in response or preparedness," Jay said. "They would not be deployed until Armageddon."

Jay will be with OEM until November 2008, after which she plans to seize any opportunity that will keep her in New York.

Calder Yates



Calder Yates is a 23-year-old artist from Jacksonville, FL, who is constantly bemused by the mystery surrounding coastal storms up north. He moved to New York City in August 2007 as part of the VISTA volunteer component of AmeriCorps and joined OEM the following month.

Calder applied to a number of art education programs in both New York City and Boston, but decided to take the OEM position because of its exciting public aura.

"I'm interested in how people organize to accomplish tasks beyond the reach of the individual," Calder explained.

Calder works in External Affairs with Herman Schaffer on Citizen Corps Council projects and is leading the effort to create community disaster networks through local houses of worship. He enjoys the professionalism of the agency and the clarity of purpose in his projects.

"I can see a serious need for a plan to guide how the public will obtain response and recovery information," he said.

Calder's background as an artist provides him a rare and valuable perspective on public outreach.

"There is a huge amount of crossover in understanding and predicting how your audience will receive, react, and respond to different stimuli, be it a piece of art, an advertisement, a presentation, or even an e-mail alert," Calder explained.

When he finishes his term at OEM in September 2008, Calder plans on going back to school for his master's degree in fine arts. Some of his artwork will be on display August 15-31 at the Errant Garrison gallery in Williamsburg, located off North 12th Street between Bedford and Berry.

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Grounding Guesswork in Science (continued)

that explains what New York City is doing to reduce loss and damage to its population and infrastructure before a major disaster. It must be approved by the Federal Emergency Management Agency (FEMA) before New York can qualify for federal funding. Around 75% of the U.S. population is currently covered by a FEMA-approved hazard mitigation plan.

"We're basically using HAZUS as a compliance measure this time around," said Heather Roiter, an OEM planning specialist. "It helps us refine our Hazard Mitigation Plan in a way that should make us eligible for a lot of FEMA funding."

Aside from the federally mandated Hazard Mitigation Plan, OEM has been reluctant to embrace HAZUS for operational planning. The sheltering component of New York City's Coastal Storm Plan, for example, relies on estimates provided by FEMA's national planning scenarios.

"HAZUS is just too detailed to be practical," said Kelly McKinney, OEM's deputy commissioner for planning and preparedness. "Most cities or jurisdictions do not have the level of data HAZUS requires to form its estimates."

To develop its damage estimates, HAZUS creates meticulous models for each type of building in a city, taking into account details like roof shape and how the roof is attached to the rest of the structure, even down to the type of nails used. The software combines these details with general information like building height and age, land zoning, and vegetation, which is important for debris estimates like downed trees.

> "After all, wind can blow a building down or a wave can knock it over, but it can only be destroyed once."

These estimates build a basic understanding of how a city will weather one of the natural disasters loaded into the software. By varying the size and scope of a disaster, HAZUS-MH can estimate the levels of damage to building stock, the number of people who will need shelter, the amount of economic loss from property damage and business interruption, and the amount of debris (brick and wood, concrete and steel, and trees). City officials can use the estimates as a starting point to develop and test plans to protect the city.

"If you change the input data to reflect a change in the building code or a land use change and compare the loss estimates, you can start to do a cost-benefit analysis of different mitigation strategies," Lynn said.

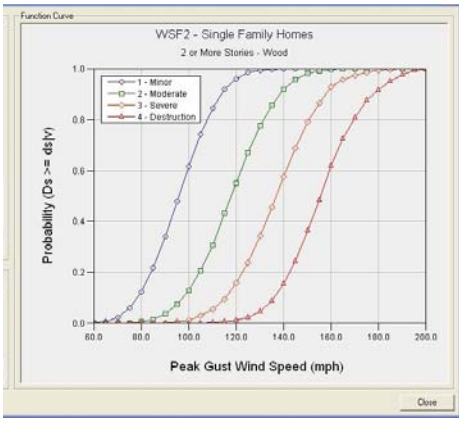
Unfortunately, the practical applications of HAZUS do not yet live up to their theoretical promise. While estimates may reveal that a conversion to a certain type of storm window would reduce losses and debris by a certain percentage, testing the variables is never as simple as it appears. Damage estimates for the hurricane model, for instance, focus solely on wind damage, ignoring the destructive effects of storm surge that are sure to accompany any major storm. A companion flood model may be run separately, but the aggregate conclusions need to be examined with a trained eye.

"After all," Lynn explained, "wind can blow a building down or a wave can knock it over, but it can only be destroyed once."

Refining HAZUS' data into a useful form has been almost a full-time job for Lynn.

"When we got the program, the default data for New York City was the same as that of New York State," Lynn said. "In other words, HAZUS estimated that 60% of New York's multi-family housing was made of wood. One look at Manhattan's towers of concrete, steel, and masonry shows you how far off the default data was."

HAZUS-MH may still be in its adolescence, but every iteration of the program offers new promise to prepare a city as complex as New York for the unknown.



Fragility curves produced by HAZUS

Milestones

On May 4, Jake Cooper finished second out of more than 1,000 runners in the New Jersey Marathon. His official time was 2:36:24, just three minutes and 15 seconds behind the leader. Congratulations, Jake!

On June 14, Kiran Dhanji completed the New England Spirit Triathalon. The race opened with a quarter-mile swim at Craigville Beach followed by a 10-mile bike course and a 3.6-mile run. Kiran finished the race in 1:38:41. Way to go, Kiran!

Seth Cummins, whose USTA 3.0 team made it to the state finals in Syracuse last year, lost in the citywide tournament at the US Tennis Center on July 26. "Like Jake," Seth said, "I enjoy competing at an elite level; it's just that mine's for people who are old and overweight."

CERT Graduation

On July 23, the City welcomed eight new Community Emergency Response Teams. Deputy Mayor Skyler, Fire Commissioner Scopetta, and OEM Commissioner Bruno inducted 156 volunteers into the CERT program, including 32 members from the second corporate CERT team, which is sponsored by UBS.

Around the Office

Commissioner Bruno set aside one of his weekly senior staff meetings to host an "All Hands" meeting for the entire OEM staff. The meetings are an opportunity for the entire staff to hear firsthand how OEM projects are progressing and what OEM is working on with City Hall.

On July 3, OEM hosted its first-ever Independence Day potluck celebration. Staff members contributed tasty dishes and the entire agency feasted and celebrated in the parking lot. Check out the photo spread on page five.

Awards

On August 7, OEM will receive an award for its strong and innovative use of FEMA's HAZUS program at the National HAZUS Conference in San Diego, CA. OEM has been using HAZUS to inform NYC's disaster plans since 2005.

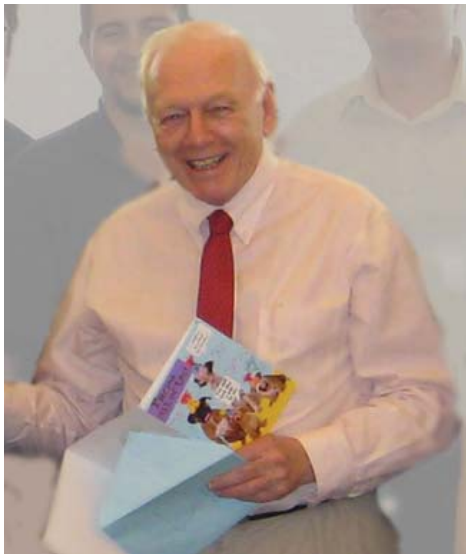
On July 2, OEM received an award from the New York Blood Center for its outstanding performance in 2007. The agency donated 87 pints of blood in 2007, which may have saved as many as 261 lives.

Globetrotting

On July 22, Dario Gonzalez and Jim Yakimovich, two members of the New York Task Force 1 Urban Search & Rescue team, deployed to San Antonio as part of a 28-person incident support team to assist FEMA's response to Hurricane Dolly.

On July 25, Jim Cho, Erin Rampe, and James Rallis joined a wildfire response team near Redding, CA. FEMA embedded the OEMers in the incident management team to help them gain experience in field responses. Like the OEMers who assisted with the California wildfire response in October 2007, they were exposed to every aspect of the operation. Look for a full recap in the next issue of *The Sit Rep*.

Volunteering (continued)- Frank Lowe



Frank Lowe, 81, is an actor from a coal mining town in southwest Virginia. He joined OEM during the summer of 2008 as part of ReServe, a program that connects New York City's experienced older adults with jobs that help them use their life skills for the public good.

"I was interested in any opportunity to contribute beyond stuffing envelopes," Frank joked.

Frank started acting on the stage in New York City when he was 22. He loved every minute of it, but he burned out after six years and left the theater in search of a new line of work. He landed in the mail room of an ad firm and worked his way up to producing television commercials.

"This was in the '50s and all television commercials were live," Frank explained. "Stage acting afforded me a lot of insight into the business."

In addition to the ad business, Frank worked in publishing and managed a bookstore for Scribner's. Though he enjoyed the work, Frank's first love was the theater and he always planned to return.

"In my mind I never really left the theater," Frank said. "I just took a break to learn more about people."

In his 50s, Frank returned to acting full time. His career carried him across media and around the world to stages in France and Japan, where he performed with the help of subtitles to non-English speaking audiences. He's been on television and in movies and he's played great men and cads, from Socrates to Satan.

Frank even wrote and directed his own play called "The Tie That Binds," which is based on the coal mining town where he grew up.

In 2008, the NYC Department for the Aging contacted Frank through his actor's union about a City agency requesting a volunteer with acting experience to assist with community outreach.

"Even a full-time actor is always looking for part-time opportunities," Frank said.

Not only has Frank's acting experience helped engage his audiences, but his insight into the lives and minds of seniors has helped the agency retool its senior-focused materials and networks.

"The key to presentations is making it personal rather than institutional," Frank said.

OEM's July 3rd Potluck

Can you name everything on the menu?