

PACIFIC ADA CENTER  
EMERGENCY MANAGEMENT AND PREPAREDNESS – INCLUSION OF PEOPLE WITH  
DISABILITIES WEBINAR SERIES  
FIRE PREPAREDNESS AND POST-DISASTER ACCESSIBILITY ISSUES IN THE HOME  
Thursday, September 8, 2016  
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>> Lewis Kraus: Welcome to the Emergency Management and Preparedness Inclusion of People with Disabilities Webinar Series. I'm Lewis Kraus from the Pacific ADA Center, your moderator for this series. This series of webinars is brought to you by the Pacific ADA Center as a collaborative effort between the ADA National Network and FEMA's Office of Disability Integration and Coordination. The ADA National Network is made up of 10 regional centers that are federally funded to provide training, technical assistance, and other information as needed on the Americans with Disabilities Act. You can reach your regional ADA Center by dialing 1-800-949-4232.

FEMA's ODIC covers the same 10 regions with regional disability integration specialists. More information about FEMA can be found at [www.fema.gov](http://www.fema.gov), then type ODIC into the FEMA website search.

This is the final year -- the final webinar of this year's series which has shared issues and promising practices in emergency management inclusive of people with disabilities and other with access and functional needs. The webinars provide an opportunity for emergency managers, people with disabilities and others with access and functional needs, first responders, planners, community organizations, and other community partners to exchange knowledge and information on promising practices in inclusive emergency preparedness and management for the whole community.

The series topics covered emergency preparedness and disaster response, recovery, and mitigation, as well as accessibility and reasonable accommodation issues under the Rehabilitation Act of 1973, the Americans with Disabilities Act of 1990, the ADA, and other relevant laws. The series alternates monthly between the ADA National Network Learning Sessions and FEMA Promising Practices. We encourage you to review the series website and familiarize yourself with the full array of sessions available in this year's series, [www.adapresentations.org/schedule.php](http://www.adapresentations.org/schedule.php). These monthly webinars occur on the second Thursday of the month at 2:30 p.m. Eastern, 1:30 p.m. Central, 12:30 p.m. Mountain, and 11:30 a.m. Pacific time. By being here you are on the list to receive notices for future webinars in this series. The notices go out two to three weeks before the next webinar and open that webinar to registration.

For those of you who are new to the webinar series and its software, we'll now review some of the features of the webinar platform before we begin the session today.

In this session, only the speakers will have audio. The audio for today's webinar is being broadcast through your computer. Make sure your speakers are turned on and your headphones are plugged in. You can adjust the sound by sliding the sound bar left or right on the Audio & Video panel.

If you're having sound quality problems, go through the audio wizard, which you can find by selecting the microphone icon on the Audio & Video panel. It's a microphone with a red gear symbol.

I am going to pause right now. We have lost our captioner. Hold on one second.

Christine, our captioner, are you still here?

>> CART: Yes, I am and I see my captions.

>> CART: Can you see me now?

>> Lewis Kraus: Let's try this again. Are you there?

>> CART: Are you seeing me now? I am seeing the captions and have been the whole time.

>> Lewis Kraus: Ok. Great. Let's continue on.

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You can customize your view by moving the Whiteboard where the presentation slides are shown. You can resize it smaller or larger by choosing the dropdown menu located above and to the left of the Whiteboard. And the default is "Fit Page." You can resize and reposition your chat window, your participant window, your caption window, and your Audio & Video panels by detaching and using the mouse to reposition or stretch/shrink. Each panel may be detached using the icon with the lines and the downward facing triangle in the upper right corner of each panel.

At the conclusion of today's presentation there will be opportunity for everyone to ask questions. You may submit your questions using the chat area within the webinar platform. The speakers and I will address them at the end of the session. So feel free to submit them as they come to your mind during the presentation. You can submit those questions by typing in the chat box as shown on your screen or pressing control m and entering text in the chat area. If you are listening by phone and are not logged into the webinar, you may ask your questions by e-mailing them to [adatech@adapacific.org](mailto:adatech@adapacific.org).

If you experience any technical difficulties during the webinar, you can send a private chat message to the host by double clicking Pacific ADA Center in that participant list. A tab with that title will appear in your chat panel. Type your comment in the text box, and enter. If you're using keyboards, can you click F6 and arrow up or down to locate Pacific ADA Center and select to send your message. You can also e-mail to that [adatech@adapacific.org](mailto:adatech@adapacific.org) address or you can call 1-510-285-5600.

Today's FEMA Promising Practice session is titled Fire Preparedness and Post-Disaster Accessibility Issues in the Home. This webinar will have two presentations. The first looks at fire preparedness for people with disabilities. And it's the Home Fire Safety Solutions for People with Disabilities program which installs smoke alarms, alert devices, and delivers home, fire safety educational messages that meet the needs of people with disabilities in Oklahoma. The key components of this successful program will be presented by the project managers.

The second presentation covers concerns for accessibility and Universal Design that complement the needs of population that age in place. Designed professionals can serve as educator and expert to encourage a resident to plan for accessibility for themselves for their visitors, and for any future inhabitants over their life and the life of the home. And the series will address all audiences that play a role in promoting accessibility through the lens of design from the client to the architect to the local jurisdiction.

So our first speakers today are Milissa Gofourth, a Program Manager of Oakland ABLE Tech and has been with the sponsored program housed at Oklahoma State University, Seretean Wellness Center since 1996. Milissa advocates and promotes public policy that will enable individuals with all

types of disabilities of all ages to access and acquire assistive technology. Milissa provides the assistive technology and disability-related materials for training and information dissemination for the "Fire Safety Solutions for Oklahomans with Disabilities" project.

Nancy Trench is recognized nationally as a leader in fire and life safety education.

Mrs. Trench is the Assistant Director for Research for Fire Protection Publications, the publisher of IFSTA training materials, at Oklahoma State University, where she has worked for more than 35 years. She is an expert in the design, implementation and evaluation of fire and life safety education programs, including programs for young children and people with disabilities. Mrs. Trench received the second annual Dr. Anne W. Phillips Award for Leadership in Fire Safety Education from The Home Safe Council in 2008. Nancy is active with Vision 20/20, National Strategies for Fire Loss Prevention.

Nancy and Milissa, I'm going to turn it over to you now.

>> Nancy Trench: Good afternoon. This is Nancy. Welcome to our webinar.

We are going to begin with this really great story about Marie. And Marie was a consumer who received smoke alarms and alert devices installed in her home. And just as the American Sign Language interpreter had left and the trained smoke alarm installer had left, Marie goes to her office to use a video relay and discuss with her husband all of the new equipment that's been installed. While she's speaking with him, she sees the strobe light flashing in the hallway and she says, "Oh heck, that stuff's already malfunctioning, the equipment is already broken." So she walks down the hall to the living room where the strobe light alarm is installed only to see thick, black smoke coming out of her kitchen. So just 30 minutes after Marie received this life-saving equipment it alerted her to a fire in her kitchen. Now, Marie says all that was hurt was her pride in having this fire. And you can see Marie tell her story here on this first slide.

I'd just like to say we got great news coverage in Tulsa, Oklahoma, where Marie tells her story. We got many, many applications for equipment from the Tulsa area. So this news coverage was great to help us market the program.

So when you think about Oklahoma, people think about disasters and that there are tornadoes but actually in Oklahoma more people die in home fires than in tornadoes. In fact, across our country more than 3,400 people die every year in fires, much more than all disasters combined. If you look at the data, about 14% of the fire deaths in the United States, physical disability is a factor in that death.

To give you some idea of what the risk is for people with disabilities, the fire death rate is between nine per million and 10 per million for the general population and for people with disabilities it's about 15 per million so it's quite a lot higher. So people with disabilities have an even greater risk for a home fire death.

>> Milissa Gofourth: This is Milissa. I want to talk to you about the Oklahoma program that we are doing. We are currently funded through FEMA, through the Assistance to Firefighter Grant, the Fire Protection and Safety Grant. That funds our program and purchases our equipment. We are now able to operate this program state wide by installing smoke alarms and specialized alert devices to Oklahomans with disabilities. That statewideness took us several years to grow. We really needed to have the infrastructure in place and the mechanism to be able to get to all corners of Oklahoma. But we're really proud that now we're able to meet everybody's needs statewide.

Our program does not have any income requirement. We never ask anybody their income. You do not have to have low income to be eligible. The eligibility is based on being deaf or hard of hearing, low vision or blind, or use a mobility device to assist you. So income doesn't have anything to do with it. We also don't charge the consumers any price or fee to have the smoke alarms installed in their home.

Currently the average home receives almost \$400 worth of equipment per household. Nancy is going to talk about the equipment we install later on so I will leave that to her but we do meet national codes and several smoke alarms are always installed in each home along with the specialized alert devices.

We use paid, trained installers. The Oklahoma Assistive Technology Foundation, a grantees awardee, is able to contract with individuals across the state to pay them to install the equipment. That's how we meet our statewideness.

And the program does not install in licensed facilities. We had to make that decision really early on. We don't want to install smoke alarms in individualized rooms like in nursing homes and other places because so many of those are licensed under a Department of Health and under state and local laws so we did not want to contradict any of that. The other is we don't install in college dormitories. Again, the equipment needs to be -- has to sync with the equipment that's already existing. So if students need specialized equipment, we certainly work with them and the student disability services to ensure that they know what kind of equipment needs to be provided to those students.

The program also always provides contact information when we leave that home for individuals. If the equipment should malfunction, they can contact us. And, in fact, the equipment does malfunction and we get several calls. And sometimes a lot of our -- what we call trouble shoot calls can be taken care of through a telephone conversation with an individual. However, if equipment is malfunctioning and not working properly, we have also gone back out to that home and taken the malfunctioning equipment and replaced it with new equipment. So that's pretty typical of how we operate and trouble shoot.

In serving people with disabilities, we first and most importantly always want to engage people with disabilities. We needed to find out what did they want, what did they already know about home fires, and how to be safe. And then not only what they want to know but how do they want to get that information.

It often takes time to develop a true partnership and trustworthiness. I think all of you probably sat around tables and some of you would say, I'll do this, and then nothing happens. So in the development of these partnerships, unique people like fire protection publications and Oklahoma ABLE Tech and Oklahoma Assistive Technology Foundation, we had to build the trustworthiness amongst all Oklahomans with disabilities to be able to, you know, be legitimate, be trustworthy, and to know that we could do what we told them we would do.

One of the things that's helped us along the way in reaching individuals that are deaf across the state, we have always paid ASL, American Sign Language, interpreters to go along with the trained installers when that person requested an interpreter. So we've paid those interpreters and they have provided all the communications between the paid installer and the homeowner/resident/consumer. So those ASL interpreters, if they were working with install areas cross the state, they began to help us get the word out to the population that they serve because they recognize the importance of having the appropriate equipment in the home. So that's been a great help to us.

The other area that we use ABLE Tech for is that all of our materials are in alternative formats. We even have all of the fire safety messages in Braille. We provide an audio file if someone requests it, large print. We also had created a DVD in ASL because that population said the best way to get these messages across to us is for a DVD on ASL. So we created that. We also have a fully accessible website and many of our materials are in html. So we ask for what type of format do you want. We ask that question on our application. And as I mentioned, we always provide ASL interpreters.

Our partnership's I think what has made this program so successful -- and we began in 2002, basically, when the FEMA folks had written a white paper about solutions to home fire deaths. They recognized that people with disabilities were at higher risk, that they posed a much higher risk in home fire deaths. The other risk was that not only were they at greater risk but information and materials were not designed with people in with disabilities in mind. So they couldn't even access, many of them wouldn't access, what information was out there.

So we needed both partnerships, the partnership of the fire safety technical partners to be able to talk about where and how you install smoke alarms and why. They, on the other hand, needed people with advocates and organizations with disabilities to partner with them because they don't know

how to communicate with that population or how to access them effectively or get the word out to that population. So it's been a great partnership.

Fire protection publications was first funded -- our first FEMA grant was funded in May 2003. We have worked diligently, although we have not received FEMA funding non-stop through that time, however we have worked diligently to keep the program going at some level and always have smoke alarms ready continue to stall. So we've been active now for a long time.

In the fire technical partners, you guys won't have a fire protection publications across campus but there's also you ought to let the local fire department know what your interest is and what would like to accomplish. The level of engagement of a local fire department will vary from community to community.

Another person that you want to know about what's going on is the state fire marshal. They can be very helpful about risk management and understanding how to get the word out to people.

Another technical partner could be your safe fire training services. They are an excellent partnership that know fire departments across the state, train firefighters and emergency personnel across your state. They can be a great technical partner for you.

For people in the fire industry, there's a lot of disability advocates and organizations that you could connect with. For example, ABLE Tech is the Assistive Technology Act program in our state. Well, there is an assistive technology program in every state, so you can contact them. Every state has a rehabilitation agency within various state agencies. And you can contact them. They have usually local, regional, and state offices.

Centers for Independent Living are a great resource for people with disability advocacy and organizations. They really are connected to the people with disabilities directly and can help you link to that population. And, of course, there's all kinds of community-based organizations to partner with also.

In building a partnership that's successful, you need to research funding sources and, of course, know those requirements. As I mentioned, we are funded through FEMA but there are other federal and state agencies that may be able to assist with funding a smoke alarm or home fire safety program in your area. There are lots of local program that you can connect with, local foundations.

And then insurance providers, homeowners insurance companies, are very interested in and motivated to ensure that people that they are insuring have smoke alarms and appropriate smoke alarms. So they are a great connection possibly.

And, of course, the Red Cross. They are often doing a lot of home fire safety work throughout the nation. So your local Red Cross would be a great one to connect up with or your state office.

In building that partnership and trying to find funding, of course you have to create a compelling story. And why is it that people with disabilities need appropriate equipment? And why do, you know, regular smoke alarms not meet the needs of people that are deaf or hard of hearing, for example? So the more you can discuss the risk of people with disabilities and the risk of fire death in your area, the stronger your story will be.

And then lastly, I kind of laughingly put "Plan the doable." I often plan the undoable and then we're scurrying around at the end trying to get everything accomplished. At times it's really made us reach way beyond what we thought was possible originally so it's been exciting. Oftentimes it can get you stuck in the mud and you'll be in trouble with your funding resource, and your partners. So start with small steps and make things doable that you think can get accomplished.

Of course, lastly, you always want to involve people with disabilities. The nothing about us without us is truly our mantra about trying to get people involved. Our first assignment was to create home fire safety messages for people with disabilities. We all, in our group, our partnership, all assumed we would write one set of messages that would cover people with disabilities and that we would, you know, take care of it all. Well, when we brought focus groups together of people that were deaf and hard of hearing, with a hearing loss, and individuals that were blind or low vision, and those that had mobility, and even people with cognitive and learning skills, they all told us time and again, "A blanket set of messages do not work for us." The people that have mobility challenges did not care that we did a DVD in ASL. Their challenges to escape from a home fire are significantly different than an

individual that's blind or has low vision. So we continually kind of had to step back and literally start over. We said, ok, we can't create just one set of messages that work for everybody. We modified our home safety messages and created literally four different books.

In addition to the four different sets of books and our fire messages, we created a DVD in ASL. It's the coolest DVD. You can download that off our website which I'll talk about later. But it is voiced with a person that's interpreting, and they're having conversations with each other, and then it's also close captioned. So it really does meet the needs of everyone. It's a cool video.

Lastly, you've got to have an effective way to market whatever you're doing. We often don't have a lot of money for marketing around here so news releases have been effective at times. They're absolutely free, for one thing. So you can kind of, you know, use them at different times, under different circumstances. Not only did we use Marie, you know, had her on the Channel 6 story and on television, but we also were then able to tell her story and do it as a news release. Television and radio interviews are a great resource for marketing. Websites, we use our website. Social media, on the ABLE Tech Facebook page I post something about home fire safety messages or home fire safety information weekly, at least once a week.

The other information we go to is we participate in all kinds of events. Know what kind of events in your local area would work for you. We've done silent dinners, health fairs, conferences and presentations all the time. And we always take our flyer and our application. It's really important to be able to have people see how simple it is to apply.

And lastly, of course, use satisfied consumers to get the word out. They're the most effective. If they know somebody down the street that use as a hearing aid, they can take the application to them. So it's been really helpful for us to also use satisfied consumers.

Nancy?

>> Nancy Trench: So we begin our presentation saying that home fire deaths are big risks and the number one strategy to prevent home fire deaths are working smoke alarms. So our project focused on installing that equipment in people's homes who had disabilities. Traditional smoke alarm installation projects go door-to-door in a community to install. That does not work serving people with disabilities because they are located throughout the population in your community. So we created a program that's based on an application. That application gets us contact information. We do ask for proof of a disability. And then we use that application and contact that consumer and set an appointment for the installation. Once again, our program is different than many because we do pay installers and many projects use volunteers.

Now, the training includes two different courses. One is, What Do Firefighters, the fire service, and smoke alarm installers need to know about serving people with disabilities? We cover things like social etiquette, using People First Language; and How Do you Work with an American Sign Language Interpreter and What Do You Need to Know about Service Animals? That course is four hours. All of that is available to you online. The PowerPoints, the teaching outline, the pre and post tests, all of the handout materials are available. Then the second part of the training is how to install smoke alarms. And the right alarm located in the right location makes a big difference. And that's what we teach.

We also teach about the bedside alert devices, how they are set up and how you sync them with the smoke alarm equipment. And our installers don't just install equipment. They are also responsible for the Home Fire Safety Education materials.

If I were to give you the best advice today on this webinar, it is this slide, slide No. 12. I'm convinced that why the Oklahoma program continues to receive funding is we have an effective evaluation program. We do outcome evaluation where we contact every consumer with a survey. We have a very large percentage about a 69% return rate on those surveys. Once again, we ask people: Do you want us to call you on the phone? Do you want to get it in the mail? Do you want it e-mailed? What format do you want that survey in? We ask about: Have they changed any fire safety behavior? Are they happy with the equipment and the service we provided?

And the reason we know that our project has saved -- has had 18 saves where the equipment worked and alerted people to fires is because of the survey. We would not know that unless we contacted the consumer after the installation.

We also have an ongoing process evaluation. We meet regularly with our partners. We look at our time lines. We look at our inventory. We look at our messages and what we need to change. And we continue to modify the programs to meet the needs of the people we need to serve.

So when federal programs - many times, the funding is connected to what kind of evaluation component do you have. I think our evaluation program has been critical to us not only receiving additional funding but also to make our program meet the needs of people with disability.

Now, I want to talk just a bit about best practices. What are best practices about installing residential smoke alarms?

First of all, it is not effective just to give away the equipment. In fact, to receive the assistance to Firefighter Grant funding, they require that you install the equipment. If you don't, you have to explain to them why.

Also, one smoke alarm is no longer enough. Fire has changed. It is fast. It is really fast. When I began in this business installing smoke alarms back in the 1970's, when the smoke alarm alerted you to a fire, you had 12 minutes to escape your home. Today it is three minutes or less. So when that smoke alarm goes off, you've got to get out and get out fast. And you need more smoke alarms so that you get earlier alerts. So our project installs according to the National Fire Alarm Code, a smoke alarm in every bedroom, outside each sleeping area, and on every level of the home.

We also follow national best practices in that we install both types of smoke alarms in every home. So every home receives photo electric and ionization alarms.

One of the things we've learned over the years about smoke alarms is a lot of people have them but guess what. They don't work. They've taken the battery out. And the reason that people disarm their smoke alarms, the reason they take out the battery, the reason they pull them off the wall, is because of nuisance alarms. And that's because we did not do our job right. We put the wrong alarm in the wrong location.

So the key thing is, when an -- an ionization smoke alarm cannot be within 10 feet of a kitchen. So our project protocols are that we install ionization alarms in hallways and we put photo -- I'm sorry, I said that wrong. We put the photoelectric alarms in the hallways and the ionization alarms in the bedrooms.

The other thing that's changed in the world of smoke alarms for residential homes is smoke alarms don't last forever. They are only fully functional for 10 years. And that is very clear on the packaging. Our installers put the date the alarm is installed where people can clearly see it so they know when the alarms need to be replaced.

Now, smoke alarms work 24 hours a day, seven days a week. But the fires that kill people happen at night. So as you design your installation protocols, remember, you want the smoke alarm to intercept the smoke before it reaches people who are sleeping. And our installers ask people, where do you sleep? They may not sleep in their bedroom. Many people sleep in a recliner in a living room. We had put the alert devices, including the bed shakers, in recliners because that's where people sleep.

Also, because the smoke alarm is to wake you up, we know that standard smoke alarms don't wake up everyone and that a low frequency sound is better. And also the very best way to wake any of us up, based on science, is a bed shaker. So we install bedside alert devices for our consumers. These devices are not smoke alarms. They are actually listening devices. The code calls them an appliance. And they list them for the alarm sound, high three beeps and a pause, three beeps and a pause to activate. And then the devices make a loud low frequency sound and shake the bed. As you know, as people's hearing decreases, we lose our hearing at higher frequency levels first. So this low frequency sound is best for people with hearing loss. And like I say, it shakes the bed.

The other thing you should be aware is there are currently only two devices on the market that are listed, and that means they will have a UL or an ETL label on them. They should be listed to UL

1971. It is a market for consumers to be aware. There are many devices on the market. And sometimes the advertising is a little misleading and they may claim that they meet a standard but they don't say that they're listed. So you should ask. And you can also go to the UL or the ETL website and find their certificate to prove that they are listed.

For people who are deaf and for people who wear cochlear implants and then remove them at night, we also install this smoke alarm. It is a photoelectric alarm with 177 candela strobes. This is the alarm that was installed in Marie's living room. Marie doesn't need this strobe light to wake her up. Science says strobe lights are not effective in waking people up if they hear or if they don't hear but the strobe light is that visual notification for waking hours. And as you heard from the story with Marie, this alarm was in her living room but she could see that strobe light reflecting down her hallway.

This device plugs into an electrical outlet and it has a backup battery. That backup battery only operates the smoke alarm. It does not operate the strobe. So it is not an ideal device but the only thing on the market at this time.

We want our installers, and we train them, to teach the homeowner -- the home occupant, to teach the consumer how to operate and test the equipment and how it works. We also know because fire is so fast that the alarm waking you up is the first step but it's critical that you know how to get out, what you'll do. We know that children do not wake up to the sound of smoke alarms. So who is it that's going to wake up and help the kids? Who is it in your home that will help someone who might move slower that needs assistance? Who will help someone with their mobility device?

So our installers help people plan that family escape. We find through some other research that talking about a family fire drill is a good language to use because people understand what a fire drill is.

Milissa, I'm turning it over to you.

>> Milissa Gofourth: Ok. To wrap it up, I wanted to let people know that we have worked with other state programs to kind of replicate some of the things we do. And not everybody can do everything that we do. Ours is based on how much funding we receive and how we felt like we could meet the needs of most Oklahomans.

We in Oklahoma do use an application process. Individuals can apply online or through paper -- they can call us on the phone, whatever.

We provide home fire safety materials and leave those in the home once we've installed the equipment.

We have provided two different training programs curriculums on our website. The one along with all the fire safety message that we leave in the home.

We conduct a follow-up survey of 100% of the homes that we've installed. Our follow-up rate, I think I listened to last week, was at about 49% to 51% we receive return on the survey.

We've also created two different DVDs. We have "Home Fire Safety for You" presented in American Sign Language, and "Meet Natelea" who did a retrofit of her home for a fire sprinkler. And she's done a DVD that we have on our website. In addition, you can find Marie's video on Channel 6 news report on our website. You can go to that web link right there, [ok.gov/abletech/fire\\_safety/index.html](http://ok.gov/abletech/fire_safety/index.html).

We have worked with Kansas. They have a smoke alarm distribution program for individuals that are deaf, and then also Mississippi. Mississippi has used a different kind of program. They didn't use all of our model but we were able to join resources to create information for both sets of citizens. So it was really exciting to collaborate with Mississippi.

>> [Multi-voice overlap]

>> Nancy Trench: This is Nancy. I just want to reinforce that training those installers is key. And all of the training materials that have been created are on this website. So for the smoke alarm installer and for working with people with disabilities you can get the PowerPoint, the lesson outlines, the pre and post tests, all of the handouts are available for you.

And I think our next slide is -- and if you have questions about any of that, you can contact Milissa or I.

Thanks, Milissa.

>> Lewis Kraus: All right. Nancy and Milissa, thank you so much. That was a great presentation.

I want to encourage everyone in the audience, if you had any questions that you wanted Nancy or Milissa to follow up on, go ahead and write those into the chat window. And we will get to those at the end of the session here. Also, I want to reiterate that the Channel 6 news item is on their website. You can also go directly to it at that address there that I've put back on the screen. That's where we started. And that was the story that they were telling you at the beginning. So we'll put that address -- that address is actually in the slide presentation. You can get the slide presentation even now at the [www.adapresentations.org/schedule.php](http://www.adapresentations.org/schedule.php) website and you'll have that address to go and see that, if you want to see the interview live.

All right. Go ahead and write in your questions and we'll move on now.

Our next speaker is Brian Baer. Brian is a licensed architect with 27 years of experience implementing sustainable community-aided design solutions for educational, cultural, civic and non-governmental agency projects across the United States. Mr. Baer is a licensed architect in several states and is a LEED accredited professional awarded by the U.S. Green Building Council and certified by the National Council of Architectural Registration Boards. Before forming The Elevated Studio, Inc. and serving as its Executive Director, Mr. Baer was the Regional Program Manager of the New York office of Architecture for Humanity, LLC, an international charity. In that capacity, Mr. Baer did disaster relief and preparedness work and advocacy including managing the organization's New York City office for the regional response to Hurricane Sandy reconstruction throughout the metropolitan New York City region. Mr. Baer has practiced as an architect in Washington, D.C., Seattle, Boston, and New York.

And, Brian, I am going to turn it over to you.

>> Brian Baer: Thank you, Lewis. I appreciate it.

Good afternoon, everybody. I hope everyone's well today. Thank you for the introduction, Lewis. It was humbling.

So I am a licensed architect, as Lewis said. Our practice is geared towards helping those communities and individual property owners recover from the wraths that Sandy left upon the region. The first slide shows our general region in red, which is all of Long Island, the five boroughs of New York City, Westchester County, and the East Coast of New Jersey from Bergen County all the way down to the bottom of Ocean County.

I live in Dutchess County, which is the blue dot at the top of that image, which is about an hour and a half north of New York City and about three hours away from our most eastern client, which is at the South Fork, near Montauk.

I'm going to talk today about the opportunities that we are seeing here post Sandy in assisting those homeowners with either a current functional need or a future functional need in redeveloping their predominantly single family residence but in some cases it's a multi-family or in fewer cases it's a small business. Using CDBG/DR funding, that's Community Development Block Grant for Disaster Recovery funding encumbered by Congress.

The second slide so, What is our call to action based on this? We need to promote the principles of Universal Design during the first three to four months of the disaster's relief phase not into the year three or four of recovery.

It is important to understand that here in the northeast these principles of Universal Design that I'll describe a little later in the presentation really can be implemented across the country if not necessarily across the world.

As a design professional, we always see a beautiful place, whether that beautiful place starts with a blank piece of paper and a pen in our hand or in the case of this particular slide it's when a 60-foot oak tree falls on top of a house and leaves it in splinters. At the end of the day we want to make sure that the residents or the structure that we are providing for the owner or the user or the occupant or visitor is resilient, sustainable, and it is safe and sanitary and secure.

Because we are experiencing large movements of climate change in the last 10 to 15 years and the majority of those events here on the East Coast have been due to a hurricane, or tropical

cyclone, I should say whether that is due to a wind storm or rain event or a surge event like Sandy was, it's important to design our structures really for all hazards. It's not just for one particular one. It's really for all of them.

So the image on the left is sort of a blow-up of Sandy as she was rolling up the coast in 2012 and then the image on the right is just a global path showing all of the hurricanes with the location of their eye over the last 170 years.

Sandy was a beast. She was physically the largest storm on record, 2,000 miles in diameter. Too many lives were lost. Too many people were without power. We experienced a very large storm surge throughout the region. It averaged in size from three feet up to 17 feet with an average in Long Beach Island of 14 feet. Too much money was spent in losses. We're still working through that nightmare with the three programs serving those occupants, building back the city, New Jersey, New York Rising, throughout the rest of New York State.

It's only getting worse. Right? It doesn't matter if you're Caucasian, African American, Latino, short, tall, fat, thin. Mother nature has a really great track record against us humans. We have a .000 batting average. Over the years since we started recording when federal disaster declaration started in 1953, the line has only been going up. 2011 was probably the worst year that we can all recall when there were close to 250 federally declared disasters throughout our country.

So what are we facing here in the metropolitan New York City region? Well, it's really three things. Two of them are tangible. And one of them isn't. We live in a very aged built environment. Many of our properties were built before flood control construction was in the building codes. So we have a very old, aged built environment. We have an older population that is aging in place, meaning that the house that they are currently living in they've been living in for many, many decades many have been born there. And then because we are New Yorkers, we have that intangible thing meaning we want what we want. And depending on who you ask, what neighborhood, what street, what house, it varies.

So where is our risk? Well, our risk is, again -- I said we have an aged built environment. 84% of all of the properties that were damaged by Hurricane Sandy were built before 1983, which is when flood control construction was put into the New York City Building Code. That number is slightly higher out on Long Island, since many of the homes were built before 1983.

Interestingly enough, 94% of all the red tag buildings within the five boroughs were built before 1983 and 98%, almost 100%, of all the homes destroyed were built before 1983.

The images surrounding the statistics are two fire-destroyed buildings in Breezy Point, when the surge blew out a transformer in that tightly knit community. It caused a catastrophic fire of over 110 homes because they were so closely built together. They went up very quickly, unfortunately.

And the image on the lower right-hand corner of the slide is that of a house on a canal in Seaford, New York, out on Long Island. They had done some minor insulation retrofits to the floor joists but did not check the structural integrity of the house foundation. So when the six-foot surge came and met that structure, it lifted it up three feet off of its foundation and then plopped it right back down like Dorothy in Oz. The occupant of that home at the time was living next door or sheltered next door to his daughter's house where they watched the house rise and fall from their second floor window.

Our risk as a region? Well, the Metro New York region is number one in population. We are not the greatest risk Metro-wide. That's Miami. They get number one. We get number two. But we do have a population that is 60 years or older at about 14%. In a few years it's going to go up to 15%. And in another 13, 14 years, that's almost going to be pushing 20%. So you couple the aging population, the aging in place population, as well as the aged building track and we've got some issues that we have to deal with. People are living longer, healthier, but it doesn't take much to change those parameters.

So that intangible that I was talking about of the New Yorker thing, I want what I want, well, when we interviewed our clientele or those folks that we were helping during the relief and early stages of recovery, we asked them, well, what do you want. What do you want to achieve with your recovery?

And most of them just said, you know what, I just want my life back. I want to get back into my house. I want to be safe. I want to be secure. I want my family to be safe and secure. And then every once in a while someone will say, well, I want a garage or more space or a basement because they never had one before and they want one. Many of the people that we met throughout the region want some functional need modification whether it's grab bars in their bathroom or a vertical lift or a ramp due to some functional need. We've had those conversations as well.

As many of us probably know, the Americans with Disabilities Act really doesn't apply too much to single family residences. While it's a civil rights law and there are building apartments around the country who have adopted the ADA as their accessibility guideline, really when we're talking about single family homes, there are no significant guidelines.

So when do people really think about it on a residential level? Well, when there's an issue. So they are thinking about it in a reactive way rather than a proactive way. Or when someone tells you to think about it. Yeah, I went to the doctor. The doctor said I have X things going on with me and now I need to start thinking about making my home adaptable. And then once I'm in there, how do I go about doing that? How do I build that -- live in my house? How do I use the bathroom? How do I cook? How do I clean? How do I move around my living room? But before that how do I actually get to that front door? My house is right now on a grade where I have to take one step up but if I'm going to be in a wheelchair or have a walker, I can't use that step. So I'm going to need to get some type of element, whether that element is a ramp or lift or stair climber to get me into my home.

So these are just some of the questions that people are asking of us as design professionals, help. How do we get there?

There's a lot of education that we do as design professionals because the ADA has been on the books for most of my career. I grew up with it. There are architects older than I and younger than I who have come into the play as well. But when I came out of school in the mid-'80s, the ADA was fresh on the books. So a lot of work that I've done around the country has really been geared towards people having that functional accommodation to everybody.

On the residential side, though, so how do we educate them? What do they understand about themselves? What do they understand about how to move about a home? What does it mean when they are now in a wheelchair or have some other need and they can't access their bedroom because the door is too narrow? How did they go about making that transition?

It's really up to us as design professionals. Because while the ADA, again is a civil rights law, it is a law and it is on the books in many jurisdictions. And the Building Code is our rules and regulations. It's how we design our homes, our schools, our churches, our office buildings. It's all of the structures that come across our table. And a single family home is no different. So really it should be up to us design professionals to educate our clients on the importance of building universally, not just for someone who may have a need but really for everybody.

We don't want an image of relativity. Right? It's not the stairs that Escher did. Nor is it the ceremonial stair and ramp assembly that is at the base elevation, base front, excuse me, of the museum in Paris France, the lower left image. Beautiful, both, in their own right and their own way but this is not the solution that we really want to be talking about when we're dealing with a single family home, especially a single family home that has been damaged or destroyed by an event.

It takes a lot of thought. It takes a lot of understanding what the client's needs are. It takes a lot of understanding of how a property owner uses their space. We need to include the jurisdiction and the community services that the owner may be using in the future, whether that's like a Meals on Wheels facility or some other accessible program that comes into the home. How do we think about it?

Or even if you consider your elderly parents. One of my parents has a functional need. It makes it very difficult for them to climb up half a flight of stairs to our living room but we make it work. We do a lot of guidance, a lot of helping. But that's a sort of as-needed basis. There is going to be a time when I am going to need that functional need and living in the house that I am, I know I'm not going to be here -- we're not going to be in this house unless we make a significant investment to

making that adjustment. So there's a lot of question that we have to ask. And there's a lot of solution that we need to seek.

In the past, pre-Sandy, we're talking about a large number of properties that are now a part of a flood zone and they are not resilient. So those are the images on the top of the slide. Now that we're into recovery and starting to think about how are we going to make our properties and our people safer, we're sort of getting this saw tooth effect. So not everything has been planned. Some things have. But you get that saw tooth effect where one house may not be elevated and then another house is. But ultimately where we want to get to is the bottom imagery which is all of the homes are resilient. All of the homes are safe from storms or at least surges and our residents can get into those homes very easily.

So what should we do when we're talking about this? Well, we need to have a very good understanding of the census. How many people within the community or on the street or on the block have some form of functional need? It sort of comes into play with while the government can provide some of that census information, it's also the neighbors helping neighbors come into play.

We need to review the Building Codes and really start thinking about how are we going to help mitigate some of these issues for future homes that may require a functional need or not even put the question out there of whether or not they meet the functional need, just design it universally so that every home from this point forward is built so that anybody can use it or at least make it adaptable so that any home can use it.

We need to work with the constituencies just not the jurisdictions but the non-governmental agencies or organizations.

And we need to talk with FEMA and HUD when there is a disaster. And we talk about the program in a box that gets rolled out from disaster to disaster and people pick and choose. We want to make sure that that information, that Universal Design, is at the forefront for when communities start thinking about their relief and their recovery programs, that Universal Design is at the forefront.

At the end of the day, we all work for the homeowner whether it's the jurisdiction, whether it's the construction professional, whether it's the design professional. All of us need to collaborate together to make sure that the homeowner is getting what they need. Or if they don't need it right now, that we talk with them and educate them in such a manner so that they understand that five years down the road, 10 years down the road, 15 years down the road that they can make these changes, these adaptations very, very easily with zero dollars or with limited dollars.

And -- so the policy that gets impressed upon us through the various jurisdictions whether it's the federal jurisdiction or the state or the county or the city, it needs to be cyclical. We need it -- to read it and understand it, talk with the homeowners, talk with the design professionals, understand how it integrates with the Building Code, and constantly modify it as needed.

There are some myths when it comes to Universal Design. People think that, well, I'm designing these structures for everybody. Isn't that going to be expensive? Is it really only for the mobility impaired? And, man, Universal Design, I do not want to see a big, ugly ramp or a big, ugly vertical wheelchair lift at the front of my door.

Well, all of those things really can't be farther from the truth because Universal Design does not mean that it's going to be more expensive. It costs no more effort to put in a 36-inch door at the start of construction than it does a 32-inch door. You're paying pennies on the dollar for that increase in material size but it equates to zero to 3% of the overall construction costs which when we're talking about hundreds of thousands of dollars, it's negligible.

Our job as architects and engineers is to make things beautiful. So we come up with some really creative ideas on how to make that vertical wheelchair lift beautiful so that it's just not a glass tube with some beige columns around it; that it looks and feels as though it's part of the architecture of the house. It is designing not just the spaces but also products that can be used by everybody and whether that product is an automobile or a house or [Inaudible]. Universal Design can and should be implemented for everything that we use.

There are seven tenets to Universal Design: the first is equitable use, meaning that it is useful and marketable to all people with diverse abilities; it's flexible to use, meaning that a wide range of individuals with preferences and abilities can use it; it's simple and intuitive, meaning you don't need to be a rocket scientist and have an advanced Ph.D. degree to use the product and the space; there's perceptible information, meaning the instructions are easy to follow; there is very little tolerance for error, meaning that it minimizes the hazards or the adverse consequences; there is low physical effort to using something that has been designed universally; and the size and the space for the approach and use is appropriate for the element that we're talking about. So these seven tenets are really what drives our design for all of our clients regardless of their abilities.

It's important because we want to talk about sustainability. I like to use the word which I believe has a numerical count of 54 points called sustained affordability. And a broad definition of that, if it's not affordable, it's not sustainable and if it's not sustainable, it's not affordable.

We want to make sure that whatever we do as architects meets the social, the economic, and the environmental qualities that all of our clients are looking for, that it crosses over political boundaries and natural boundaries and economic and social boundaries so that everybody has a great opportunity to use the space whether it's a single family home or it's a school or it's a community center.

We also like to use -- because we're a nonprofit, we like to use other acronyms. All of this is based on SMART design. So it's our strategy for all of our projects is that it has to be sustainable and has been mitigated, the A is adaptable or adapted. It's resilient. But at the end of the day because we are here in the northeast and we have a very long lifespan with a lot of our buildings, our designs are timeless.

For every dollar spent that we're doing this, it saves about \$7 in economic losses in the prevention -- I'm sorry it prevents \$7 of loss in economic loss by taking on Universal Design, by taking on resilience. So it's an important factor to come into play. We tell our clients, look, the amount of money that you're spending now, whether it's out of your own pocket or using a CBGDR funding, it's going to save you that much more in the long run and whether that long run is a flood or building insurance or your economic loss or what have you, let's get it done, let's get it done now.

We also like to challenge ourselves and challenge our compadres in architecture to design like we give a damn, not just to land anything on a parcel of land. We really did give some good, serious thought as to how we create our buildings in dealing with Universal Design and the impacts that climate change can have on them.

I wanted to get into a couple of two quick case studies. Both homes were damaged by Hurricane Sandy. This first one is in Long Beach. It is a two-story structure. The lower level is a bedroom, living area, and mechanics. And the upper level is where the homeowner lives, predominantly, who does have a functional need. She uses a wheelchair. And the front door is at the top left of the slide. It's red. So it is above the street level, about eight feet.

What my client has to do to get into her home is climb up a 72-foot-long ramp. It wraps around two sides of the house. The image on the left is the lower portion of the ramp. There's an intermediate door, a side door that goes to the upper level, as well as to the lower level. And then there is a 90-degree turn. And then the ramp continues up to the entrance deck for the client.

You can see here in the plan, that dashed line on the right and the top of the page is the ramp. And that includes the landings, along with the entrance deck sort of in the middle of the page. All of that is coming down because we are elevating this home about eight and a half feet up. The elevation showing that northerly elevation on the top of the page and then the westerly elevation on the bottom of the page. The ramp is in a dashed line.

So what we are doing because of the flood zone that she's in, we have to raise the house up about eight feet. We are providing an accessible parking pad underneath the house because the town requires a certain amount of off street parking. We are also providing an accessible pathway from the parking area to the vertical lift, which is being funded through the New York Rising program. And that vertical lift is transversing up to her main living floor, which will be the new first floor. But it also continues up to the second floor where her sister and her family live.

We are redesigning this entire level to accommodate the client's needs. We are providing a kitchenette, providing a much larger bathroom facility. The one that's there now is a typical single family three-piece bathroom that is five feet wide by seven feet deep, which is not very accessible. So this new bathroom is about nine feet by 11 feet. Her bedroom is about 12 feet by 15 feet. So there's a much greater functional need that we're providing to the homeowner. And then the upper level shows the land of stairs because we need to egress safely out of the home from the upper level we're adding a few extra stair runs.

The next slide, slide -- I'm sorry, yeah, slide 65, shows a rendering of the street side, of the front of the house, with the new deck, the new entry doors and entry stairs. And then turning the building around is a view of the rear of the building with a raised deck for the family living above.

The next case study is for a single woman who is about 60 years old living in Babylon, New York, the center of Long Island. Her home saw about three feet of water on first floor. We are going to be elevating her home. While she has no functional need currently, she was diagnosed with a degenerative bone condition which in three to four years from now will likely either put her to use a walker or put her in a wheelchair. So we are providing an accommodation now during the design phase and during the construction phase to provide access for a future vertical wheelchair lift at the back of the building which is where she wanted.

The next slide, slide 68 is a shot of the length of the house looking towards the west.

The existing floor plan, the street side is on the left-hand side of the page and the outside is on the right-hand side of the page. You can see that it is a single story bungalow-style floor plan, a pair of porches, a book-end, floor plan with the living room, a pair of bedrooms, a full bath, and kitchen.

We do have proposed plans showing on the next slide which has two entrance stairs. And then on the rear stair we are going to be providing the accessible lift on to the platform so that the homeowner can move very easily from the driveway to the porch and then into the house. And all of that is on the same level.

We've also provided her with some design options to revise the bathroom or expand the bathroom so that when time comes, that it needs to be made functional for her, we can very easily do so.

We're planning this with roughing in plumbing, roughing in electrical, for both of these features. The kitchen we've already provided her with some designs to lower the countertop when that time comes. And she's very happy with that. And we're going to be starting construction for both of these projects within the next three weeks.

Just a shot of the front of the house in Babylon, showing the new stair. The lighter gray area is the amount of height that we are elevating the home, which is about a total of four and a half feet. And then the rear of the home, showing the new stair and then the cutout just to the left of the stair for where the future vertical wheelchair lift is going to be.

In closing, we try to make sure that all of our projects and all of our clients really are provided with the most opportune features that they can afford that are beautiful that are resilient that are sustainable to them so that they can continue living in their home or use their school or use their building from now and maybe generations to come.

It's been an pleasure talking with all of you.

Lewis, I will turn it back over to you to moderate any --

>> Lewis Kraus: Great are. Thanks so much, Brian.

So we only have a very short couple of minutes left so let's do a couple of questions very quickly.

For Nancy and Milissa, as Red Cross volunteers installing alarms, are we indemnified from liability?

>> Nancy Trench: This is Nancy. I think the Red Cross has an answer for that. You can find it online. They have an extensive smoke alarm installation project.

I think the general answer is yes but it's kind of a good Samaritan clause. And I know that there is some work going on at the national level to have model legislation that says that more clearly.

I think the protection people need, if you're concerned about your liability, is to make sure you have training and that you can document that training, that you know where to install those alarms, which alarms, in the right place.

>> Lewis Kraus: And one last question for you guys. What would you say is the general cost for start-up of a program like yours and the maintenance of a program like yours?

>> Milissa Gofourth: This is Milissa. It will vary. We use part-time professionals. I only have a portion of my salary is towards this grant. So the best way to start is utilizing a percentage of somebody's time that is willing and able to step back and kind of do some of the day-to-day work.

You'll have to have at least some money for the smoke alarms themselves. And they can vary in price anywhere from, you know, \$10 to \$25 each. We purchased alarms that have a 10-year lithium battery to get the longest protection possible.

The [Indiscernible], depending on your volume purchasing, you can get different quotes. So definitely get quotes on the smoke alarm equipment depending on your volume. But those are going to be your two biggest outlays.

If you want to use volunteers to -- you know, train volunteers to do the smoke alarm installations, that may be again, an effective -- cost-effective method to get started in small locations and small areas.

>> Lewis Kraus: Great. Ok.

And one last question with the time that we have. Brian, in like a minute or so, is there a role for disability advocates to help with the push to -- for designers to aim for Universal Design?

>> Brian Baer: Yeah, there is. I think those organizations that can team with the local chapter of the American Institute of Architects, which is the club that most of us belong to, I think is a great way to tag team together to make sure that Universal Design is at the forefront for that particular region.

>> Lewis Kraus: Great. Ok.

Sorry about that, everyone. We realize that many of you may still have questions for our speakers. We apologize if you did not get a chance to ask your questions. You can contact them at their contact information or you can contact your regional ADA Center at 1-800-949-4232.

I want to remind everyone you're going to receive an e-mail with a link to an online session evaluation. Please complete that evaluation for today's program. We really value your input and we want to let our funders know about the impact of our program.

We want to thank our speakers today for sharing their time and knowledge with us. It was very interesting. Thank you all.

A reminder that the session was recorded today and it will be available for viewing next week at [www.adapresentations.org/archives.php](http://www.adapresentations.org/archives.php).

Thank you all for attending today's session. We look forward to seeing you on October 13 for the first webinar of next season which will be the ADA National Network Learning Session: The National Fire Protection Association's Emergency Evacuation Planning Guide for People with Disabilities.

Have a good afternoon, everyone. Thank you very much.

Bye-bye.