**Notice of Funding Opportunity (NOFO) Webinar Series: Application Pitfalls**

**September 1, 2020 at 2:00 – 3:30 p.m. EDT**

Alix Shutello: Before we get started, if you cannot see this screen, please log off and then back on. Make sure you are on Wi-Fi and not on your VPN, if that applies. This session has two parts. The first is a 40-45 minute prerecorded webinar followed by live Q&A. Since there is no call-in number, please make sure your speakers are on and your microphone is off. If you have technical issues regarding your Adobe connection, email FEMA-HMAComms@FEMA.DHS.GOV. The Q&A pod on the right of your screen is for application pitfall related questions only. Note that there is a planned silence between the end of the webinar in the start of the live Q&A session. This is done on purpose as not everyone's video experience is at the exact same speed. Also, these sessions are being recorded and will be posted to FEMA.gov at a later date. So, now we will begin the webinar. Thank you and enjoy.

Kayed Lakhia: Good afternoon everyone, my name is Kayed Lakhia, and I am the director of hazard mitigation at FEMA, and I’m here to kick off the application pitfalls webinar for FMA, Flood Mitigation Assistance and BRIC, Building Resilient Infrastructure and Communities pre-disaster mitigation programs. Hopefully some of you were able to attend our BRIC Summer Engagement Series webinars in July and our August NOFO and tribal NOFO webinars. The Application Pitfalls webinar navigates areas to focus on when doing applications for FEMA’s grant programs. We will make some general observations about applications before talking about best practices. We have a section dedicated to acquisition and elevations, another to wind retrofits, wildfire mitigation, energy resiliency, seismic retrofits, and safe roofs. We want to make sure that the best projects get funded, not just the most sophisticated ones. To enable that, we have made sure that these webinars give you the best tools available to put these applications together. Before we get started, I want to go through a few housekeeping items. Please make sure if you’re on a government laptop, you sign off the VPN and join over Wi-Fi only. That will greatly improve your experience today. Today’s session is being recorded so that we can share a link with stakeholders and partners who are not able to attend. The webinar portion of the session is going to last approximately 60-minutes and after that we will answer questions live. Note, however, that while FEMA is answering questions live, participants can only ask questions through the Q&A pod on the right-hand side of the screen. If you have technical questions or are experiencing technical difficulties, please e-mail our help desk, the address of which is on the left-hand side. It is FEMA-HMAComms@FEMA.DHS.gov. A moderator will respond to you directly for technical questions only. As a helpful tip, technical problems can be mitigated by signing off and signing back in, clearing your computer cache and turning on the speakers. Please note that today's presentation and other resources can be downloaded. Refer to the file pod on the lower left-hand side of the screen. Now, let's begin. This session is being led by Manny Perotin and Eric Kenney, who have both been part of the application review process for a number of years. Upon the conclusion of the webinar, we will come back to kick off the live Q&A portion of the program. With that, I wish you all the best to compete for this BRIC program and I look forward to seeing some exciting projects to further resilience in our nation. With that, let’s get started with Eric. Thank you.

Eric Kenney

Thank you Kayed for the introduction. As Kayed mentioned, my name is Eric Kenney and for the last 4 years I’ve managed (with my co-presenter Manny Perotin) the contractor support for the review of Flood Mitigation Assistance (FMA) and Pre-Disaster Mitigation (PDM) grant applications – I’ll refer to this as the National Technical Review or NTR. I’m excited to be able to spend some time today highlighting some best practices in this cycle as well as identifying some of the more common pitfalls that can be used to continue to improve applications being developed for the first year of BRIC as well as FMA. Next Slide please.

Today our agenda covers 5 primary areas. We’ll start with a brief overview of the application cycle – what did we see in terms of application numbers, proposed federal share and what kind of projects. Then we’ll touch on some overall observations that are common to most of the project types; high level pitfalls and best practices. Next, we’ll move into project type specific observations – what particularly did we see for the 8 project types we see the most of. We’ll wrap up the recorded portion of this session with a few key Recommendations for application improvement and then we’ll move into the Q&A portion. As Alix mentioned, please feel free to type questions as we go and we’ll address as many of them as we can at the end. Let’s move to the next slide and look at what we saw this year and what did well.

This year, under PDM, we received 321 applications for a federal share of approximately $475 M. We saw slightly fewer applications under FMA 167 sub applications - $290M in federal share over. These numbers focus on projects – management costs, planning and advanced assistance add to these numbers and exceeded the $460 M available under both programs

So, what went well this year – where do we want to maintain our successes? 338 of the applications we reviewed passed the NTR – that is they were found to be cost effective as well as technically feasible and effective. Passing NTR doesn’t mean a project gets selected –funding limitations and applicant / FEMA priorities come into play but passing NTR is an important step and where we focus.

We still see the highest number passing (160) for the acquisition and elevation project types, but a few other areas I’d like to call attention to, 19 flood risk reduction projects passed for a total of $33 M, 33 utility and infrastructure protective measures (over $130 M), and 39 safe rooms and 40 energy resiliency (captured here as generators) make up another $60 M. Overall, the 338 projects that we were able to move forward, total $495 million in federal share (again this is excluding management, planning and advanced assistance applications) so we continue to see these programs being oversubscribed. Next slide please.

Where is there room for improvement? Over 68% of the projects passed NTR review which means about a 1/3 --- 151 applications did not make it through the NTR review. Here I want to pause and note that about a 1/3 of this number – 50, were not reviewed by our team because they were determined to be ineligible. This equates to just under 10% of the total applications not making it into technical review.

The most common reason for this was an incomplete application – missing critical information such as a Benefit Cost Analysis. Less common issues included applications under FMA not benefitting insured structures as well as sub applicant eligibility issues .

Taking out these ineligible projects, we get a closer look at projects that did not pass the NTR review. This subset is 101 projects and 66% of them are in the flood risk reduction or infrastructure retrofit group – projects that would be likely candidates for the BRIC program. If we look at just those two project types, we see that approximately 44% passed the NTR, so that is a key area where improvements can be made. Generally, we see projects with either BCA concerns or BCA and technical feasibility concerns, it’s very rare that something is considered cost effective, but not technically feasible. The 101 projects that did not pass NTR have review memos prepared summarizing the issues we observed and we’d recommend looking at those memos as we view them as key tool for continued improvement in the application. If you haven’t seen them, I’d recommend reaching back to your State or Region. With that I’ll move into some general observations starting with some of the common pitfalls we see in the applications. Next slide please.

The first one I want to touch on is the scope conflicting with industry standards. We may see an elevation project that does not meet the requirements of ASCE 24, the application may state that the elevation will be to the Base Flood Elevation, rather than the Base Flood Elevation plus 1 foot. Cases like this may not prevent a project from moving forward, but if for example the vulnerability assessment compares the performance to a Risk Category 2 building, but the structure is a critical facility – we may not have enough information to be confident the proposed project will meet the design requirements. We also see where the design information conflicts with the before and after mitigation damages. For example – the design may state that the project will be built to withstand a 100-year flood, but the modeling provided shows flood elevations at the 50 year event exceeding the design elevation. Alternatively, the application states damages start at the 10-year event, but the information provided indicates that the structure is currently protected to the 25-year event. Documentation is critical. If assumptions are provided without a discussion of the basis for them, the reasonableness of them may not be able to be evaluated and because this is a competitive program – we’re not able to ask questions. Similarly we may see a wind or seismic retrofit without a vulnerability assessment – without knowing the pre-mitigation conditions, we may not have the information to determine if the proposed mitigation measure is technically feasible and effective to mitigate the identified risk. Finally – inconsistencies across the application especially as it relates to the level of protection. Understandably, it’s often not the same person preparing design material, developing the BCA or entering data into eGrants (or now – FEMA GO) so there can be a disconnect here. The review is based on the information provide and if there are discrepancies or inconsistencies and the correct value isn’t clear – we’ll use the conservative data which may impact the BCA. Speaking of BCA’s next slide please.

We see 3 main areas in the BCA’s that are common pitfalls. First – the basis for estimating damages (pre- and post-mitigation). The benefiting area of the project needs to be defined. We may see county level data summarizing the losses from a flood or hurricane event, but the portion of that that will be mitigated by the specific project isn’t identified or the entire impact of the event may be used – even if it’s not directly applicable to the project. If the mitigation project involves a building – it’s important to accurately capture the building type such as residential vs. commercial, one story vs multi-story and the lowest floor elevation. A small change in the lowest floor elevation or changing the building type can have a significant impact on cost effectiveness. For a utility hardening projects, we’ll see applications that include the entire population of a town as the population served by the utility, but in looking at the utility layout and the mitigation plan, it’s clear that the water line or electrical line that is being mitigated services a fraction of the total population so accurately calculating the population served is key Finally – and moving the discussion to Recurrence Intervals - we would generally expect the damages to increase as the severity of the event increases. If the BCA shows $5 worth of damages at the 100-year event and $50 at the 10 year without supporting documentation it could indicate a data entry error and issues around Recurrence Intervals are fairly common. Sticking with pitfalls around RIs, Each year we see an application or two that uses the RI as the time between events, rather than the statistical likelihood of the event occurring. Similar events that occurred twice in the last 6 years, are not necessarily 3 year events … a 100-year event can occur in consecutive years. Related to RIs – and if you have the BCA tool calculate RIs based on a damage history this can also be affected by the Analysis Duration. If a number other than the default value is used – documentation needs to be provided. he BCA Reference Guide and Supplement discuss acceptable documentation for adjusting the analysis duration. Finally, if a value other than a FEMA standard value is used anywhere in the BCA– supporting documentation needs to be provided. This allows the reviewer to understand and validate the data entry. The new BCA tool doesn’t require attachments, but they still need to be provided and – as a best practice – including a short narrative supporting the entries, assumptions and data sources allows the reviewer to understand and confirm the data entered in the BCA accurately reflects the project.

This concludes the overview portion and now I’d like to turn things over to Manny Perotin, our Project Technical Lead who will talk about project type specific observations for eight of the project types we see most consistently as well as cover some recommendations.

Manny Perotin

Thank you, Eric, for the introduction. Again, my name is Manny Perotin and I am a Project Technical Lead for CDM Smith and I’ve been the technical lead for our application review process under FEMA’s Hazard Mitigation Technical Assistance Program for the past 4 years. If you have questions during my presentation, please provide them in the Q&A Box on the right and if possible please put the slide # or topic in front of the question. We intentionally recorded this session to allow us to focus on responding to questions while playing the presentation So Eric provided an overview of statistics on applications recommended for further consideration as part of the National Technical Review process and common pitfalls. I am going to focus on pitfalls by project type, starting with Flood Risk Reduction. Next slide Please

A few best practices with flood risk reduction projects include: First and foremost, providing pre and post hydrologic and hydraulic OR H&H modeling with water surface elevations for multiple recurrence intervals as well as estimated and documented lowest floor elevations for structures (or elevation of vulnerable infrastructure like roads). I would equate this to a vulnerability assessment of the watershed, this information is essential to confirming the feasibility of the project. Particularly it helps provide an understanding of the probability of flooding along with the magnitude or depth of those floods. With those depths it is possible to quantify the magnitude of damages in dollars. Second include preliminary designs, ideally at least 30% design, along with a cost estimate. The level of service (or protection, SAY the design is intended to protect to a 50-year level) should be consistent with the scope of work/objective of the project as well as the level of effectiveness assumed in the benefit-cost analysis. And finally include a narrative explaining the benefit-cost analysis and describing the basis for estimating damages or documenting historical damages as well as any other assumptions and outline how documentation is organized. For example, several BCAs are now considering sea-level rise, you should include documentation to basis for estimating sea level rise over the life of the project AND how sea-level rise was incorporated into the design/level of protection.

Some common pitfalls with flood risk reduction projects include no documentation for historical damages, no basis for the loss of function duration OR downtime, and/or no explanation for the recurrence intervals assumed in the analysis. A very common example is historical damages are based on community wide data or articles versus the area specifically benefiting from the project. With respect to recurrence intervals, the unknown frequency calculator within the BCA tool can be used however you must have a minimum of three events over a period of at least ten years. Another common pitfall is lack of documentation for assumptions made in the analysis. For example, a BCA based on estimated damages that has no explanation of how the flood damages were estimated or how the flood depths were used to calculate flood damages were estimated. We often review applications where the after-mitigation damages are inconsistent with level of protection described in the scope of work or the preliminary design. For example, the BCA assumes no after mitigation damages until a 100-year recurrence interval however the design and scope of work are based on a 25-year level of protection. With respect to technical feasibility it is essential to document the project is a stand-alone solution that solves a problem independently or that it constitutes a functional portion of a solution. Some applications include a watershed study or stormwater master plan, indicating the proposed project is identified in the study or master plan but does not clearly explain the project is a stand-alone solution. Finally there is no statement or documentation to address potential up or downstream impacts as part of the flood risk reduction project, in some cases projects specifically indicate that there are up or down stream impacts and state they may consider them during the permitting process but do not include a narrative on potential solutions nor cost to account for implementing them.

Next slide

Now I’m getting into the second of the project areas. For Acquisition and Elevations it is important to properly identify the flood risk, there are a variety of tutorials and resources to help you read a Flood Insurance Rate Map or FIRM if you have not referenced one before. If you are estimating flood risk based on local watershed study be sure to provide the flood hazard information as documentation.

With respect to pre-determined benefits and efficiencies established by FEMA to support evaluating the cost effectiveness of acquisitions and elevations, it is essential you properly apply the conditions in the policy. For example, if you are applying the substantial damage efficiency for acquisitions you must provide a substantial damage determination for each building. If you are applying pre-determined benefits for acquisitions and elevations, you must show the building is in the Special Flood Hazard Area (or SFHA) – this can be based on an effective FIRM, preliminary FIRM, or a Base Level Engineering BLE map. Regardless of type of map, it is critical you show the property location on the map and verify it is within the floodplain. Note, if you have multiple structures in a project where some BCA are based on precalculated benefits while others are based on a complete analysis, you cannot combine benefits across each methodology. For example, if I have a project with 25 elevations and 15 are based on precalculated benefits and 10 are based on a complete analysis, the 15 precalculated benefit structures should be cost effective standalone and the complete analysis for the other 10 should be cost effective as well. Finally, with respect to conducting a complete analysis and using the modeled damages approach in the BCA tool it is essential you apply the correct lowest floor elevation. The BCA tool has built in help menu and instructions on selecting the correct lowest floor elevation depending on the type of building and foundation. There are additional resources related to determining lowest floor elevation on FEMAs benefit cost analysis website as well.

OK so before covering wind retrofit projects, just a reminder If you have questions during my presentation, please provide them in the Q&A Box on the right and please put the slide # or topic in front of the question. Now I will cover wind retrofits projects. Some best practices related to wind retrofits are as follows. First confirming the building envelope like the roof cover, wall covering, and fenestrations often referred to components and cladding along with the structural system or the Main Wind Force Resisting System can resist current basic design wind speeds or whatever the level of protection that is desired by the project Similar to an H&H study for flood risk reduction projects, a best practice is to include a wind vulnerability assessment for the building indicating the components that must be addressed as part of the retrofit. These assessments are normally done by a design professional like an architect or structural engineer. In addition to a vulnerability assessment, ensure the products and materials specified for use in implementing the wind retrofit are rated for the basic wind speeds including windborne debris protection requirements based on the project location. Finally, including scope and budget for inspections while the retrofit is being implemented along with post construction certification to ensure the level of protection desired is met and vulnerabilities were properly addressed is encouraged. You get what you inspect.

With respect to common pitfalls, one is using products that are not specified for use in implementing the wind retrofit are rated for the basic wind speeds OR using products with known vulnerabilities like screens or films. Some screens only assist with reducing debris impact but not wind loads and pressures, films as a retrofit are typically more effective at reducing the risks of blasts than wind protection. Not performing a vulnerability assessment to identify components that need to be addressed before developing and submitting the application. For example, projects that reinforce large bay doors or propose installing shutters over windows without evaluating the conditions of the roof which incurs the greatest wind loads. Finally, a common oversite with non-residential wind retrofits is a lack of documentation to support the loss of function impacts associated with the facility. Typically, this is based on the annual operating budget for the facility or the number of people served by some critical facilities. Note, similar to acquisitions and elevations there are predetermined benefits for residential and non-residential wind retrofits, you are encouraged to consider and evaluate the applicability of this efficiency to your projects.

Moving into wildfire mitigation projects. First and foremost, clearly document the site boundaries for hazardous fuels reduction projects. Some applications state the intent to address XYZ acres but do not state where those acres are. For defensible space measures or ignition resistant construction ensure you identify the proposed benefiting structures. At a minimum identify the neighborhoods and number of structures within the area the project intends to address. Finally ensure scope and activities are eligible and consistent with the FEMA HMA guidance like defensible space measures (perimeter), Ignition-resistant construction (materials), or Hazardous fuels reduction (vegetation management). Ineligible activities include hazardous fuels reduction in excess of 2 miles from structures, irrigation of vegetation to avoid disease or drought-related infestation, and projects for the purchase of fire-related equipment like fire trucks or equipment to accomplish eligible work like chainsaws, chippers.

Next, I’ll focus on energy resiliency, and for the most part, this includes generators. One of the first things you’ll want to focus on is identifying critical functions the project will address along with the capacity needed to power those functions, including the capacity needed to start motor driven products. Secondly, the proposed scope must be a complete solution –the scope AND cost estimate include a transfer switch, fuel storage, and any other equipment needed to properly install the generator. In addition, the generator is properly elevated and in an enclosure to protect it from the elements especially wind borne debris. Finally ensure the application documents a clear basis for the risk…included documentation to support the probability (or estimated recurrence interval for damage events) as well as the exposure of loss of function duration associated with each of the estimated damage events.

Common pitfalls include lack of documentation to support the probability or estimated recurrence interval for damage events. A recommended approach is estimating the recurrence interval based on probability of utility power failure over the 19-year useful life of the proposed project. Applying the formula shown along the bottom of Table 6-1 in the FEMA Coastal Construction Manual, assuming a 1-day outage has a 99% chance of occurring or being exceeded over a 19-year period, it is an estimated 5-year recurrence interval. If you say a 4-day outage has a 33% chance, that equates to a 48-year recurrence interval. You can do that for multiple events and complete your benefit costing. In addition to explaining the estimated probability or recurrence interval of a power outages, it is just as import to document the basis for estimating the loss of function impact including outage duration and economic impact per day of loss of function. Documenting the critical functions along with the basis for identifying the power capacity needed to service those critical functions is needed and often overlooked.

As mentioned in the best practices it is important to document the scope and cost estimate to implement a complete solution including a transfer switch, fuel storage, and any other equipment needed to properly install the generator. If the project includes replacing an existing generator it is important to document the existing conditions and explain how the scope provides an increase level of protection versus simply addressing deferred or future maintenance, rehabilitation, restoration, or replacement of an existing generator. Finally, with respect to residual risk, it is important to estimate potential after mitigation damages. The generator project is not fool proof and there is a limited probability it may not function over the life of the project. So you should include this residual risk in your benefit cost.

Moving on to seismic retrofits. Similar to wind retrofits, a best practice is to include a vulnerability assessment or evaluation report for the building being mitigated. In addition, stating the project will be done in accordance with ASCE 41 and identifying the level of protection desired with the scope of work. Projects done in accordance with ASCE 41 are generally considered technically feasible. Submitting design plans is another best practice and we see this across some, but not all, applications. Those that do provide the plans are likely to be considered technically feasible. Projects with preliminary plans have a high success rate.

Providing documentation to support the loss of function (for example the number of customers served by a utility). For critical facilities, documenting the nearest available alternate location is important and often overlooked. Finally, when the BCA is based on historical damages, including an analysis to support the recurrence intervals is helpful.

With respect to pitfalls, Eric pointed out using the time between events as the basis for a recurrence interval as being incorrect. The recurrence interval is based on annual probability of that magnitude event being equaled or exceeded.

Another pitfall is including the land value in the Building Replacement Value. The modeled damages for buildings are estimated based on the Building Replacement Value so, over-estimating the value with land value can overestimate damages and therefore benefits. Finally, another pitfall for seismic involves assuming joint dual probability like loss of water utility and an uncontrolled fire occurring. Make sure you take this in consideration.

Moving on to safe rooms. One of the most important items to include in a safe room project is stating the project design and construction will comply with FEMA P-361, this includes doors and openings.

It is just as important to provide a conceptual floor plan to allow reviewers to confirm planning requirements for space per person are met as well as operational requirements like emergency power and restrooms. Finally, FEMA P-361 recommends the use of the internal pressure coefficient for partially enclosed buildings be incorporated into the design. Projects that are submitted with these characteristics have a high rate of being recommended for further consideration.

Some common pitfalls with safe room projects include the use of historical damages for safe room, most projects with modeled damages are cost effective, on the other hand safe room projects BCA based on historical damage are less likely to be cost effective. They also tend to have a lot of missing documentation. Ensure you use a half mile travel distance instead of half mile radius, ultimately population should be less than 5 minutes away. Finally, not providing sufficient information for operational requirements like useable area space per person and having sufficient parking.

Moving onto dry flood proofing, I think you are noticing a trend with providing a vulnerability assessment, it is a best practice to provide one for dry floodproofing as well. You want to identify all of the points of entry for water and make sure those points of entry are being addressed in the design. The second thing you want to do is provide documentation for basis for the flood protection level or the design flood elevation. This should be consistent with ASCE 24. And then, utilize/specify tested products that meet the ASCE 25 standard.

Common pitfalls include noncompliance with ASCE 24 (for example you cannot dry floodproof structures in Coastal V Zone or floodway, nor can you dry floodproof residential buildings). Lack of sump pumps to address seepage or lack of emergency power to run those sump pumps is often an issue found. Finally, the scope only addresses doors and overlooks other penetrations such as utility through the building envelope. It is critical to have a vulnerability assessment. I encourage you to reference FEMAs Harvey and Irma MAT Recovery Advisories from 2017 regarding dry floodproofing. The team that was deployed to Houston was able to visit the Texas Medical Center and documented several lessons learned on dry floodproofing.

In summary, encourage you to provide a narrative explaining the benefit-cost analysis and describing the basis for estimating damages or documenting historical damages as well as any other assumptions and outline how documentation is organized. If you have not completed a vulnerability assessment of a building or H&H study for a watershed, consider a Project Scoping application, formerly known as Advance Assistance, to develop the technical information necessary to support the feasibility of the project. Capitalize on efficiency mechanisms, with that said make sure you meet the applicable conditions. Finally, if you’ve previously submitted a project for PDM or FMA, we recommend you review the feedback in the NTR memo and that should help identify the reasons why the project was not recommended for further consideration. This concludes today’s presentation, now we’ll start our Q&A. Thank you.

So we may have to come off, back on and off as we put our answer together. Also note, some questions we may not be able to answer, but we will address them with future information. Hopefully most of you know me or recognize my voice, this is Manny Perotin. Eric Kenney will also be answering. Ryan is on the line with us as well. We will start off with a few questions related to FEMA GO, so Ryan, you want to take Q&A, please?

Thanks. Starting with question number two, question number two from Steve, your question Steve is when will we be able to see the application in FEMA GO?

FEMA GO is ready to go right now. People can start getting there to start working on application development as we speak. I received a user report just the other day of those registered users. There is already 562 registered users and FEMA GO. That is as of yesterday, I think. As of August 26th, there is a lot of folks that are getting registered, so if you are registered already, please register for access to FEMA GO. That is your first step. You should be able to get into FEMA GO and start working on your applications now. If you do have challenges, please contact the helpdesk and they will work through those challenges.

Going to the next question I will take here. Question number eight. I think I already answered that. When will there be, from Jacob, when will the application be completed in FEMA GO. There is nothing in the system now. You should be able to access the application development portion of the system. If you are experiencing technical difficulties, please contact the FEMA GO desk and they will walk you through that.

For, the question about project scoping, that was number 12, I think.

The question about project scoping is whether the fund for project scoping comes out of the state set-aside.

That is a great question, and thank you for submitting it. To answer your question, yes. Project scoping funding does come out of the set-aside, and for tribes submitting initiatives, that is going to be considered part of the tribal set-aside as well and you are limited to $600,000 for that amount. If you are taking a look at the state set-aside, $600,000, you can use a portion of that for product scoping or you can use all that for product scoping, so good question.

Mark asked the question can you divide an example for go-no go mitigation plans. They don't seem to apply, but they are required for NOFO. Our apologies to you because the go no go milestones are really for competitive projects, not for mitigation planning applications. Not for the CNCB community capability and capacity building activities, so those activities such as a mitigation planning, project scoping as well as the building code activities. So, if that is confusing, our apologies. They definitely not necessary for mitigation planning sub applications.

Thanks. Do you want to take question number three from Jennifer, why are acquisition elevations in separate categories?

Sure, thank you for calling attention to that one. So those categories are the categories we create to screen and traffic the application reviews, and so you will see acquisition and elevation as you mentioned, acquisition/elevation and what that means is the application included structures that were being acquired as well as elevated to the project type reflects both of those for our tracking purposes.

I talked with Stephen about future flood damage after a wildfire event and flooding has not previously occurred, do H&H studies provide adequate support for the application?

I think this will help touch on Benji's question as well about general resources for wildfire. So in general, at H&H study is what we would expect to see for the benefit cost analysis. I think it is important to mention that the increased risk of flooding post wildfire is a shorter-term risk. The vegetation is expected to regrow in a time period that is often less than the project life so it is important to capture that increased risk for the period that that risk is higher. The other thing that is worth mentioning is if the mitigation action is something that is intended to address the higher risk, there is a short section, FEMA.gov/grants/mitigation/fire that discusses some of the benefits available for the wildfire product. And those are the real resources that are available in addition to the HMA guidance for the wildfire mitigation project type.

Thanks. So, we had another question, trying to screen the chat once. Jennifer asked if each application can only support one mitigation activity from earlier trainings, and you can have a mixture of multiple activities , meaning you can have an application that addresses 10 homes and five of those could be acquisitions and five can be elevations. Just to add on one thing, that is if you are looking at having a mitigation reconstruction project where you are looking at demolishing a structure and building a new code compliant structure in the same footprint, those activities have to be on their own in their own sub applications. That specific activity can't be merged with any other activities. It is the only exception to the rule Manny set a second ago. Other activities can be mixed as much as you want. You can put acquisition with a safe room project, you can put it with the wind retrofit products, you just can't merge reconstruction activity with any other activity. Thanks.

[Indiscernible]

While you are trying something for a second, we had some questions about the technical criteria and what is reviewable in the FEMA GO system. I would like to, I can't remember who submitted the question, but I would like to let you know that there are a number of different program support materials out there on www.FEMA.gov/BRIC . If you work your way through the first page on the BRIC webpage, you will see a link for program support materials. If you click on that, you will go to all of the training program support materials, and there are two that you should look at. One is technical evaluation criteria and the other one is for qualitative criteria. On the technical criteria, a lot of the questions that are being asked in that technical criteria are going to be a field in FEMA GO, which asks you what your rating is, what , if you have a building code that has been adopted, and that is where you will enter that information. Some of that information is going to be for the applicant, typically the state, and then some information is going to be required for the local community. Look at the program support material and it will walk you through a lot of that information. If you take a look at the qualitative program support material for the qualitative evaluation, you will see that we say in each part of the program support material where you would enter that information in, there will be a lot of it will probably be in the scope of work section of the application. Take a look at that program support material. I think that would offer you a lot of information, and I think that will probably help you a lot as you are entering and developing your application. Thanks.

I think I was talking about precalculated benefits outside of the floodplain. The first step I would say, the structures below the BSD, but outside the flood plains, for whatever the reason, they are still applicable.

[ Indiscernible ]

Manny, you are still coming through pretty choppy.

 [ Indiscernible ] within five minutes, excuse me. That can also depend on the road network nearby.

Okay, so while Manny is resetting his audio, there are a couple that I can address. Starting at the bottom, there have been a couple around PCAs in general. So Hunter asked if we are using version 5.3,, so the answer there is we have moved to version 6.0 and that is the required format going forward. Then regarding general help for understanding and using the BCA toolkit , I think on your screen right now, you will see the BCA helpline where you can either email or call with specific questions, and then you can search for FEMA BCA on any of your favorite search engines. You will come up with the helpline and the webpage that has the reference guide, the supplement as well as some other BCA analogies. That might be useful for your applications.

 The last question that Manny Perotin was touching on was the tornado safe room travel question. The goal is to make sure that the occupants can reach that safe room with the five-minute warning period. And half mile radius is what a person walking, the distance they could be expected to make it in five minutes, so if the people are walking, that is the half mile radius. Is people are driving and they come from farther away, that five minute travel time is important, as well as the necessary infrastructure around the say from Excel to make sure they can leave their vehicles, and make it into the safe room, all within the five minute warning time.

I think I am back. I will try to take a few more.

That sounds clear.

Thanks. I know there was a question. I am trying to find it now related to tornado safe room standards, and hurricane shelter standards, and in FEMA's publications, it is FEMA publication 361 or FEMA 361 is the standard. You want to reference for that and also there is an industry standard or building code standards, the international code Council publication number 500. That is FEMA P361, and ICC 500 that you want to reference for those. Both of those are also referenced in the current version of the HMA guides. Excuse me, FEMA's hazard mitigation or HMA guide. There was also a question regarding recurrence intervals and let me see if I can find it here. The question about where the best source for recurrence intervals is, I don't think we got this one yet. I would say for flood event, flood insurance study for the area, potentially hydrology and hydraulics or the H&H study. In some cases, you can use USGS or NOAA data to help facilitate recurrence interval. Maybe you have a local stormwater management government body or local water management District, all those might be different ways of finding data to support estimating a flood event. For winds, tornadoes, seismic and wildfire, those are built into the software. For wind, you went to see if there is better data out there within the software, that is similar to the recurrence interval for wind, similar to what is available in FEMA's software. If you want to look for additional information or wind, you can look at the basic wind speed maps. Those have wind speeds for various recurrence intervals, I those maps are used for designing residential construction, commercial construction and things of that nature and another resource for finding that, sorry, ASC American society civil engineer, seven is the number of the publication, every way to look at those basic wind speeds map, in a very user-friendly way is to go to what is called the ATC or Applied Technology Council . Applied technology Council. You just search for Applied Technology Council or the hazard map. You will be able to go to a website. You can put in an address, click on wind and it will give you the wind speeds at various recurrence intervals for the hazard. I think that question came from Jennifer. That will give you different types of ways of finding that data for flood, wind, and if you other hazards.

I touch on a couple as you are looking for the asked one. Christina asked about other application pitfalls not related to technical considerations, and the focus of these is the technical sepals. The other things that come into play are prioritization and funding limits, and somebody asked a question about what happened if the NTR comment, this was FEMA technically feasible and cost effective, but it was not selected. Any additional feedback on why it was not selected? So I touched on this at the beginning , prioritization and funding limits come into play, and if you have kind of application specific questions , you know, I would encourage you to either reach back to your state or your region and then there was a similar question regarding a tribal submitted application that was not selected and looking for feedback on what the concerns were there, so then assuming you submitted as an applicant, I would recommend reaching back to your original point of contact to get a copy of that memo.

Thanks. This is Ryan. I have got a couple ones I take on. This is number 28 in case you are curious, from FEMA, for all mitigation products from local government, with those automatically be under the petition? My advice would be the same as Eric gave, and that is if you are from a local community, I would work with your state hazard mitigation officer. The activities that can be funded under the state set-aside include project scoping, includes building code activities, mitigation planning, and can also include mitigation projects. Keep in mind that that set-aside is only $600,000 and the state may have its own plan for what they want to do with that $600,000, so please contact the state and see what the state would like to prioritize with that small amount of funding.

There is another question, also, number 26 from Kate, as a municipality, do we apply through FEMA GO or does each state have an application process deadline? All of the sub applications must be developed in FEMA go and must then be submitted to the state and then the state is going to package all those applications and submit them to FEMA, so you should be developing your applications in the FEMA go system. Again, contact your mitigation officer to see if they have any process a deviation. A lot of states will be requesting letters of intent from communities, as we speak. Some states are already putting on their state webpages how they want to facilitate the development of applications within their state, so your primary point of contact for this train it as well as a flood mitigation system program are really the state hazard mitigation officers. In a few states, the flood mitigation assistance program is managed out of another office other than emergency management. I think there is another office outside the state of Arkansas. Try to figure out who your main point of contact is in the next week to find out exactly who you are going to go to for your questions. I will turn it over to Eric and Manny.

Thanks. I will take the next couple here. So this is number 34 coming from Kevin, a follow-up question to the recurrence interval question I was answering, what are some method to determine intervals of a rain event. I would say some resources to come back to FEMA flood insurance study and, sorry, a FEMA flood insurance study in the USGA data. NOAA Atlas 1400 has additional support information available to you, and then there is also a BCA reference guide, or the flood risk reduction technical review job aid that is available. I would reference both of those. That is the BCA reference guide, or the flood risk reduction technical review supplemental job aid. Those should be available on FEMA's website, if you do a search. You should come across both of those to help you with those occurrence intervals.

The question from Amy, this is number 17 , our city, we normally do not get into eligibility, but this one is relatively straightforward, but contemplating applying for sewer-VAC truck transfer are these types of products a piece of equipment like that is not something that is normally funded under the hazard mitigation assistance program. I would encourage you to coordinate or check with your state on that. Generally speaking, that is not going to meet the program requirements here.

Number 23 from Stacy, the question is will you be pushing out case studies to provide concrete examples of success to recipients, and number one, we will be pushing out these materials from a pitfall standpoint to hopefully get you some ideas in terms of best practices and things to avoid . I don't have a specific product to showcase, but I will say that there is a mitigation portfolio that was recently released as part of this program. I think it was in the last one of the sessions in late July. Maybe it was earlier, in August, but I would offer that is probably a good resource to look at in terms of ideas and examples of projects. Again, that is the mitigation portfolio and that was released in late July or early August. I think you said you would take number 21.

Sure. And so they asked for the BCA, is there preference to begin the appraisal from an independent appraiser, and there is not. We consider them both equally credible. One thing to keep in mind is depending on the usage, you know if you are looking at an acquisition, you need the full value of the property and the structure, but if you are looking at something like the replacement value and you are using that to help inform that, we are just focused on the structure itself, not the property as well. Would you repeat your answer on the energy resiliency projects, I think it was micro grades and battery storage. I think you were cracking up a little bit.

So there was a question, I believe it talked about battery storage, and I can't remember, but I will try and find that specific example. Energy resiliency projects, renewable battery storage suitable projects for energy resilience, and for the most part, most of the projects we see right now are generators and again, these are all tied towards critical facilities. If you can support and show that your battery storage is a suitable to support the capacity needed to continue running those critical functions for the duration that power outages are going to potentially occur at your facility , at your critical facility, then we would consider that technically feasible instead of having a generator, you would have one of these other measures, but it has got to provide the necessary capacity to support those critical functions and on top of that, different sides the technical feasibility, you have to show it is cost-effective.

So I can touch on number 22 from David regarding a drought negation projects competitive to the other types of products presented. I think the best answer is, I know some of the recent webinars have presented scoring criteria on how the project applications are going to be reviewed and ranked, so if you compare the benefits and the focus of that drought mitigation project and it compares favorably to those criteria, I think it would be on the competitive side. It depends on what else comes, but I think comparing your application in general to the BRIC criteria is probably the best practice to figure out how competitive it is going to be when things move for selection.

All right. I will try a question from Timothy. This is number 38. Chen for a combination of a few different things. Number one, there is a four-page fact sheet on FEMA's network. If you search for FEMA fact sheet on flood plain and stream restoration, I encourage you to look at this. It covers some of the basic expectations along with a short section on project benefits and cost effectiveness. I would say it focuses on the flood mitigation and erosion control benefits associated with the project. We are trying to reduce the damages within that stream, if you would, if it is continuously being eroded and having to be repaired along with any infrastructure including roads and things of that nature and building that would benefit from the stream restoration and then finally there may be some environmental methods that can be considered and those are also taken into consideration in the analysis.

I can address one regarding the BRIC funding. Does the project have to fit in one of the categories described during the webinar? What if it does not fit within the flood risk mitigation category. So we focus this webinar on the eight project types we see the most of, so this is not an exhaustive list of eligible project types, but again, I would encourage you to compare what you are looking to do with some of the BRIC material that has been made available over the last couple months, to make sure that your application is aligned with something that is considered eligible in those documents.

There is a question about critical infrastructure, specifically wastewater treatment plants. Do you have project examples, BCA for us to access? Off the top of my head, I can't get one in particular, but I would say in terms of measures that we have seen done for these, two things come to mind. We have seen infrastructure built around it to protect it. Also, we have seen actions where we elevate key equipment throughout the wastewater treatment plant. In essence, water is going to enter the plant, but the key equipment is elevated. I would say from a benefit cost analysis standpoint , the two components primarily are identifying the probability of flooding and that ties back to using flood insurance information from the flood insurance study to estimate the recurrence intervals in the probability of water entering the plant and the depth of water associated with that, and then outside of identifying the probability of the occurrence, to identify the amount of damage that is going to occur. These damages can be physical to the plant, so all the equipment has to be repaired, or it can also include the loss of function, so the loss of function includes , there is actually a standard value in the software and that is based on the population served, so if the plant has let's say 3000 customers and 3000 customers are paying customers , you want to make sure that you expand that based on the number of people per household. Those are some things to consider in the benefit cost analysis. Nothing comes off the top of my head to discuss the specific example. This could see some idea of the type of things we have seen and approaches you can take for looking at the benefit cost analysis. I will do a quick search right now.

There was a question about the mitigation portfolio, and there has been some recent updates. Hey. This is Ryan. The mitigation portfolio is pretty simple to find. Go to www.FEMA .gov/ BRIC and it will be on the front page and I am pulling it up right now as I am talking with you, so that I am not a liar. If you look at the first place you land when you type in what I just directed it is almost right at the top. Mitigation action portfolio, click on the blue text and then a document that is approximately 107 pages will show up, and this document shows a lot of different case studies, if you will from different successful mitigation efforts from , it is organized -- it is organized by hazard, starting by all hazards followed by coastal flooding followed by drought, earthquakes, hurricanes, and land flooding, landslides, tornadoes, tsunamis, wildfires, and winter storms. So we did our best to try to get a good cross-section of what mitigation looks like for many different hazards. It is one of the first documents of its kind, and it is something we are very proud of and the fact that does give some really good examples of projects of what medication looks like in the field. So, take a look at it. If you are from a community that has a project that you would like to have added to that, contact, if you are from a state contact your FEMA regional office, and if you are from a local community contact your SMO, ask them to submit to FEMA an example on your behalf. We would love to see additional great projects added to the mitigation action portfolio sometime in the future.

Thank you. Just one other thing I noticed. I am not sure, on the left-hand side, you concede to download the action portfolio, hopefully you see that on your screens if you are not in full screen mode. It is on the technical support portion of the webinar interface. I have a question here from MJ. If a facility has received public assistance and mitigation, I am assuming that is existence, money for a disaster, can we apply for additional mitigation for additional measures. I would say there is nothing that precludes it. You will just have to meet all the other requirements for good has to be feasible in this case, I am guessing it is going to be a portion of the complete solution or it has to be a standalone solution, maybe APA is addressing one hazard or PA is addressing flood hazard and you want to address land, again, that might be an example of where you can potentially apply under BRIC. It has to be standalone or part of a complete solution. It has to be technically feasible and cost-effective. I think you said you had one you are ready to take.

So, Jenny asked how do other grant incentives decrease cost-effective analysis for the BCA analysis is based on the total project cost. So even if, if the federal share is being decreased because of another funding source, the full project cost needs to be considered in the BCA.

I am scrolling through some more questions here. Please give us another moment here.

While Manny is looking for more technical questions, there were a few more questions about eligibility, and an easy one , we want to focus this webinar on technical feedback, so if you have questions about eligibility , this is another time when I would encourage you to either reach back or reach up to your state, or if you are an advocate, reach to the region, and get some specific guidance is it is not clear. As well as the associated direct resource material.

I saw a question from Jenny. Is there a source for recurrence intervals on seismic or wildfire ovens? The first step on that, it is built into the software. So based on the location of your project, the software will tell you the estimated recurrence interval is for a certain magnitude of an event. That Applied Technology Council website also not only does it have information for wind, and has additional information for size , and then on the welfare side, same thing, the software, if you do a wildfire, the software does have some basic recurrence intervals . Those will be estimated. They are not national. They cover several parts of the country, but not just one for the whole country, it applies certain recurrence intervals based on the project location, and I believe it might be some information, there might be some reports out there, some data from forestry might have additional information to help you for the most part. Most of the wildfires we have seen have come in from information, or with recurrence intervals built into the software.

Ryan, I have a question for you from Amy that you might be able to answer quickly. It is 31. Phase projects in BRIC , would phase 1 need to include a PCA, or with the feasibility study result in a proposed project and phase 2 would be the project, and what kind of cost estimate needs to be submitted for the phase 2 work when you are submitting a sub application?

That is a very good question. I am going to send back over to our team and see if we can possibly get an FAQ developed for that. That is a little bit more in depth than I am prepared to speak to on this webinar. Sorry to Amy who asked the question.

We see a couple about the phasing BRIC projects. That will be one that people will be interested in seeing. I am just looking to see if there are any other questions that we are able to address that we have not yet.

I have scrolled through. I think most of the ones related to technical standards, BCA, I think we have gotten to some of the basic eligibility ones and also some of the basic FEMA GO questions. I think with that, I know there is a few questions we took as a follow-up, including the question here at the end to make sure we take it as an action item and properly address, but I think , actually I saw one, can you state what a project scoping application is. If you have been around these programs before, it is ultimately an advanced assistance application, if you have heard that before. It helps the sub applicant with funding to help provide the technical body of information needed to support an application that can be approved. Technical feasibility along with benefit cost analysis and maybe things of that nature.

 I got an update from our FEMA GO folks over at FEMA, and we wanted to let you guys know that they are going to be posting information regarding FEMA go videos as well as user manuals on the FEMA GO webpage. If you simply type in FEMA or FEMA grants outcomes, you will find the FEMA GO up Sage and there is a lot of information from how do you apply , where do you go for additional help, and then there will be a lot of different, as my FEMA go folks had said just a second ago, there is a lot of other resources being placed on that website in the near future. So hold tight for a little bit longer, but they should be up I think probably within the next week or so. Thank you.

I think we have covered most of the questions. If you can start up the survey, that will be one last part of the webinar here. We appreciate everybody's time this afternoon. I know we have a few follow-up questions to address in the chat, specifically the project piece. We appreciate your time. Hopefully you found it worth your time. We were able to answer some of your basic questions and you took some takeaways in terms of best practices and things to avoid as you are preparing your applications moving forward. Thank you and unless there is anything else, I think that concludes this afternoon's webinar.

[ Event concluded ]