CDBG-MIT Webinar Series: Using FEMAs Benefit Cost Analysis Toolkit, 11/14/19

Jelani Newton: Good afternoon, everyone and thank you for joining us for today's webinar on using FEMA's benefit-cost analysis toolkit to demonstrate cost effectiveness of hazard mitigation projects. My name is Jelani Newton and my colleague Brittany White and I will be your webinar hosts today.

Before we begin, we'd like to just quickly mention a few housekeeping notes. First, for the best audio quality, we recommend connecting to the webinar audio through your phone line rather than using the computer audio. Next, we want to note that all the attendees will be muted throughout the entire session, but questions can be sent to the speakers via the Q&A panel at the lower right-hand side of your screen.

If you look to the lower right, you'll see the letters Q and A, right next to those letters is an arrow. If you click the arrow, it'll open up the Q&A window. Please post your questions to Q&A and in the ask question, select all panelists to ensure that everyone receives your question and someone can answer it for you.

Time will also be reserved at the end of the session to answer any questions that are received through Q&A that are not answered during the webinar. Lastly, the webinar is being recorded today and both slides and the recording will be available on HUD Exchange after the session. With that, I'd like to turn it over to Jen Carpenter at HUD to begin our session.

Jen Carpenter: All right. Thank you, everyone for joining us today. My name is Jen Carpenter. I am the assistant director of policy at HUD, our disaster recovery special issues division. I am joined today graciously by Rebecca Carroll. She is the FEMA BCA analysis program lead. So we're really grateful to have her join us today.

I'll be starting the presentation going into the CDBG-MIT requirements. So going through the notice, pulling out where we talk about BCA and trying to dig a little deeper and then really, the bulk of today's presentation will be with Rebecca showing you how to download, launch and input data into FEMA's BCA toolkit, how to navigate the toolkit and access its health contents and other resources and then how to generate project reports and export project files.

So this is a very, very truncated version of a longer training they do; very truncated. So we just really appreciate Rebecca being able to go through this with us today. So let's jump right into the BCA requirements in your CDBG-MIT notice.

So when do CDBG-MIT grantees have to do a BCA? A benefit cost analysis is required to illustrate that a covered project will demonstratively benefit the most impacted and distressed areas.

So what's a covered project? The Federal Register Notice defines a covered project very specifically. In the first section, we define it as an infrastructure project and we go even deeper to define infrastructure, because really, that can mean different things to different people. So in this

case, we are talking about an activity or group of related activities that develop physical assets that are designed to provide or support services to the general public in the following sectors.

So we even have a list of sectors specific to these infrastructure projects. We also have a dollar threshold for what defines a covered project. In the notice that we published on August 30th in 2019 that allocated CDBG-MIT funds for 14 of the 16 announced CDBG-MIT grantees, we defined an infrastructure project for the covered project definition as a project that has a total cost of \$100 million with at least \$50 million of CDBG-MIT funds or a combination of DR and NDR.

So it has to have at least a dollar of CDBG-MIT funds for this to trigger and then if the combined total of all the CDBG funds in your project are at least \$50 million, then it is a covered project. This covered project – the requirements around a covered project should be submitted either through your initial action plan or later in a substantial amendment to the action plan and then HUD will review and approve that.

So if you don't include any covered projects in your initial action plan and one comes up later that pushes over the threshold, in the past when we've used covered project thresholds in Hurricane Sandy, mainly our projects started off under the threshold so it wasn't a covered project. It wasn't included in an action plan.

And then when that project – something happened, the budget moved up, the project got bigger and it moved over the threshold, then the grantee has to submit a substantial action plan amendment and address all the requirements for covered projects. So once you know you're hitting that threshold, you're going to have to submit an action plan to HUD.

I also want to acknowledge that on September 10th, HUD published a second CDBG-MIT notice that covered the U.S. Virgin Islands. In that notice, HUD added grant conditions specifically for the U.S. Virgin Islands and one of those was to lower the project threshold for a covered project.

So for the U.S. Virgin Islands, their covered project threshold is a total project cost of \$50 million and then if they have a project with \$25 million, that same project, the \$25 million in CDBG-MIT or DR combined, then it would meet the covered project threshold. So what happens? You have a covered project, it meets the threshold, so what do you need to do?

In the Federal Register Notice, we cover the additional criteria that all mitigation projects must meet – I'm not going to talk about those here. If you're wondering what those are, you can go back to our – the first webinar we did where we covered all of the mitigation notice. Right now we're just going to focus on covered projects and they – covered projects have these two additional requirements that you have to meet.

You're going to include them in your substantial amendment or your initial action plan if you have them in your initial action plan. So the first one is demonstrating long-term efficacy and fiscal sustainability. So to do this, the grantee must document measurable outcomes, a reduction in risk. This is something you really need to do anyways.

To meet the definition of mitigation, you have to show what the reduction and risk is for the project to be eligible and then you're going to document how the covered project will reflect changing environmental conditions with risk management tools and then whether or not you need to alter funding sources.

So what are changing environmental conditions? We give an example here of sea level rise. That would affect, obviously, some of our grantees, not all. Other grantees might have different environmental conditions. The key is identify the risks. What are the risks and how are you going to manage those risks in a way that's going to protect human health and safety and you need to be able to document that.

The grantee also must establish a plan for long-term operation and maintenance, other covered projects and include that description in your plan. We know from experience that CDBG DR grantees have struggled with this in our other programs. And so we just want to make sure we're really calling it out.

Grantees are very specific about how those operation and maintenance costs, who is going to be doing that, who is going to be paying for it, where is that coming from and how are we going to make sure that's maintained long term for the life of the project. So this is really the heart of the webinar today, the second requirement of a covered project is to demonstratively benefit the MID area.

So the easiest way to do this is to have a benefit-cost analysis that is greater than one and you can do this through the FEMA BCA toolkit. We're going to dive into that once we switch over to Rebecca, but we want to talk about some alternative ways to get BCA. One thing to note, even if you're using the FEMA BCA toolkit, any benefit-cost analysis must account for economic development, community development or other social community benefits or costs.

So we're still HUD, we still have to include these. Rebecca's going to mention how if the FEMA BCA toolkit does not include those, you would probably have - you would have to do those outside of the toolkit, but then add them back. And so it's just something to consider. You know, we're still HUD, we still have those co-benefits that we care about.

You must also indicate whether another federal agency has rejected a BCA for this covered project, including any BCA that was done for an earlier version of the current proposed covered projects and maybe you've changed it since the rejected BCA. That's something HUD wants to know about and you should identify that in your narrative.

So let's talk about alternative methods since we're going to dive into the FEMA BCA toolkit, but what if you're not using that, we'll talk about what the notice says. You can use a non-FEMA BCA methodology for the following three reasons.

First, if a BCA has already been completed or is in progress pursuant to BCA guidelines issued by other federal agencies, and we list the Army Corps of Engineers and the Department of Transportation, for example.

So you already have a project, you have an approved BCA, you're in the process – you're in progress – you have a BCA in progress. In order for HUD to accept that BCA completed or in-progress pursuant to these other federal agencies, again, you have to make sure you're accounting for economic development, community development and other social community benefits or costs.

So most likely you might have to do that outside of this other agency's requirements and add those benefits and costs back in and then it's – the CDBG-MIT project must be substantially the same as the project analyzed in the other agency's BCA.

So we're going to be looking for you to affirmatively confirm that in your action plan, initial – and in your either initial action plan or your substantial amendment, that you are declaring that this project is substantially the same as what was submitted for that other agency's BCA. And then the other two ways in which you can use a non-FEMA BCA is if it addresses a non-correctable flaw in the FEMA-approved BCA methodology.

I think this is a rare case. You'd want to identify, in your narrative, what the flaw was and why it can't be corrected in order to use this and we want to make sure it meets all other BCA requirements in this section in the notice. And then a third one, which we'll dive a little deeper on, is that it proposes a new approach that is unavailable using the FEMA BCA toolkit.

So this is our – if you're following along in the notice, this section is – (inaudible) – alternative demonstrative of benefits. And again, as I mentioned, we're still HUD and we want to account for our core mission, right, that we're serving low and moderate-income persons. And so if your covered project is benefitting LMI persons that are less able to mitigate risk or respond to and recover from disasters, we want you to be able to demonstrate that you are including these benefits.

So you have a BCA, you complete the BCA, you know you're benefitting low and moderateincome persons, but your BCA is less than one; right? So you don't meet the sort of standard regular BCA requirement. Now, what we're allowing you to do is we're allowing you to add this additional qualitative description of benefits if you find yourself in this position.

While this qualitative description of benefits can't be quantified, you have to sufficiently demonstrate the unique and concrete benefits of their covered project for LMI persons and other persons that are less able to mitigate risk, respond to and recover from disasters. And we give some examples of these qualitative descriptions and these are just examples.

These are not requirements, these are not the things that you have to touch on, these are just examples. So you could show, through a qualitative description in your narrative, how the project would enhance if you need economic development potential. You know, potential is a hard thing to quantify.

How it improves public health or how it would expand recreational opportunities. So that's just three examples of the kind of benefits you could qualitatively describe in your covered project.

So if you have those kinds of benefits but your BCA is not one or greater, you could include that qualitative description.

And then just logistics info, as a CDBG-MIT grantee, you can include the BCA for your covered project together with any qualitative description, as I mentioned, as an appendix, your action plan or substantial amendment that proposes the project. So if it's in your initial action plan, include it with that or via your substantial amendment.

And also, just a word of advice taken directly from the notice – don't wait; right? It's imperative that you conduct your BCA early in the process so you ensure your likelihood of meeting the cost effectiveness eligibility requirement. We've actually placed these requirements, if you notice, in the CDBG-MIT notice.

These covered project criteria are actually in the national objective requirements. So to meet a national objective through a covered project, you have to meet these requirements, the two requirements I showed you prior. So you need to meet a national objective. So to do that, you want to make sure you're doing this BCA as early as possible.

If you need a qualitative description, you're thinking about that as early as possible so you can include that with your project. You don't want to wait until the end, go full on in a project and then not be able to do that BCA analysis. I'm going to throw it over to Rebecca Carroll.

Rebecca Carroll: All right. Thanks, Jen. Good afternoon, everyone or good morning, depending on where you are listening in from. My name is Rebecca Carroll and I work for the Federal Emergency Management Agency as their benefit-cost analysis program lead. So today, what I'm going to be covering is the basic navigation and use of our BCA software, which we call the BCA toolkit.

And as Jen mentioned, unfortunately, we're not really going to have enough time to go into more of the thought process behind benefit-cost analysis.

We do have some resources, which I'll point out at the end of my presentation that talk much more about things like how to identify benefits of your project, what counts as benefits, how to quantify them, what kind of data you need for your project, but I will touch on this today, but mostly I'm just going to be covering the basic operation of the software.

So as Jen mentioned, to facilitate the process of preparing a BCA, FEMA, we do have software which we call the BCA toolkit. This is an Excel-based tool which calculates a Benefit-Cost Ratio, or BCR, for a hazard mitigation project. Our primary users are grant applicants, however, this tool can be used to analyze any hazard mitigation project, regardless of size or funding source.

So just a little bit of background why we have our BCA software at all at FEMA. There was a 1999 Government Accountability Office, or GAO, report about our BCA process that basically said there was a lot of room for improvement. So FEMA developed the BCA software to

standardize some of the methodologies in 2006 and 2017 or reengineered the BCA software and established the currently used methodologies, equations and standard values.

So the BCAs performed in our BCA toolkit do comply with the guidance in the Office of Management and Budget or OMB Circular A94, which tells federal agencies how to do benefit-cost analysis. So our newest version of the BCA toolkit, which is called version 6.0, is an Excelbased add-in and if you're not familiar with what an add-in is, it's like an app within Excel that extends the functionality of the program.

So download instructions for the tool are at the website in the link there and then once we do the demo, I'll go to that link and show you where it's specifically on that page, the download instruction bar. And again, what the tool is doing is it's calculating a benefit-cost ratio for the project and it does it by estimating the damages before and after mitigation, which are the benefits of the project and then dividing that number by the cost.

So the two equations at the bottom, the benefit-cost ratio that's fairly straightforward, it's just the benefits divided by the cost and then what the benefits of the project are, like I just mentioned, are what – the damages before mitigation, so the damages in kind of the status quo condition minus what the damages would be after the mitigation project is complete and I'll talk a little bit more about that on – in a few slides.

So before we dive into the software demo, I do want to touch a little bit about what counts as benefits in the BCA toolkit. So for FEMA, benefits are any future costs or losses that are avoided as a result of the mitigation project, such as structural damage, repair costs, loss of function of public facilities or deaths and injuries for certain hazard types.

Some projects do also qualify for kind of additional benefits if they improve the natural environment or prevent people from being displaced from their residences and we do have much more guidance on this in the BCA toolkit help content, which I will show everyone how to access when we do the demo and also our training materials which can be found at the same link.

So let's talk about – a minute for what don't count as benefits and you'll notice that there is an asterisk on this slide and that's because these don't count as benefits in FEMA BCAs, but they may count in other federal agencies. So the first one, in the FEMA's BCA toolkit, we do not count the secondary effects of the project, for example, increased employment or economic growth.

And like Jen mentioned, that actually is a requirement for HUD that you capture that in your benefit-cost analysis. So I think what you would probably have to do is somehow quantify those benefits, the economic growth benefits and then add them to the total benefits that are calculated within the BCA toolkit and we can kind of show you how that would work once we do the software download.

So the second thing that FEMA does not count is anything that's not quantifiable. So for example, the increased resilience of a community that may be a benefit of the project and we

know that's a benefit, but unfortunately, there's not really a good way of quantifying that. So FEMA does not allow that to be counted in the benefit-cost analysis.

And then the last two are things that are quantifiable, but because FEMA is primarily focused on the risk reduction benefits of projects, FEMA does not count these. Those are energy cost savings and then reduced pollution or greenhouse gas emissions.

And then if you did want to count these as benefits of your project pending HUD's rules on this, you could do the same thing as the economic benefits where you calculate them outside of the software and then add them altogether at the end. So when thinking about your BCA, before you get into the software, there's some kind of questions that will help you frame your BCA and kind of start gathering data.

So the first is what is the overall intent of your project? This is not the physical work that's being performed. So let's use an example of a flood wall. So if we're building a flood wall, the intent of the project is not just to build a flood wall, the intent of the project is to protect something from flooding; right?

So that kind of leads me into the next question, which is what structures or public services will be protected by the project? Maybe it's home, utility infrastructure, fire station, police station, government services, hospitals, etc. You really kind of want to think about what's being protected by the project.

The third question is what is the level of effectiveness of your project? And I'll talk a little bit more about this in a couple slides. This is really important, because all mitigation projects, with the exception of buyouts, where you are physically removing the structure from harm's way have some sort of barrier point; right?

So let's go back to the example of the flood wall. So once the floodwaters get to that top of that flood wall, that project is no longer affected. So you need to know what that is so that the software can properly calculate the benefits of your project. And then finally, what damages occurred or are expected to occur that can be directly tied to the hazard that's being mitigated.

So if we think back a couple slides ago where I talked about what counts as benefits, so let's use the example perhaps we are doing a project to strengthen power lines so that we would reduce the likelihood of something losing power, perhaps they've had repair costs related to past power outages, they had to send out workers to repair the lines, perhaps the police had to work overtime to go direct traffic because the traffic lights were out.

Those are the types of things you need to kind of gather data on, because those are numbers you're going to plug into the BCA. So what data do you need for a BCA? For all projects, you're going to need to know, this is pretty obvious but where is this project happening and what hazard are you mitigating?

For infrastructure type projects, this doesn't really impact the calculations, but it's really just more for you to keep track of the project and the software. You need to know the project costs,

which seems obvious if you're doing a benefit-cost analysis. You need to know what the project cost is and then you also need to know the project useful life and what that is is that is the amount of time that the project is expected to be effective assuming proper maintenance.

The help content in the software does provide standard values for many project types and typically, we see project useful life somewhere in the range of about 30 to 50 years. So thinking back to the list of questions I said that you need to think about as you're starting your BCA. So for each facility or service of being protected by the project, you need to know a few things.

You need to know what year it was built. So if you're protecting a hospital, what year was that hospital built? Depending on the type of facility, you need to either know the number of residents, the number of customers or the annual budget. You need to know what past damages occurred or what damages are estimated to occur at the facility and this is going to be in the form of either dollars or the number of days the service was impacted.

So for example, if we're talking about a hospital, perhaps in 2005 they had an event where the hospital was – you know, the service was affected for two days, that's the damage amount. Preferably, these damage amounts are associated with what we call recurrence intervals and I'll talk more about what that is on the next slide, but those are essentially the likelihood of that hazard event occurring at that location.

And then finally, like we talked about, you need to know what the level of project effectiveness is. So let's talk a little bit, before you get into the software, about what we mean by past or expected damages. So what this software is doing to calculate the benefits of the project to software is basing it on past or expected damage amounts entered by you, the user.

So one note, these must be damages that would be mitigated by the project. So for example, perhaps you have a flood event in 2015 that flooded a school but your proposed project had no impact on the school whatsoever, it's not going to prevent flooding at the school, you cannot count the damages associated with the flooding at the school in your BCA.

So ideally, these damage amounts are going to be associated with a recurrence interval and a recurrence interval is the likelihood of that hazard event of a specific severity. So for example, the likelihood of 200-mile-per-hour winds at that specific location. So for example, perhaps you had \$60,000 of damages in the 1 percent annual chance storm.

If you don't know the recurrence interval for any of your damage events, that's okay. If you have at least three past events, the software will actually calculate the recurrence intervals for you. And then to really hammer home on the project effectiveness, we think back to the equation I showed a few slides ago where benefits equals damages before mitigation minus damages after mitigation.

So to properly estimate the damages after mitigation, the software needs to know what the level of project effectiveness is and this is going to be in the form of the recurrence intervals. So the 1 percent annual chance event or the 100-year storm plus the damage amount, which is, again, going to either be in dollars or the number of days the service would be impacted.

So for example, in the 500-year event, we expect one day of lost service even after the mitigation project is complete. Sometimes you might hear this referred to as residual damages. In most cases, this is going to be determined by their project engineer or some other type of qualified professional. So that was a very, very brief overview of what counts as benefits and what type of data you need to begin your BCA.

So now I'm going to actually go into the software and give you guys a demo. So we're going to cover download, installation and launching, some basic navigation, how to start a new project, how to add a structure to your project, how to save, how to generate a report and print it and then how to export and import BCA files.

So download instructions are at our website, which the link is in the first bullet there and then I – in a couple – I think I'm going to have one more slide after this and then I'm going to do a live demo and I'll show you guys all where on that page that the download instructions are. So the system requirements for the tool, you do need Excel 2013 or later.

If you don't have that, don't panic, because you can also use this in Excel online, which is free. You do have to create an Office 365 account, but again, that's free. You just need an Internet connection and that's actually a great option too, because sometimes we have heard of a few folks where their IT departments are not allowing them to install add-ins.

So you should be able to use that Excel online if that applies to you. So now I'm going to do a live demo of the software. There are some more slides in the presentation, but they're really provided more as a visual reference for later viewing. So hopefully everyone can see my screen. I'm going to first go to the FEMA BCA webpage, which the link is in the presentation.

You can also just Google FEMA BCA, which is usually what I do. It's the first thing that comes up. So if you look about halfway down the page, you see a line here for BCA toolkit 6.0, you want to expand that. We have some notes here about 6.0 and then here we have our installation and launch instructions.

I'll zoom in a little bit since I know the font may be small on your screen. So there's some different - so if you want to use Excel desktop, these are your instructions. If you're FEMA, here's your instructions, but there's probably not anyone on the call from FEMA. And then if you want to use it in Excel online, the instructions are here.

So I'm going to first download the Excel file here. I'm going to say open. Now, I just want to go back to this page really quickly. I want to point you guys - we do have a user guide on here and then we also have some release notes here. The add-in file here you don't need to download this if you're downloading the add-in for the Microsoft store if you're following the other directions, this is only if you're going to use it in Excel online.

So if I open up that Excel spreadsheet and say enable content – and so since I've already downloaded the tool, I'm going to see it up here on the upper right-hand side in the home tab. So once you've installed the add-in, you should see the same thing. I'm going to click on that. A side window will pop up.

There's some kind of help – a little bit of help content here. You can kind of click through the dots and it'll show you kind of – just to give you a brief thing of how to start a project, but you're going to want to click open calculator and it's going to open up a new window. Let me get my notes here just to make sure I cover everything.

So this is your home screen. So this is going to - what your - if you had project stays in the file, you would see them listed here. We don't have anything in this file. So we don't see anything. And so to add a new - start a new project, I'm going to click add project here. So here's where you're going to enter some data for your project.

So the first thing we're going to enter is the project title. So I'm just going to do a fake project here, I'm going to say hospital flood wall. If you're connected to the Internet, when you start typing in an address here on property location, it's going to start populating addresses but – (inaudible). So I'm just going to type in 123 Main Street, just pick an address here.

Again, for infrastructure type projects, it doesn't really matter what you put in here. The software does have the capability to analyze wildfire mitigation, seismic mitigation and then hurricane wind retrofits. So if you're doing one of those project types, it actually does use your location information to pull in the hazard data for that location.

So I'm going to select a structure type. If you're not sure what to select here, I'm going to point you to the help content. So you see these little I's here, if you click on that, it's going to bring up a help window and the help content is really great, it's a wealth of information. It's probably about 80 to 90 percent. So the questions you'll have as you're going through the software can be answered in the help content and it is dynamic.

So it's going to show you help content relevant to whatever screen you're looking at. So here it's going to tell me a little bit about the page. Let's say I don't know what to put in for my structure type, I'm going to expand that section and then it's going to tell me – give me a little bit of information about each option and hopefully get some better idea of what to select.

So since this is a hospital, I'm going to select critical facility building and then the hazard I'm mitigating we'll say it's a Riverine flood. And again, there's some – so these options are driven by what we select in the previous line. So I'm only going to see mitigation project types that are related to flood.

So if you're not sure what to put, you can always just put other. Again, it's not really impacting the calculations; it's more just kind of how the software tracks the project. So let's say I've had past damages at this facility and that's what I want to base my BCA on; I'm going to select historical damages here and then I'm going to put in a project useful life.

So again, let's say I'm not sure what to select, I'm going to select the help content here and click on the section for project useful life and here we have a whole -a bunch of tables that talk about different project types and what the standard value for that is.

So one thing I'll point out, we do have a standard value for project useful life for all these project types and then we also have kind of what we call acceptable limits that you can go up to that number if you provide some sort of documentation perhaps from the manufacturer or your project engineer explaining why you're using that higher value.

So for this, I'm just going to say 30 years, my project cost perhaps, I'm going to say \$2.5 million, I'm not going to have any - if you have maintenance costs, you can put those in here and you'll notice if you - it's going to automatically add that to - oh, yes, we just got a question, you don't see other listed as the property structure type.

Yes, that is actually a bug in the software. We are working on fixing that right now. So we should have that fixed shortly. One thing I will note, the great thing about having this as an add-in is you never have to install any updates, they all update automatically. So anytime we fix a bug or update something next time you open up the add-in it's just going to automatically download to the newest version, which is pretty cool.

So I'm going to click next and it's going to take me to another screen and here's where I'm just going to put in some of that data that I mentioned you need. So I'm going to need to know what year this hospital was built. So perhaps it was built in 1980. I also want to point out some other things here.

So you'll notice there's a little – some lines and a plus here over on the right-hand side, that's what we call the comment box. So for FEMA, we require documentation for all the numbers that are put in here. So for example, I just put in that the year the property was built was 1980. I'm going to open that up, then I'm going to tell – I'm going to say see property record card in project application or something like that.

Just basically letting the reviewer know where they can find the justification for that number in my project application. I don't know what – (inaudible) – goals they're going to be as far as documentation, but I know for FEMA, we have very strict requirements for what counts as documentation for these various data points.

So I'm going to say save there and that's actually going to show up in the project report which I'll show you guys how to open up in a second. So - (inaudible) - selected the property type - or structure type as critical facility. It's going to show me the critical facility is what we call card and what we call cards are kind of just the founded boxes of different effective data inputs.

So I'm going to select hospital from this list and it's going to ask me some questions about the hospital. It's going to ask me how many people are served by this hospital. So that's probably data you would get from the hospital itself. So I'm just going to say 100,000. I think we had a question about - I think I'll answer the questions at the end.

So I do want to note if you - so I think the question was about if you don't have the number of customers or for other critical facility types, you would select other and then you would put in the annual budget and that's how it's going to calculate the value of that facility. So it's also asking me here what's the distance in miles between this hospital and the hospital that would treat these people in the event that this was inoperative?

So I'm just going to say it's 30 miles from the nearest hospital. How many people are normally served by the alternate hospital? I don't know, we'll just say 80,000. So here's the card where it shows historical damages before mitigation. This is where it's going to ask me what are – what damages have occurred that can be directly tied to what I'm – my project is mitigating?

So it's going to ask for a damage year, recurrence interval and again, if we don't know the recurrence interval for our event, we would need at least three historic events. How many days was this hospital impacted in that particular event and then we have optional damages here. So the primary damages for critical facilities are in the number of days they were impacted, but perhaps we also had repair costs because it flooded.

So I'm just – you can rename your column to say repair. So I'm just going to put in some numbers here, perhaps in 1987 we had a flood and the hospital was impacted for 2 days and had \$95,000 in repair costs. I'm going to add a row here, add in my next damage event – (inaudible) – was in 1992, 2 1/2 days of impacted service and \$120,000 in repair costs.

Next one we'll say 2004, 1 day and a cost of 80,000 in repair costs. And you'll notice here these – (inaudible) – annualized recurrence interval, these were all zero until I put in my third event and now what the software is doing is it's using the numbers I'm putting in here to essentially create a curve and it's going to fit things to a curve, which you don't really need to know that, but that's kind of what's going on in the background.

I'll put in one more damage event we'll just say in 2016, – (inaudible) – a flood, three days of impact and \$550,000 of damages. Maybe they were all for medical research or something. So here's where we put in the damages after mitigation. We do need to know the recurrence interval for this. So again, this is going to be at what level is the project effective to?

So perhaps our project engineer has told us that this flood wall is effective up to the 500-year event and that once that 500-year event takes place, we expect about 2 days of impacted service and \$75,000 in repair costs. So I mentioned that some projects also qualify for additional benefits. You can see here there's a card for what we call environmental benefits and these are for projects that are improving the natural environment, which a flood wall perhaps not.

So I'm not going to put anything in there and I'm going to collapse that. And then you can see our benefit-cost summary here at the bottom. So the total benefits of their project, which are being calculated here, about \$9.4 million, costs \$2.5 million and our benefit-cost ratio is 3.72. So I'm going to say finish.

Here's our project summary screen. If we want – this is the only structure that's in our project right now. So perhaps if our flood wall is protecting something else, we could add something.

We could add another structure and just go through the same steps that we just did. You'll notice in this gray bar here there's some kind of breadcrumbs that allow you to kind of go back and forth in your project.

Let's see, so if we want to look at the project report, there's a button here that's called view report. I'm going to click on that and it's going to bring up a page that has essentially a summary of all the data I put in. It has a map here at the top. If we had more structures, it would show a map of all of them. You can zoom in and out on the map before you actually print it, which is cool.

You'll notice that – if you remember, I put in the one comment for the year it was built. So you see the comments in up there. So this report can be printed. If we scroll up to the top, you'll notice there's a button here called print report. You just click that and it's going to print the report. I will note some Mac users have been having issues with the report printing.

We're trying to fix that as quickly as we can. In the interim, you could just take a screenshot or screenshots of this report page. So if I want to close that or if I want to print it, you just click that. It's going to bring up your print window and you just select what printer you want it to go to. I'm going to close that.

I'm going to go back to the home screen. Now, let's say I want to send this project to somebody, there's a couple of different ways I can do that. I can actually just send them this Excel file. So what I'm going to do is I'm going to save my Excel file. Oh, it's going to tell me this is read only. So I'm going to say save as, save it to my desktop, it'll say – now you can rename the file.

I can say hospital flood wall BCA, save it and it's going to save it to my desktop. I could email someone that Excel file or I could select the project here and I can say export. It's going to bring up an Internet Explorer window here and it's going to ask me what I want to do with it. It says export as a zip file.

There's no need to do anything with the zip file once it exports. You don't need to unzip it or anything. So I'm just going to say save as, save it somewhere where I know where it is, that's my desktop. I can rename this folder if I want, but I'm just going to leave it as the default. So that went to my desktop and I can also email somebody that zip file and they would be able to import that project here.

So if I navigate to where I saved that, which was my desktop, if I find it here in my list, then I'll select it, say open, import and there's my imported projects right there and it has an imported on date and timestamp with it. And I can go in and edit it, I can look and see – actually, so this is actually going to be locked and this is done on purpose, because we want to make sure that if you export a project or if you import someone else's project, you're not able to make edits to it.

So if I want to make edits to it, I'm going to copy it here using the copy button and then if I open that one up, it's going to allow me to edit that. So we did that on purpose just to kind of – for some version control. If you don't care about people editing your project, you can just email back and forth the Excel file, it's really up to you.

So I think I have – oh, one other thing I wanted to show you – the last thing I wanted to show, you'll notice that there is a – go to the next page. A lot of the data fields have the use default, yes or no, toggle. What that is is a lot of – we really tried to simplify the software from the previous version and put in a lot of default values where we could, however, if you have better data, you can always override those.

You can say no and then you can put in your own number and then at least for FEMA, we recommend that you put something in the comment box kind of explaining using non-default values because whatever. So that's our BCA software in a nutshell. I know that was a very, very quick overview.

Oh, someone says they like the tool. Thank you. I don't know if anyone has ever used the previous version of the software, which is called version 5.3. This is a vast improvement in terms of user-friendliness in the number of data inputs. So we're really proud of it. So I'm just going to close that window and I want to make sure I save my work, so I'm just going to save the Excel file and then I'm done.

So let me go back to the – so we're back to the slides here. So these are all essentially just what I just covered. I'm going to scroll through them really quick. I just had them in here in case you want to refer back to them later. So before we open it up for questions, I just want to touch on a couple of common challenges and issues that we at FEMA see.

So the first and by far the most prevalent is the lack of documentation for the data that's entered. So for example, perhaps you put in a value for the project you select but then you don't tell the reviewer where you got that value or why you're putting in a different value. Insufficient data or documentation on level of project effectiveness, we talked about that.

Sometimes, at least at FEMA, we see a lot of projects where they assume that the project is 100 percent effective and they have no after mitigation damages. Lack of damage history, sometimes there's really just not records of damages that occurred at a facility. So in that case, what you can do is you can do professional expected damages option and then have an engineer or someone kind of estimate what the damages would be in a particular recurrence interval.

Including damages that would not be mitigated by the project, I talked about that a little bit. And then I think this is also – (inaudible) – to you is people not quite understanding what the recurrence interval means or they don't have data on what the recurrence interval is. Sometimes we hear people say hurricanes in New Orleans have a five-year recurrence interval because hurricanes happen there every five years and that's not quite right.

You really are looking at the particular wind speeds or the flood elevations from those events and what is the likelihood of that specific severity occurring at that location. And then finally, something we see, we see people leaving benefits on the table a lot of times especially for floods, drainage or flood mitigation projects, like drainage improvements they don't include all of the structures that are being protected by the project.

So that's really – you're really leaving benefits on the table when you do that. So lastly, before we get to the questions, I just do want to point out some of the resources. So we did – I did show you guys how to access the help content in the software. That is a great resource, I can't emphasize that enough how great that is.

Again, probably 80 to 90 percent of the questions you'll have as you're going through the software are answered in the help content. Our FEMA BCA webpage is there and then finally, we do have some training materials, which the training is intended as a two-day classroom course, however, you can access the training materials on your own and go through them on your own and they're at that link there on the slide.

So now are the questions. So I think I'm going to go – Jen and Cru (ph), do we want to – are there questions that you guys have compiled already or how do we want to do this?

Jen Carpenter: So I don't know if you saw up there the question one, and again, there's about four questions.

Rebecca Carroll: Oh, yes, I do see it.

Jen Carpenter: I think some of them were answered as you were talking, though.

Rebecca Carroll: Okay. The first question is, "Is there a standardized way to calculate the loss of an emergency operation center and damages resulting from delayed response time and reduced coordination?"

So the answer is yes. I will also - so there's a - I believe it's in the help content. If it's not, we do - there's a link on our BCA webpage for something called the BCA helpline.

They have information how specifically to calculate the annual budget for emergency operation centers, because usually they're not open all the time. So it's kind of hard to use the annual budget to calculate that number. And then damages resulting from the delayed response time and reduced coordination, that's a little bit harder to quantify, but I will say the value that's calculated for, I think, the fire and police stations and the hospitals, that does take that into account.

And again, if anyone is interested on how the values for those services are calculated in the toolkit, you can email the BCA helpline and they can send you the methodology reports.

Question two, "I don't see other as an option for property structure type." Yeah, that is a known error, we are working on fixing that.

In the meantime, I think you would probably just try to choose the one that fits best. The project is a pump station. You would probably either select critical facility or – you would probably select utility, actually, if it's a pump station, but again, we're working on fixing that. So hopefully that'll be fixed soon.

Question three, "Regarding critical facilities, public works buildings are not listed. Fire and police consider public works important to their response and we provide all their fuel. How would we classify a public works building?"

You would classify it as a critical facility and then in the options on that second screen, you would select other and then you could go ahead and put in the annual budget for that facility.

Aggregate acquisition projects, so this is a good question. You'll notice that it's kind of tedious to add new structures to the project and I think this is going to also answer the last question, which is, "How do you recommend performing analysis for large projects which may benefit a number of structures? Is there a way to batch import structures?"

The answer right now is no, however, we are working on that and we hope to have that probably sometime early next year available in the software and that is a feature in version 5.3, which is still available for download on our website. It is a very old version. It is a very old piece of software. So I can't promise you that it's not going to break in the next few months, but that is a feature in version 5.3 if you do need to batch uploads hundreds or thousands of structures.

So that's to the question about aggregate acquisition projects. What the software does is it calculates the benefits and costs for all of the structures in the project and then it calculates a project-level benefit cost ratio and at least from a FEMA perspective, our requirement is that the project benefit-cost ratio be 1.0 or greater.

So you may have individual structures within a project whose benefit-cost ratio are below one. I hope that answered the question. So the question is if the design is for a 10-year event, could the applicant argue expected damages for the 50-year event? I don't know, I think it's really going to be on the project engineer and the HUD reviewers to kind of determine how comfortable they are with the numbers that are input into the software.

The next question is can a project that is currently in version 5.3 be converted to 6.0? The answer is no, however, I hope that you saw that the number of inputs that are in version 6.0 are far fewer. So hopefully it's not too hard to take – put those numbers in 6.0 and at least for FEMA, we do still have version 5.3 available.

We are planning on sunsetting it probably by June of next year if it doesn't break before then, but until then it is available for us. So if you just really love version 5.3 or it provides some functionality that 6.0 doesn't, you're welcome to use it. Let's see, question, "Can we contact the – (inaudible) – for any questions or should we direct via the BCA website?"

Yes, I would recommend – so at the bottom of our BCA website, there is an email and a phone number for the BCA helpline. The intention of that is to kind of help more with technical questions with the software or if they have very specific questions about their benefit-cost analysis.

Unfortunately, they're not staffed to be able to teach people BCA or to review people's BCAs, but that is a good resource if you do have some questions about the software or kind of a more

specific question when you're doing your BCA. Question eight, is there any guidance that FEMA provides for using specific analysis periods?

Yes. So if you go to our FEMA BCA webpage, I believe there's a section called -I don't know if it's called reference or -it's called other reference materials and there's a document - there's two documents in there. One is called the BCA reference guide and the next is called the BCA reference guide supplement.

Those documents have information there about analysis periods. And generally, we use the year built and then the current calendar year to determine analysis duration, however, basically, if the drainage conditions have changed in the area or something significant has changed since the structure was built, we do allow, at least from a FEMA perspective, people to shorten that analysis duration.

Question nine, how does the BCA get evaluated, past – (inaudible) – numeric or grade? I'm going to let Jen answer that one. I know from a FEMA perspective, our requirement is that the BCR V. 1.0 or greater, we – at least FEMA, we don't really have a lot of – (inaudible) –criteria based on the BCR itself other than that the requirement it has to meet is that it's 1.0 or greater.

Jen Carpenter: And this is Jen. I would just say, as I mentioned in the HUD part of the webinar, if you do - if you have the 1.0 or greater, that's great and then if it's less than 1.0, you need to have that qualitative narrative that talks about benefits that cannot be provided through numbers. And so you would just include that analysis with your BCA if it's less than 1.0.

Rebecca Carroll: Okay. It looks like there was a follow-up to that. Would you require a separate memo for that or study? So I think Jen, did you – I think you did answer that.

Jen Carpenter: Yes. So you need that analysis in your narrative when you submit it to HUD with your substantial action plan amendment. So yes, we'd be looking for that if we see that your benefit-cost is not at 1.0. Oh, it looks like you've got one more, Rebecca.

Rebecca Carroll: Okay. It says, "After the download, I can't find step two or three." You may need to email the BCA helpline. There have been a few folks. There's been an issue related to some versions of Excel, a recent security update. A couple people have had issues downloading the add-in.

If you are having issues, I would recommend trying the Excel online method, because that seems to work better for some people.

Question 11, "Is there a factor in the default that takes them to the account isolated communities? For example, a rural area with a small hospital might have a small number of hospital beds but is critical to the community, which may be located far from the next hospital."

Yeah, so that's a great question. Right now the answer is no, unfortunately. FEMA, I believe there's some rule that prevents us from taking into account socioeconomic status when we

evaluate projects. So I – unfortunately, a lot of our benefits are driven by people. So projects that impact larger numbers of people tend to have more benefits.

Question 12 says, "If your workplace has the online shop closed off, you won't be able to download the add-in?" Yeah, that is true. That was actually the case for FEMA as well.

So I don't – depending on how many people at your organization need to download this, you might be able to go through your IT department and if you have Office 365, they may be able to do a centralized deployment of the add-in. So that's something you could ask them about or you could use Excel online.

Jen Carpenter: All right. I think that's all the questions. Do we want to move to the last couple of slides and then we'll see if we have any leftovers?

Rebecca Carroll: Yeah. Sounds good.

Jen Carpenter: All right. Make sure I have control of the – can I move the slides now? Yes. So hopefully everyone can see this slide.

First of all, thank you so much, Rebecca. That was a lot of questions and we really appreciate her answering all of those and if you have additional questions, you can always use the cdbgmit@hud.gov email and send it there and then I can see about getting some answers for you if it's something that can't be answered via the website.

So just to give everyone this resource slide that we've included in the past, these are the webinars we've already done as part of our webinar series. We have – this is our fifth webinar, actually. And so all of the materials have been posted for the previous webinars that we've done and the buy-out one that we did last week, those will be coming shortly.

Usually, it takes us seven -a little over a week to get those slides up. So just bear with us on this one. We'll try to - we try to turn it around as quickly as we can, get those slides up so you guys can download them and have them and then also have the audio if other folks missed it. And then our last webinar that we have announced is coming up next week and that's Best Practices for Transformative Mitigation Projects.

I've been seeing, through the evaluation questions we've got, that a lot of folks are asking for this. So that should be a good one to talk about some really success stories and best practices and I would love to know, as you're filling out the questions they send at the end in the evaluation, take a second and think if there are other webinars you'd like us to do over the next two to three months prior to action plan submittal which starts in February for the first cohort, let us know if there is some topics that we haven't covered yet in the five webinars we've done and that sixth one we're going to do next week.

Please let us know, we'd love to hear those suggestions and we appreciate it. So thanks everyone for joining us today. Is there another question, Rebecca, that you want to cover or -

Rebecca Carroll: Yes. I'll go ahead and answer this last one. It looks like – so the question is, "Is it acceptable to recreate the FEMA BCA calculation in an Excel spreadsheet outside of the toolkit and perform for a large project and input as professional expected damages?" So I would – so I kind of – my answer to that kind of depends.

I would say if you do have – so if we go back to the example where perhaps we have a project where there is 1,000 homes being protected, you could add up those damages in a spreadsheet and do like a lump sum and then just put in 1 structure in your BCA instead of 1,000. That would be acceptable. I can't comment – I can't speak for how it is to say whether or not it would be acceptable to recreate the tabulations themselves outside of the software.

Jen Carpenter: Right. So I think it would only be in the case where we noted in the presentation that you would not use the toolkit. So we had some things there where we talked about why you wouldn't use the toolkit. So I really think those are kind of the paths to take. And then one last – we have lots of questions.

Again, the presentation, just give us about a week and we will have it up online for you to download and we'll have the audio up, too, for you to listen. And then so just one last question that I do want to answer asking that if a community doesn't have a \$50 million infrastructure project, is the BCA not required?

Again, you only have to do a BCA if your project meets that covered project criteria that we established in the beginning that's defined in the Federal Register Notice. That's the only thing that triggers a BCA. So I think it's probably good practice to do a BCA on your project. But in terms of what HUD requires, it's only for covered projects.

And in terms of outside of a BCA how would you determine cost reasonableness? We really leave that to grantees. You make your own – you have your own analysis about whether things are cost reasonable based on market conditions, local conditions or where you are. So we don't really dictate that to grantees, it is something that each grantee should be doing based on local market conditions.

So I think that looks like all our questions. So we'll go ahead and wrap up early. Again, thanks so much to Rebecca Carroll from FEMA for joining us today and thanks to our Enterprise folks as well. Thanks for listening.

Jelani Newton: Thank you, Jen and thanks everyone for joining in. That concludes today's session. You will be prompted to take a brief survey once you disconnect from the webinar.

If you could take a moment to complete that, the feedback will help us as we prepare for future webinars like this. Thanks, again everyone, have a great day.

(END)