

**PACIFIC ADA CENTER**

**FEMA PROMISING PRACTICE: COMMUNITY MAPS TO  
CATALYZE PARTNERSHIPS, PLANNING AND ADVOCACY  
FOR ACCESS AND FUNCTIONAL NEEDS**

**Aimee Voth Siebert, Devon Williford, Julia Beems  
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>> **Lewis Kraus:** Good afternoon, everyone. Welcome to the Emergency Management and Preparedness Inclusion of Persons with Disabilities webinar series. I'm Lewis Kraus from the Pacific ADA Center, your moderator. 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. And I have put that in the chat window for you. More information about FEMA can be found at their website at [www.fema.gov](http://www.fema.gov). And I have put that in the chat window as well. When you are at their site, type in ODIC into the FEMA website search.

This webinar series will share issues and promising practices in emergency management inclusive of people with disabilities and others with access and functional needs. The webinars will 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.

This year's topics will cover 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 will alternate monthly between 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 the series at <http://www.adapresentations.org/schedule.php>. That is the website that you went to to find out about the series itself.

These monthly webinars occur on the second Thursday of the month at 2:30 p.m. eastern time, 1:30:00 p.m. central time, 12:30 p.m. mountain time, and 11:30 a.m. Pacific time. By being here you are on the list to receive notices for future webinars in this

series. Those 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 are now going to review some of the features of the webinar platform before we begin today's session.

In this session only the speakers will have audio. Audio for today's webinar is being broadcast through your computer. Make sure your speakers are turned on, your head phones are plugged in, and you can adjust the sound by sliding the sound bar left or right that's located in the Audio & Video panel in the upper left-hand corner. If you're having sound quality problems, go through the audio wizard which is accessed by selecting the microphone icon in the Audio & Video panel. That microphone also has a red gear symbol on it.

If you do not have sound capabilities on your computer or prefer to listen by phone, you can dial the number on the screen, 1-805-309-2350 with the pass code of 555-2153. Note that is not a toll-free number. You can find your local number that would be toll-free at our website at [www.adapresentations.org/local\\_numbers.php](http://www.adapresentations.org/local_numbers.php).

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The white board where the presentation slides are shown can also be resized smaller or larger by choosing from the dropdown menu located above and to the left of the white board. Right now the default is Fit Page.

You can also resize or reposition the chat window, the participant window, the captioning window, and the Audio & Video panel by detaching and using your mouse to

reposition or stretch or shrink. Each panel may be detached by using the icon with the lines and the little arrow that's located in the upper right corner of each panel.

You can type and submit questions in the chat area text box or press “ctrl m” and enter text in the chat area. If you are listening by phone and not logged into the webinar, you can ask 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 the participant list. A tab titled Pacific ADA Center will appear in your chat panel and you can type your comment in the text box and then enter. If you're using keyboards, use keyboard F6, arrow up or down to locate Pacific ADA Center, and then select to send a message. You can also e-mail us at [adatech@adapacific.org](mailto:adatech@adapacific.org) or call us at 1-510-285-5600.

You can follow along the webinar platform with the slides. If you're not using the platform, you can download a copy of today's PowerPoint presentation at <http://www.adapresentations.org/schedule.php>.

At the conclusion of today's presentation there will be opportunity for everyone to ask questions and you can submit those questions in the chat area as I described. 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.

Today's FEMA Promising Practice is titled "Community Maps to Catalyze Partnerships, Planning and Advocacy for Access and Functional Needs." This statewide mapping project aimed to bridge a gap in current emergency preparedness and response planning and resources. There is a need to supplement current hazard and infrastructure-focused risk assessments with indicators of community access and functional needs which intersect all hazards and response roles in a community.

Following the identification of these indicators the collaborators enhanced the project by building complementary maps to represent community resources found throughout the state that could be engaged to help address the community needs that were identified. As more of these resource maps are built and they engage new partners, this project supports the work of many emergency preparedness and response partners

catalyzing collaborative conversations and projects about planning, partnership and whole community preparedness.

Our speakers today are Aimee Voth Siebert, Devon Williford, and Julia Beems.

Aimee Voth Siebert, pictured in the picture second from the right in the photo, works for the Colorado's Office of Emergency Preparedness and Response at the State Department of Public Health and Environment. She has served as Communications Liaison and most recently as the Community Inclusion Coordinator and a Disaster Behavioral Health Specialist. She launched immediately into her role there during the 2012 wildfire season and the Century 16 Theater shooting in Aurora. Her other disaster response and planning experiences have included the 2013 wildfire season and the 2013 September flooding during which she led the grant writing for a 60-day, \$800,000 crisis counseling program for all nine disaster-declared counties. Between emergencies, Ms. Siebert works to engage communities and develop systems, resources and training in access and functional needs, behavioral health, and communications for myriad emergency response audiences.

Devon Williford, far right in the photo, has been working at the Colorado Department of Public Health and Environment since 2004, assisting the department in developing desktop GIS and web-mapping applications supporting data visualization, disease surveillance, mapping community health resources, environmental public health tracking, and emergency preparedness and response. In addition, Mr. Williford is Manager of the department's Health GIS unit responsible for managing the department's GIS infrastructure and providing support to GIS users within the department.

Julia Beems, in the middle of the photo, is Senior Instructor and the Assistive Technology Program Outreach Coordinator and Emergency Preparedness Program Coordinator with Assistive Technology Partners in the Department of Physical Medicine and Rehabilitation at the University of Colorado Denver Anschutz Medical Center. She has developed a program to assist the first responder community and individuals with all types of disabilities and all ages to prepare for emergencies. Her current responsibilities include providing outreach services across Colorado to individuals with disabilities and their family members; professionals from educational, employment, healthcare and

emergency response agencies who work with them; policymakers and legislators; and the general public. Ms. Beems represents the ATP as a member of the North Central Region Functional Needs Steering Committee, the state Community Preparedness Advisory Council, the Colorado Advisory Committee for Persons with Disabilities, and the Statewide Independent Living Council.

And while those are today's three speakers, a larger group did the overall work and they are in this photo as well. On the far left, Rachel Coles, who was the Program Evaluator and past Vulnerable Populations Coordinator. And next to her, Adam Anderson, a GIS specialist.

I'm now going to turn it over to Aimee, Devon and Julia. You guys can take it away.

>> **Aimee Voth Siebert:** Thank you, Lewis, for the introductions and to FEMA and the ADA National Network for inviting us to present. And thanks to everyone who has joined the webinar. We're excited to hear your questions and feedback. We're interested how a project like this might look in your state or your county. As we go through the slides, we invite you to think about the question: How can data about people and access and functional needs assets in our communities be integrated into our plans, our partnerships, and our capacities to promote more inclusive emergency management?

I'm so grateful to have worked with the four people named on this slide, Devon Williford, Julia Beems, Adam Anderson, and Rachel Coles. I'm pleased that Devon and Julia can speak on today's webinar with me. Each of us represents a different background, perspective, and connection to community. Our process of developing these maps and getting feedback was a microcosm of community inclusion practices that taught us a lot.

Because I've never predicted all of the different ways these maps would be used and tailored, we started the maps because the state was building a new joint risk assessment process and we wanted to make sure that information about the people of Colorado communities, their diversities, abilities, and needs, were considered when planners were prioritizing hazards and infrastructure. For example, wouldn't hazards that

force evacuations be a higher priority if data showed a high percentage of people with mobility difficulty in your county?

That's where we started. But every time we have shared these maps with a new audience we've learned something new. Public health planners, behavioral health groups, emergency managers, disability entities, and volunteer groups have all given us feedback. We're pleased to have you as another audience that can inform us further.

One big lesson from this project for us has been the power of human energy. The quote here is from a book about empowerment by a family who did three generations of development work internationally; hence Taylor, Taylor & Taylor. Their work revolved around making living situations better for people at small and large scales. Most of the time we think about money being the resource that makes everything happen but the Taylors said that understanding human energy as the currency of social change does not simply open the process of change to all; it also removes the prerequisites for action; meaning that productive change can begin anywhere at any time. Improving quality of life for a community starts by strengthening the successes already operating.

These could be principles for emergency management, too, I think. Though we have professionalized many aspects of emergency response, the system is made stronger by asking members of our communities, especially people with disabilities and other access and functional needs, what works for them every day that we can preserve during disasters. That means talking not just about their needs but about their expertise, their resources, and their successes as the second quote suggests.

People who are empowered as experts of their own assets and experience become individuals, groups, and whole communities who take more ownership of their preparedness. Simultaneously, the emergency management system becomes more representative and they discover response assets that they would have missed without their community's participation.

All five of us on this team work from a statewide perspective. The data we assembled for these maps represent statewide assets and demographics. We have resources like people for GIS mapping work and connections to strategic planning that

our local partners may not have. This project became one avenue by which we're working to change our state's fear of influence while also supporting the human energy at the local level where initiatives for whole community inclusion are already at work. Several local Colorado efforts, including one that was recently featured on this FEMA and ADA series, have complemented and used our maps. So we hope that we're on our way. Basically, the mapping book is not an end in and of itself. The maps and their data are one tool that is crossing multiple levels to help bring people front and center in Colorado in emergency planning.

Another lesson that the maps helped our own offices engage is changing our language from community vulnerability to community inclusion. When I started this project, my title in the office was Vulnerable Populations Coordinator. And that did not endear me to a number of the groups I was trying to work with. Over the project, it has been changed to Community Inclusion Coordinator. Though it will take time to completely phase vulnerable populations out of our vocabulary, these maps and the community assets they highlight help us demonstrate that our goal was never to coordinate vulnerability; it was to coordinate inclusion. Because cultural diversity and access and functional needs are growing situational realities in modern communities just as much as more frequent super hazards are a situational reality. So we must prepare for both of them equally.

Maps can be good as concrete conversation starters about situational realities. And then once the conversations get started, the many advantages of community inclusion speaks for themselves. Dave Schaad from FEMA's Office of Disability Integration and Coordination once told me that people with disabilities and emergency managers are both experts in resource management. They're focused on what they need, where to get it, and how to mitigate supply chain failures. When you're bringing the strategies of people with disabilities to the emergency planning table, it doesn't just benefit people with disabilities but also older adults and other people who use durable medical equipment or alternative forms of communication. So it's almost like killing two birds with one stone.

Aimee, you might be thinking, what makes this project special or different? In some ways not a lot but in other ways it's like the phenomenon of a perfect storm. Say the maps are a boat out at sea. There may have been an almost identical boat yesterday but there was no wind. For this map project all of a sudden there's a squall blowing up the coast and we're going to make good time because of other momentum that's coming out of Colorado and out of national partners. Colorado experienced a slew of disasters in the past five years but drew attention to its access and functional needs in our own backyard. There are also national initiatives and new data that we can capitalize on as we try to turn more focus towards these needs. We do have the foundations of past mapping efforts whose challenges and barriers have taught us how to make, let's say, better sails for the boat this time around.

In 2006, Rachel Coles was in my position and she built maps based on the 2000 census and on Colorado healthcare facility information. The datasets were similar to the indicators we have in our first maps for this project and included age, households below the poverty level, race, and ethnicity, refugee status, language isolation data, households on public assistance, households using public transportation, and healthcare facility locations.

The map on this slide shows Spanish language isolation by census where households said they spoke primarily Spanish rather than English. It also shows local hospitals and medical providers by the department at the time. Maps like this helped identify the location of services, general access to care, and facilities that might need Spanish language services to serve their population if they didn't have them already.

There were many challenges to sharing this early mapping. The map you saw on the slide was a pdf, just a picture. Pictures aren't interactive or adjustable so the data couldn't be updated in that format. Even if organizations had other GIS mapping capacity, the information was still difficult to share because they were both these shape files that took up a lot of space. Therefore, they couldn't easily be e-mailed or uploaded to the available share sites at the time. But most people did not have GIS software to view the maps anyway.

Data was also much more limited back then, especially when it came to indicators about disability and other functional needs.

Rachel observed that this lack of data came as much from a lack of coordination and awareness of joint efforts or resources as it did from a true lack of information. Though there were groups beginning to have conversations about community diversity and inclusion, most of them were still isolated and the concept had not yet spread very far. The current mapping project has the advantage of a changed environment where a greater number of people are now considering community asset mapping, more organizations are building relationships for sharing resources, and the technology for interactive web-based mapping has flourished. The shift in focus from vulnerability to inclusion also widens the search from just needs-based data to the strength of the community, too. That gives us a more holistic and complete view.

Culture changes in emergency planning have also bettered the integration of community data and partners. FEMA's whole community approach was published in December 2011. CDC's social vulnerable index shown on this slide was designed to help public health officials and local planners better prepare for and respond to emergency events with community-based factors. Their census indicators, if not their vulnerability approach, are the same as many of our general indicators though they do not include the new disability data.

June and Alexander published their seminal article about the FEMA's functional needs in the "Journal of Disability" policy studies in 2007. More and more, communication, maintaining health, independence, support services, and self-determination and transportation are being recognized as functions that need to be supported for all people during disasters. Building systems that address these functional needs can sometimes serve multiple access and functional needs communities with the same strategy.

Culture changes have also happened in public health. Devon is now going to talk about the use of community-based data by public health partners and especially the styles and benefits of mapping that have influenced this project.

>> **Devon Williford:** Hello. It's a great pleasure for me to be here today. Later on I will be discussing some of the mapping technologies used in this project but I would like to first focus on how Public Health Departments utilize data, maps, and Geographic Information Systems technologies or GIS.

When a health department examines or wants to promote health equity, socio-demographic data plays a large role in describing the population. Often we can model our socio-demographic data and also model our health outcome data in maps. And those two maps will show a lot of similarities.

This slide shows the health equity model recently published in our Colorado Public Health Improvement Plan and highlights the role of socio-demographic data in the model.

A recent report described how mapping, GIS, and associated technologies are utilized in healthcare and public health activities. This emphasizes what types of questions this technology can answer and bring to an organization in which sub-fields can benefit.

GIS connects people to data and people to people. We often use GIS at the Colorado Department of Public Health to map where things are, map densities, find out what is located inside of a region, what is the health outcome rate outside of the region. We utilize GIS in disease surveillance, risk analyses, health access and planning and community health profiling.

One recent collaborative effort at the Colorado Department of Public Health and Environment highlighted what data our health divisions and environmental divisions can both bring to the table to address health equity and environmental justice. We completed an inventory of our health outcome socio-demographic data to inform community-based activities.

Internally, we created a web-based map viewer to display disparities in our health outcomes across the state and locate where clusters of our environmental facilities are located. In addition, our socio-demographic data provided a lot of additional information as to where our aging populations live and where we have diverse outcomes in our socio-demographic characteristics.

So, the question we wanted to answer was: What data do we have that local health and environmental health agencies needed that we weren't providing? So we've attempted to reach out to them to describe data that can improve their activities at the local level.

Finally, this slide provides insight into the benefits of collecting good location data. The features are places on the left-hand side column, all have a specific location, address or boundary. If we collect good location, address about these features on the left, we can start to address these issues or topics that are on the right-hand side column. Those issues or topics are very public-health rich in terms of their -- of why we have health departments. These are the tasks that we were charged with solving. They include informing resource and information communication; informing emergency planning; assessing community inclusion factors; informing community health assessment; measuring health burden; modeling the changes over time; looking at the interaction with environmental exposures and built environment; and informing health and planning policies. So good locational data improves our ability to make decisions.

Now Aimee will talk about bringing these specific pieces together into the Colorado community inclusion project.

>> **Aimee Voth Siebert:** Thanks, Devon.

Having the capacity and specialists like Devon and Adam is especially nice when we suddenly have three new kinds of data also supporting awareness of functional communities that we could man for this project. In September 2013, Colorado experienced widespread flooding and new maps were made during the response to track which healthcare facilities were in the flood path. These maps included hospitals, community mental health centers, and long-term care facilities. So we incorporated those as a base layer into our demographics map. The first five-year estimates for total disability and for cognitive, ambulatory, hearing, vision, independent living, and self-care difficulties were also available for the first time from the American Community Survey in 2013.

When these data were added to our project, the new disabilities maps drew Julia Beems' interest, which we'll hear more about later. As a result of the partnership with her that grew into this project, we have also been able to map the regions and office locations of service providers and community organizations for people with disabilities that Julia has compiled. We were able to share contact information for these providers and communities that also helped emergency planners make that first connection.

Every state has a program funded by the Assistive Technology Act of 1998. So we encourage you to reach out to this program in your state to see if they hold similar data in your jurisdiction. It's been great to be able to use this information as a way to build momentum here in Colorado.

Unfortunately, not all momentum is entirely positive. This slide lists some of the largest disasters or disasters with the biggest lessons learned in Colorado over the past eight years. And it's not a comprehensive list. Actual events are the most candid mirrors for evaluating our emergency systems. And people's experiences become the ultimate criteria. So here are some of our challenging examples.

In 2008, there was a salmonella outbreak in Alamosa, Colorado. And the boil water notifications were not ready in Spanish in spite of the fact that there was a large Spanish-speaking population that lived there.

In 2012, following the Waldo Canyon fire, the Rocky Mountain ADA and the Independent Center of Colorado Springs provided a report that highlighted communication barriers, information needs, transportation access, shelter access, and other issues for people with disabilities.

And during the Aurora theater shooting investigation there was a situation during which large refugee communities had to evacuate their apartments but because there were no language services available at that time, they didn't understand the situation and some of them thought that they were losing their homes.

At the same time, some of these same reports highlighted unexpected workarounds that could be worked into future response as best practices. So both good and bad were seen during every incident. And the concerns were not unique to these

Colorado disasters but these disasters made them personal for many in our communities and many among our emergency responders.

They always say the best time to push preparedness as both communities and agencies is right after a disaster. So improvement projects, including our maps, have been harnessing that momentum, too. So after pulling the right people together to build these maps, seek feedback and compile with other resources we had a product and it was what we thought we wanted it to be: a tool that made access and functional needs information easy to use and apply to current planning; something that could prompt conversations and translate to action.

In the back of our minds, we were always thinking about smaller communities where sometimes the emergency managers has three jobs and no time. We wanted this to be a tool that that person could use to learn more about who is in their community and about who they could connect with as a powerful partner for finding needed community assets. We also realized that the maps had helped us begin a registry not of people but of resources for access and functional needs that we could use to bring new partners to the table. For example, we asked our state unit on aging to give healthcare coalition contact information to the local Area Agencies on Aging. So some of those groups may end up helping to plan for emergency health and medical needs at the local level through these coalitions. We realize there are so many directions to explore.

We know there are many of you from different backgrounds on the webinar today. And this next part of the presentation may be more interesting to some. For those of you who might entertain having a similar mapping project in your jurisdiction, this is an outline of how the data went from numbers to story maps and a briefing book. If you're interested in the specific indicators from the American Community Survey or in the specific service providers and community organizations that Julia compiled, there is a pdf document on the site that we will give you that has names, definitions, and sources of all the indicators organized by which map they can be found on. If you would like this information in another format, feel free to e-mail me or others on the group.

I will now let Devon walk through these other bullet points in more detail.

>> **Devon Williford:** Thanks, Aimee.

The first step in gathering data for our project was to explore what data is available on the American FactFinder website. A consensus list of socio-demographic and disability functional indicators was developed with input from our team. This data was downloaded at the census tract geography.

I want to emphasize that the indicator data we utilized in our project was from the 2009 through 2013 American Community Survey five-year estimates. This data can be easily queried at census tract or county geography using the query tool found on the American FactFinder website.

The next step is to take the organized spreadsheet of downloaded census data and to geo-enable it. Using our desktop mapping software, we have census-tracked GIS layers that already exist. And using the FIPS code, the unique indicator for each census tract, we can link or join the downloaded census tract spreadsheet -- excuse me, the downloaded census data spreadsheet from the American Community Survey and join that to our census tract geographic map layer using that FIPS code. So the map layer is the output from this process.

Once inside our desktop mapping software, our census tract layer now containing our downloaded socio-demographic and disability functional indicators, this map layer can now be customized in terms of its symbology. Using our desktop mapping software we can use class breaks, color schemes, as well as employ a transparency color scheme for each individual layer.

The resource provider and community organization facility data provided from our partner organization, the Statewide Independent Living Council, contains an address for each facility. The process of geo-coding these addresses creates a map layer and allows us to visualize this data with our socio-demographic and functional indicators.

Geo-coding is the process of assigning a latitude and longitude location to each address. After modifying the addresses that didn't necessarily match and clean the data so we know we have the right latitude and longitude for each location, we can create layers for resource addresses as well as the districts or multi-county regions that those

resources support. We can also symbolize these resource layers inside our desktop mapping software.

All of these map layers are brought together and served out from a web server inside the health department so that they can be consumed in a web-mapping application which is what our community inclusion application consumes. We have existing server technology here at the State Health Department that is required to serve out these map layers so that they can be organized and used inside of an internet mapping location.

This is the web-mapping application we chose to use. It's called the Briefing Book Template provided by ESRI software. Utilizing this customizable template we're able to connect each page to a specific map; we're able to group our data by difficulty or disability; and we're able to kind of organize each map into individual pages, if you will. This also provides, more importantly, the ability to add context and text for each map giving the user additional information that might help them figure out what they're looking for in each map. We can also add images, logos, and connect this application to other websites.

Ok. Julia is now going to talk about her perspective in bringing the resource provider data into this project.

>> **Julia Beems:** Hello. I've met Devon and Aimee two years ago at our statewide emergency management conference and attended their session on mapping. At the same time, I was trying to come up with a mapping system of our own for some disability resources.

I currently work at Assistive Technology Partners and have been doing outreach with them for over 20 years. As part of that, I've been on the Statewide Independent Living Council. We have to produce a three-year state plan. And as part of that, our current plan, we included data collection on some of the different disability resources that were available. We were looking to identify specific hubs where people were located in the state both rural and urban areas, trying to help organizations get a better idea of where they should be providing their outreach and efficiently use their resources. We are also trying to get a better understanding of some of the service areas or catchment areas that

each of the centers have. We were looking at existing service and support groups, disabilities by types and ages, as well as the homeless population. What we were truly wanting to do was work together to increase the capacities to provide services in each of the service areas as well as reduce the duplication of services.

Over the years I have become known as a whole house of information because I have traveled the state so much and have known the resources all over the state. So it became my job to compile resources through not only my job at Assistive Technology Partners but for the Colorado Independent Living Council. So again, we looked at all the different populations and services in existence in Colorado, looking at the main agencies, looking at statewide offices and outreach offices. And we tried to compile this information into a guide where we could serve underserved populations in Colorado. Many of the centers collect this information anyway but we needed to compile it all in one location.

So we were able to utilize the maps to identify some other potential collaborators for the state emergency managers and have them locate local support groups. And service providers could provide input into their plans to make sure that they were part of that inclusive community. We also looked at providing educational opportunities and other events through collaborations with these agencies as well.

So as Aimee mentioned earlier, there are 56 different assistive technology programs across the nation. So there's one in every state and territory. They all do some resource development like this as well. And then there are State Independent Living Councils across the nation as well. And you have the connections for both of those. And then our office, like I say, we're part of the university so we are able to collect information not only in our state but across the nation. We currently have a database of resources of over 2,000 agencies that work with people with disabilities across the nation that we can make referrals to.

With that, Aimee will now take you through the actual map book.

>> **Aimee Voth Siebert:** Thank you, Julia.

For those of you who have been patiently waiting for the map book, we're to that point in the presentation. We will have slides about the map book to follow in this PowerPoint but if you would like to open the map book while you listen, the link at the top of this slide is <https://bit.ly/CICOMaps>. My apologies. There's an s, https. Feel free to follow along if you like.

As Devon mentioned, a map briefing book is a format by which multiple maps can be kept in one location. It's a format that allows you to add narrative or other resources alongside the maps. The image showed on this slide is the landing page that you will see when you go to the link at the top of the slide. We turned this into an introduction to some of the ways we hoped information could be applied to emergency planning, partnerships, capacity building and response and as an opportunity to once more talk about why we're moving away from vulnerable populations language.

Devon will be showing you screen shots of some of the other pages in the briefing book but here is a basic Table of Contents that you will be able to follow. After the welcome page there is a page that gives tips on how to navigate the briefing book as a whole and it includes a Table of Contents that you can use to skip to other pages.

Then we have pages for each of our seven story maps. When you open these pages, please be patient. There is a lot of data, depending on your internet connection. We're pleased that we'll probably be able to add an additional server for additional speed in the near future but hope everyone can be virtuous in the meantime.

The first story map includes 13 broad community indicators from the American Community Survey: population density, population under 18, population over 65, race and ethnicity, population that speaks English less than very well, households with no vehicle, mobile home, institutionalized populations, income, education, single parent households, households that move to the house that they are in during 2010 or later -- which in Colorado is significant -- and, of course, total disability.

Indicators give percentages or whole numbers of people in each census tract with that characteristic. That gives us geographic detail that can show differences across a jurisdiction. We also had partners who are interested in those total numbers for an

indicator for our county. And as Devon mentioned, the American FactFinder website will allow you to search for these same indicators for an entire county. That web address is [factfinder.census.gov](http://factfinder.census.gov). These maps also had healthcare facility locations when zoomed in.

Map two, as you can see delves deeper into the American Community Survey for disabilities. There's a repeat of the disability map followed by maps for ambulatory, cognitive, hearing, independent living, healthcare, and vision difficulties.

Maps three through seven are story maps for the service providers and community organization that Julia provided. These resources relate back to one of the five disabilities or difficulty areas. So they begin with a repeat of the particular American Community Survey map specifically for aging, cognitive, hearing, mobility, and vision then resources related to the specific indicator follow.

There are some agencies that serve multiple populations like Division of Vocational Rehabilitation offices, Area Agencies on Aging, or Board of Cooperative Education Services. But then there are also agencies unique to a particular need, [Indiscernible] resources and stroke support groups are found on the cognitive map but not on others.

If you are interested in the specific indicators from the American Community Survey or in the specific service providers in community organization that Julia compiled, there is a pdf document on the site.

The final three pages of our map book offer additional context about the project including its development process, some of its current applications, where we would like to go next, and then links to more information about agencies and other resources. We'll talk more about those areas at the end of the presentation.

One question you always get about data, especially data that changes, is: What is your maintenance plan? We have three kinds of data here: the American Community Survey, state monitored health facilities, and disability service providers or community organizations. The plan is to update the data on annual intervals when the American Community Survey estimates are updated. Most service providers information does not

change all that often and rather than trying to deal with rolling information updates we can keep it to simple yearly updates. We would also update location information to the best of our ability in the event of an incident here in Colorado.

Devon is now going to walk through some slides that show the functionality of the map book.

>> **Devon Williford:** Thanks.

I'm going to go over some of the basic functionality that our community inclusion tool provides. This second page displays the Table of Contents and provides the user with a sense of what content is available in this tool.

Listed in red here are some of the actual navigation tools available. We have our Table of Contents on the left side which allows you to actually go to some of the maps. If you're only interested in one of the specific -- one of the seven maps, you can find it in the Table of Contents. You can also see where the navigation arrows are to scroll through the tool or the map book, excuse me.

Here we also have two very important downloads. We have the downloadable pdf of indicators and resources that are used in compiling the data for this map book as well as what Aimee just spoke about, the downloadable spreadsheet of the actual resource locations, as well as the census tract indicators used in creation of the maps.

Scrolling right, this screen shot displays one of the resources or difficulty maps, aging difficulty in resource map. Above the map we have tabs of all of the resource -- different resource maps that are provided in this container as well as indicator data from the census that was chosen to use in this map; and that is the percent of the population over the age of 65.

It's important to realize that the user can scroll through -- here there's 10 different tabs located at the top of the map. And to familiarize yourself with what those tabs are, there's a list of the actual resource points listed in the Table of Contents for this specific map.

Within the map, the user can interact with the data in several different ways. We have the zoom in, zoom out tool that's traditionally visible on most web maps. The user can pan around the map by clicking and hold downing the mouse button as well.

Clicking on a census tract or county in the map can provide different sets of information. If the user is interested in getting the census tract indicator data, they can click on a tract to find out what the actual percent of the population over the age of 65 is or they can also get resource facility information, which I'll share in an upcoming slide.

>> **Aimee Voth Siebert:** Lewis, we're having technical difficulties advancing the slides. Are you able to do that for us? Thank you.

>> **Devon Williford:** Great. This slide just reiterates that there are different tabs above each map that allow the user to explore the geographic distribution of many of these different resources and also find contact information for each resource.

By looking at the -- it seems like we need to advance one more slide, Lewis, please.

By clicking on an individual symbol or region, the user is provided with a name and contact information of the functional resource provider.

I'm going to go back to Aimee now. Aimee will summarize the directions of where our work is headed for this project.

>> **Aimee Voth Siebert:** So one more slide, please. Thank you.

In a lot of ways, these perhaps are dynamic and will continue to change and grow in response to the interest and needs of our planners, our communities. We hope that they are a jumping off point for many more activities and meaningful interactions for access and functional needs.

We'd like to direct the last part of the webinar before we go to your questions to three topics. We want to highlight some of the ways we're seeing these maps used, how we plan to use them in the future, and the lessons we're learning about making maps and other forms of this information accessible.

It is nice to be able to say that this stage of our mapping project came full circle. As the state beta tests our new joint risk assessment tool this year and rolls it out next year, these community inclusion maps are included in the guidance as a resource for bringing people-based information into the assessment process.

We have also helped public health and hospital partners crosswalk where these maps can be applied to the capabilities and functions of the two major public health grants; those being the Public Health Emergency Preparedness Grant and the Hospital Preparedness Program Grant. We're interested in maybe doing this for the core capabilities of emergency management, too.

Following the 2013 slides and the 2012 and 2013 wildfire seasons in Colorado, the Governor's Recovery Office assembled work groups to build a cross sector state resilience framework. While it was instigated by the recent disasters, the framework aims to understand resilience more broadly because no disaster happens in a vacuum. We're pleased that the community inclusion maps have been highlighted as a strategy of promising practice model in both the community and health and social sectors.

Those are examples from our state level. And like we said at the beginning, we've been very excited by the ways that local groups are finding to use this project for their own work. For example, the county emergency planner told us she uses the resources and maps to update her plans, reach out to new partners, and that she will soon host an access and functional needs meeting with those groups. There are medical reserve corps around the states using the maps to inform who they will engage this year and where there are events near the communities. Red Cross volunteers also thought they could use the maps in their outreach, too.

Devon has worked with the Southeast All Hazard Region of the state not just to use the map layers from this project but to also map other fatality areas like cemeteries.

Next slide. For partners like the Southeast, who have GIS capacity and interest, there's another format by which these data layers and maps can be stored. The maps shown here -- the map shown here is another online ArcGIS map that the department has developed as a situational awareness map viewer. We use this during emergency

preparedness, during our exercises, and certainly during our incidents. The community inclusion map layers were added to this web map and can be turned on and off using the checkboxes along the left column there.

The complexity of this map, as you can maybe tell, can be overwhelming. And that's why we chose the story map formats to share with our partners around the state. But the benefit of incorporating the community inclusion demographics and resources into this decision-making map is that you can see them alongside the latest wildfire, flood, or other hazards and system boundaries alongside other assets as well.

Being able to locate and contact nearby service providers during an emergency event would be an immeasurable benefit, especially if we learn what personnel resources and communication plans we should establish to make use of that information during a scenario; so how many state people do we need monitoring and contacting groups like this during an event.

So that's one project we may have for the future.

On the next slide, there are other projects that we have identified that we hope to further in the coming year. The map image here is actually from the Health Equity and Environmental Justice collaborative that Devon mentioned earlier. This is a map by which layers of environmental exposure, health outcomes and social determinants of health were stacked and then indexed to find regional opportunities for concerted Health Equity and Environmental Justice projects. We have this as a model that we could try using our data layers and our resources. At a state level can we identify places where there are diverse and functional needs community groups but where there are gaps in the resources available to them? That information could help local and state partners focus on creative solutions that bolster the community's strength and alternative strategies in that area.

We are also pleased to be offering training on how to use these maps to the All Hazards Regions across the state next year. We hope these trainings will allow people to both become familiar with navigating the maps but also to start a conversation among

multidisciplinary planning groups about how this information can be applied in their planning, their partnerships, capacity building and response.

Colorado is also a rapidly change state when it comes to our communities. So we are excited to use the data from Rachel's mapping era to do a change-over-time project with the current map indicators from this community inclusion work. This will hopefully begin to give us a picture of how populations are growing and moving in Colorado over time which will help inform and anticipate planning priorities. As there begin to be more years of the American Community Survey disability five-year estimates, we can also demonstrate changes in those communities as well.

There are other areas of community inclusion that we want to build up as we learn about new indicators. Colorado has a growing refugee population and we'd like to learn more from community providers about what data is available and how we could support their engagement in emergency preparedness. We would also like to enhance mental health indicators about our community.

These maps have already changed some of our state planning and partnerships and we expect that to continue. As we gain better understanding about who needs to be at the table, we'll be better at the state level at engaging community experts to talk about planning priorities, exercise [Indiscernible], recovery resources and the likes that improve readiness for access and functional needs. And hopefully, our systems will also continue to improve in accessibility.

Next slide.

As we said before, we are on a learning curve when it comes to making visual data, especially mapping data, accessible. We've learned a lot from working towards this webinar with Julia and with webinar planners. Some of it has been at a simple level like being consistent with the alt text for pictures and 24 font in our presentations. When it comes to the maps themselves, the work is more involved. The image on this slide show the data table we created to provide a tabular format of the data found in each of the web maps within the map book. That can be found, as Devon pointed out, on the Table of Contents page of the map book. We're also trying to create text-based pdf's or rich text

formats for screen readers of the other resources in the map book including all of the narrative in the map book. The community inclusion indicators and resource list, and some of the other articles referenced in the presentation.

We might not have it quite right yet but we're learning. We talked with Lewis about some of the ways that he's taken map data from the census and made it accessible on the web and we would be interested in how some others may have used it.

In some ways we're still in the middle of this project. We're figuring out what's worked well as well as our lessons learned. It's been a good journey so far. And one of many that we hope brings us closer to inclusive emergency management practices.

Now we turn it to you all. What questions or ideas do you have?

Lewis, we hand the moderation of the webinar back over you.

>> **Lewis Kraus:** Thank you so much. That was a really action-packed session. I think everyone was quite entranced by all the information that you had to give. There was a lot to take in. While all of you submit your questions in the chat window, and we'll get to those in a moment, I'm going to add a little bit more for you.

First of all, for the information -- if you want instructions on how to access disability data at the local level from the American Community Survey, I'm going to put in the chat window now a document that we have created here that will take you step-by-step through that. You can see that in the chat window. It's at [centerondisability.org/docs/fact\\_finder\\_v5.pdf](http://centerondisability.org/docs/fact_finder_v5.pdf).

Furthermore, as Amy was referring to, we have put up maps that can get you all the way down to your county level for disability data on disability types. Those are available at that website that I just put up in the chat window. And you'll see the entire data by disability type and you can go down into your state by either clicking on it in the map or in the table below it and get your data for your counties. So that's a little extra more information for you.

All right. Let's turn to the questions and comments. First of all -- oh, although she left the room, Sue Bush said, "Three cheers to you guys for reframing coordinating

vulnerability to inclusion.” She would like to talk to you in-depth about your mapping project and share hers with you. I assume she will contact you at your contact information there on the screen.

The next question is from American Red Cross, Helen Miller. Is there a site we can find out specifics for persons with disabilities in our own area?

Helen, hopefully you got that information I just put up there. I think that will solve it for your particular local area. You can find your local disability area for your local area at the addresses I put up in the window now.

Next question. Where can you get more training on these different map applications?

>> **Devon Williford:** Specifically we're using ESRI software technology. So you could go to the [www.ESRI.com](http://www.ESRI.com) and look up story map or briefing book there for information on how to access that technology.

I really think that the web mapping technology, especially the technology that we're utilizing here, is very easy to understand once you have your data published. So I think it's more about what types of geographic information do you have and how is it published. Is it published using map server? Where can you access that data using these map book or story map technologies? So I would start with the ESRI website -- not a plug for ESRI but that's the technology that we used -- and see how they would like for you to access that technology.

>> **Lewis Kraus:** Ok. The next question asks: Is there a HIPAA problem with the map system where you're locating the persons who need a particular service or don't you isolate that data?

>> **Aimee Voth Siebert:** Because the American Community Survey data are estimates, they are also aggregated information. So as those are primarily the sources of information that we're using, it doesn't come into a HIPAA issue because there are no individuals identified and in most cases the estimates would obscure particular people that would be covered by HIPAA.

>> **Devon Williford:** I'll just add to that. I don't think this information is considered -- is not HIPAA protected or confidential.

>> **Lewis Kraus:** Ok. I'll just second what Aimee said about the HCS. HCS won't release data if it gets down low enough that you would be able to identify an individual. So that data shouldn't be able to be individualized at all.

Next question. Will this resource be able to be used to borrow resources from one location to another during a disaster?

>> **Aimee Voth Siebert:** That's an interesting question. If I understand the question about maybe using it as a way to identify groups to create Mutual Aid Agreements or Memorandums of Understanding, that is not something we have approached but we're hoping that the partnerships that people identify that they haven't taken advantage of yet could lead to that. But it would probably be outside of the map book that we've created so far. Very interesting question.

>> **Lewis Kraus:** Ok. And just a reminder to everyone that all of this will be archived, the entire presentation. And all the slides are archived at the <http://www.adapresentations.org/archives.php> site within about three days. Ok?

Next question. Somebody's asking if you would be able to attend some emergency preparedness sub group meetings or ADA meeting groups to present this information.

>> **Aimee Voth Siebert:** We're always excited to make new connections. Feel free to contact us with more information about it.

>> **Lewis Kraus:** All right.

Next question. Well, actually, the next question they're looking for some more connections. Please feel free to send your information, send your questions in.

Aimee, so tell us a little bit about maybe how you are -- you know, how this is being received by local organizations. Have they given you feedback about the usefulness of it or how they're able to plug into it and how that is working for them?

>> **Aimee Voth Siebert:** Yeah. So let's see. Some good examples. As we were building the initial maps and trying to sort of determine do we have the right indicators, what do you all think about how you would use -- we worked with our regional staff. In Colorado there's a big difference between the Front Range and the Western Slope of the state. And one thing, for instance, that we learned is that though mobile homes are considered a risk factor in most cases, especially when they're in flood plains, our Western Slope Regional staff let us know that in their communities sometimes the mobile homes are better quality than the standing homes of other types of builds that they have.

So that became a big lesson to us about how people are taking this information and using what they have at a local level to contextualize it. This is very general information, right, to start with. And the community providers and resources that we've identified through Julia's data are the ones that tend to have representation across the state. But that leaves out absolutely the groups that might be non-government organization that just exists in that one municipality.

So we're hoping in addition to people considering -- what we've experienced is that in addition to people considering what we've provided, they're also considering what they have that's unique to their local community and what gaps might still exist which is definitely how we came around to the conversations about mental health about more information about refugees, and we're excited about pursuing those further as we go on.

>> **Lewis Kraus:** Ok. Next question. Have you considered or reached out to organizations or providers that provide services to individuals? It's these providers that enable functional -- people access and functional needs to live and maintain their level of independence.

>> **Julia Beems:** So that's what our resources are. We have local resources that are all providing services to the disability community and very specific types of disabilities. So we have resources for some of those different specific support groups whether it be ALS, Traumatic Brain Injury, Multiple Sclerosis. Those are all listed.

We also have resources for the aging population. So we have the Area Agencies on Aging, the Aging Disability Resource Centers. We have connections with the

Independent Living Centers, of course. And so they all are providing specific services to individuals.

We also have listed the [Indiscernible] As well as the meal delivery services and different transportation companies that travel through Colorado. So in case we needed a mass evacuation we even list transportation company that are providing services to the casinos from South Dakota to Colorado; we have trains; we have the individual trolley companies. All of them advertise that they have accessible transportation services.

I'm trying to think of some of the other agencies. We have the Older Individuals Who are Blind program here that provide services to seniors with low vision. We have our sign language interpreters and our CART services which provide services all across the state.

We have -- [Indiscernible] which works with our school districts. We have the Child Find Agency which identifies the small children with disabilities. We've got Voc Rehab. We have workforce centers. Anybody that works with anybody with a disability we have included.

>> **Lewis Kraus:** Ok. Great.

Next question. We are thinking of developing a similar mapping project and wonder what advice you have regarding the technical skills needed and the application costs essential to start the project.

>> **Devon Williford:** I think utilizing the ESRI technology -- there's obviously other technology: Google, Mapbox. Utilizing the ESRI technologies, there's kind two of ways to approach it. If you have a map server product inside your organization, you can serve out using that product or the online product, you can store in the Cloud, if you will. And either option will allow you to -- will allow you access to the template, the briefing book template, where you could actually build and store your maps. So you can either serve the information internally or publish it to a Cloud and utilize these templates provided by ESRI.

And, again, I don't work for ESRI.

>> [Laughter]

>> **Lewis Kraus:** And I'll just add in, in case you don't necessarily want to work with ESRI, if you're interested, we may be able to -- I may be able to help you, too. And you can just contact me directly. We could possibly work with you on that.

There's another question for you guys. Could this resource have rental of accessible vans used, to get accessible vans that could be rented to evacuate in disasters?

>> **Julia Beems:** Yes, we have those agencies included as well. We even have one of the companies -- one of the dealerships here in town that sells the MV1 or the accessible vans. We have them and the other accessible van companies listed as potential resources. So again, in case there's a need for some evacuation, we can do that as well.

>> **Aimee Voth Siebert:** And I think sort of -- what was mentioned before, it's just really valuable for them to be able to see where some of these companies are located and then to start building that partnership, where they can start to negotiate is this something that you could provide to me in an emergency, is this something that you could provide to me during an exercise or for other preparedness sort of pieces of work.

I think, again, what is provided in most of our maps is the most basic address and contact information to get people started. So it would be initiative taken by whoever was interested in having those vans available to find out more from the company itself.

>> **Lewis Kraus:** Ok. And the next question. Have you questioned communities as to how the mapping process has helped and/or supported during or after a disaster?

>> **Aimee Voth Siebert:** You gave us the question that's going to make us knock on wood. For better or for worse, after we started working on these projects we have not had a huge disaster in Colorado since then or really even a significant more localized disaster. We really do feel like we're still in the middle of rolling this out and helping partners understand how they can use some of this information. That said, again, a number of our maybe more volunteer-based or community-based organizations including the one from Colorado Springs that was featured on this series earlier in the year -- actually, last year, I believe -- they looked at our maps, given us compliments.

Yeah. So far it's anecdotal. It's also helped us identify partners that we want to have at the table at exercise design committees so that they can help us identify index that will make the exercise more suitable to training the system to be ready for access and functional needs.

So yeah. There are a lot of different communities. We've gotten stories back from some of them. We're hopeful to hear more of them moving forward. We'll definitely be trying to catalog those as practices that can be shared across the state as well.

>> **Lewis Kraus:** Great. Next question. In the event of an outage during a disaster, can these maps be accessed without power or internet?

>> **Devon Williford:** Yes. We do have them backed up on a flash drive or portable storage device in terms of the geographic information, the map layers. We have those backed up for all of our emergency preparedness layers that we utilize here. We would have trouble accessing the wildfire parameter or flooding boundaries from our federal government partners so we would have to figure out another way to access that information. There have been other ways in the past that that information has been available but he would have to figure that out.

>> **Lewis Kraus:** All righty. Very good. At this point I think we will begin to close here.

I want to remind everybody that you'll receive an e-mail with a link to an online session evaluation. Please complete that evaluation for today's program as we value your input. We want to show our funder what we are doing and the response that we're getting from people.

And I really want to thank our speakers today for sharing their time and knowledge with us. I think it was an extraordinary presentation and a true promising practice.

I want to remind everybody this session was recorded and it will be available for reviewing within about three days at <http://www.adapresentations.org/archives.php>. You

can also get an archive of the webinar by going to [fema.gov](http://fema.gov) and entering ODIC in the search box. You'll be on their page and it will be available there.

Thank you so much, everyone, for attending today's session. We look forward to seeing you next on April 9 for our next webinar which is ADA's National Network Learning Session on what's new in power before and after emergencies.

Have a great rest of your day. We will see you next time.

Bye-bye.