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Hi, everyone. Welcome to today's webinar. Thank you for joining us . We are going to get started in about one more minute.

All right, everybody. Thank you again and welcome to today's webinar . Today we are going to be talking about community resiliency and best practices. Before we get started I am going to turn it over to Jo-Shani Clemmons who is going to go over some general housekeeping rules . And explanations to help you guys get involved in this webinar if you have questions. I turn it over to you.

Thank you for good afternoon, guys. My name is Jo-Shani, what it over some housekeeping things with you on case you have not seen this Adobe platform before. Welcome. I will only discuss these four boxes on the side, because I think a presentation box and the caption box is self-explanatory. I am looking at the attended box where you all are housed. There is a click to select email box. You would click on that survey muggy link and it will take you to survey muggy to complete your level I evaluation. If you guys forget, because of this wonderful information that is being shared today, you will get an email tomorrow morning just to remind you. Feedback below is a click to select file. And that is where this presentation is housed for you guys. All you would do is click on where you see PDF sustainable and resilient communities. What you do there, the download files button will appear and it will allow you to download the presentation and it will allow you to view, save, and or print. The last box, type your questions here. If you're having any technical issues or if you are having any comments, concerns, or questions about the content being presented today you will enter your question or your comment or your issue into that box and we will see it and if it is technical I will troubleshoot immediately. If it has something to do with the content or presenters will inform you of how your questions will be addressed. Again, thank you for registering and participating in our event today. Have a great meeting, guys.

Thank you so much for that. Just for everybody [Indiscernible - low volume] we will plan to take questions at the end and some of our presenters might answer you guys throughout the presentation if possible . Some of your questions we are going to say before the end to address with everybody. With that I will turn it over to play with HUD to get this presentation moving and started.

Thank you, Michaela. Hi, everyone. I am a community department and planning specialist at HUD in the disaster recovery and special issues division. Today's presentation is with our partners over at ETA focused

on solid waste management . And before we headed over to our team at ETA I want to go through some of the HUD instructions and information. So,

the objectives for this presentation is to learn what constitutes solid waste and solid waste management activities. To get a better -- I'm sorry, there is some movement on the presentation side. Okay. To get a better understanding of the criteria to determine if it is eligible under CDBG-DR or CDG be MIT funds. And to gain effective strategies to avoid complement common mistakes when lamenting a solid waste related project. Our speakers to their myself as well as Alyssa Capps and Paul Baricelli. We also have several other members of the EPA team that are available at the end to answer any questions that you have, technical regarding solid waste or, in general, around activities that you are considering to include with solid waste. So, an overview of the HUD requirements, the purpose for CDBG-DR as we mentioned in our previous webinars, we provide some funds to grantees and provide decent housing, a suitable living in Parma, extending economic opportunities . Primarily for low and moderate income persons. And our funds must be CDBG eligible activity. They must meet the national to objective. And they must address a direct or indirect impact from the major disaster in a presidentially declared County. . I want to now go in and just as a primer give some ideas around solid waste and how you might be interacting with it with your CDBG DR programs. . So, under the housing activities we have acquisitions, demolitions, rehabilitation, and new construction . And some of the ways programs that might have been created by grantees are multifamily, affordable housing, single-family, rehabilitation programs , or our buyout programs. All of those activities have potential solid waste costs. Things that are considered solid waste and those activities are recycling, construction debris, and even contractor debris removal. Another consideration for 2017, 2018, and 2019 grantees is in your Federal Register notice you will find that a green building standard must be met for new construction and replacement of substantially damaged residential buildings. Under many of these green building standards there are several different ways to meet that. The disposition of construction materials is considered solid waste.. Another way you might encounter solid waste is not substantially damaged residential buildings according to the federal Mr. notice will follow the guidelines in the HUD CPD green building retrofit checklist. . For CDG be just DR economic debt limit activities you may be creating programs to create or retain jobs . Specifically, creating a workforce training program while housing trades and construction trades are common workforce training programs under CDBG-DR there is a potential to create a solid waste trades workforce training program.

Also, forever structured activities you may undertake programs for public facility improvement or public improvement. And areas that deal with solid waste under those activities are water and sewage treatment plants, power and electrical grid work as well as solid waste management facilities. Another thing to note for 2017 and 2018 and 2019 grantees under Federal Register notice is that disaster preparedness and mitigation measures should be integrated into the structure activities. Including how they will promote committee level and/or regional post-disaster recovery mitigation planning. You may be considering how to manage solid waste after your disaster in this context. . We also have grantees who received

CDBG mitigation funds. And to go through the CDBG mitigation purposes these are little different in that they represent a unique and significant opportunity for grantees to give the assistance in areas impacted by recent disasters to carry out strategic and high impact activities focusing on mitigating disaster risks and reducing future losses. For these programs they must meet the definition of a mitigation activity. They must address current and future risks as identified on the grantee mitigation needs assessment of most impacted and distressed areas. They must be a CDG be eligible activity. There also must meet a national objective. . Another thing to consider for transfer mix purpose is the funds are used to support and structure projects, housing activities, public services, economic department, and disaster preparedness and planning efforts. They are meant to increase [Indiscernible] or reduce and limit risks. 50% of CDBG-MIT funds must be used to benefit low to moderate income persons. And a little bit different than the CDBG-DR that are registered notices. You'll notice in your CDBG-MIT notice that green building standards are only recommended. Not required. Lastly, there is a specific reference to solid waste in the CDBG-MIT federal register notice under in the structure, under the list of potential activities that you can take for him structure projects and activities. Summarizing it after the disaster , the process of disaster debris and solid waste can become overwhelming due to the damage or increased volume of processing. Mitigation programs could address that identified risk if the structure activities could include solid waste facility improvements and planning activities could include developing risk reduction plans, which can help with continuity of operations and solid waste management. . Great. That concludes the HUD portion of this webinar. Now I want to handed over to the EPA team for their presentation just as a quick reminder, if you have questions please type them into the chat. We have a team at EPA and Michaela and myself at HUD to answer any questions that come up with that I will handed over to EPA.

Hello. Thank you, Clay, and everyone at HUD for having us here to speak with everyone today on sustainable and resilient communities through solid waste investment and best practices after a disaster. Before I get started I just want to bring your attention to the disclaimer on the screen. The views expressed in the presentation are those of the presenters and do not necessarily represent the views or policies of the U.S. environment protection agency. Today's presentation will discuss the eligibility of solid waste projects funded through the community development block grants, the CDBG-MIT grants and best practices for solid waste management to protect human health and the environment, to make communities economically stronger, more sustainable, and resilient. But first, I would like to provide you with some background on what is a solid waste and debris and wife planning for solid waste and debris is so important. Solid waste generally means any garbage or refuse

resulting from industrial, commercial, mining, and agricultural operations, and from community activities. Everything we do or nearly everything we do generates some kind of solid waste. On the other hand, debris generally means the material and waste streams resulting from a natural disaster. Waste is something that gets disposed of in a

landfill. Material can be reused as is or be recycled into something else. The purposes of management and planning, debris is too broad of a term of. The more debris can be broken down into individual streams the more management options become available for the debris, including reuse and recycling. As I just mentioned, debris is the material and waste streams resulting from a natural disaster. Most debris streams can either be material or waste. The decision on whether a particular debris stream is material or waste in a specific committee can be made prior to a natural disaster and documented in a preincident debris management plan. The more planning that is done before a disaster the more likely the debris will be segregated into different debris streams and able to be managed as material. Planning provides the community with the opportunity to assess the capability of their existing solid waste infrastructure and they can [Indiscernible] or find alternative options if necessary. A community goal should be to try to manage the debris as sustainably as possible. To increase sustainability a community can increase the amount of debris that is managed of material and wastes. Some debris streams due to their volumes were due to limited available capacities at waste management facilities may need to be managed as both materials and waste. It does not have to be an all or nothing approach for each debris stream. Some debris streams may need to be managed solely as waste like medical waste and co-mingled debris. Commingled debris is a mixture of many debris types, such as construction and demolition debris, vegetative debris, household hazardous waste, and building content. Commingled debris would likely have to be landfilled. Therefore, it is really important for our communities to separate commingled debris into individual debris streams as much as possible. This allows for different management strategies, such as reuse, recycling, and composting to be applied to different debris streams. This diagram, this visual on the screen, is going to look unique for each community. With the actions you take before, during, and after a disaster you decide how it will look.

You can see the range of debris streams that communities may have to manage after a natural disaster. There may be many others, depending on the characteristics of your community. To mitigate the negative impacts of debris the debris should be segregated as much as possible even the categories on this screen can be broken down further. For example, construction and demolition debris can be broken down further into metals, bricks, concrete, lumber, and asphalt shingles. Also, your system , your solid waste system, should be made more robust so it can handle these debris streams preferably as materials. Your solid waste systems and every structure should be developed to match the debris used that will be generated by a disaster. And regenerated by natural disasters can cause many challenges. These are just some of the challenges that communities may face after a natural disaster. Preincident planning can help with these challenges. For example, there may be a larger quantity of debris. The amount of debris generated may be greater than the amount of waste or debris many communities typically handle in a year that may overwhelm community resources and waste management facilities. By planning before and after a disaster that occurs communities can forecast how much debris may be generated and identify additional waste management facilities and other resources that may be needed to handle the increased volume of debris. Also, there may be a wider variety of debris . A natural disaster may generate

a broad range of debris streams, including ammunition, animal carcasses, construction demolition debris, vegetative debris, and light goods. Each of these debris streams may require a different management strategy where they should have different management strategies. Preincident planning can include determining which debris streams may be generated in the community and what requirements may apply to those specific debris streams. There also might be a wider area of impact from the disaster. A natural disaster may impact an extremely large area. For example, areas

in several states. Multiple regulatory jurisdictions may then be involved with varying approaches to waste management. All affected jurisdictions may be competing for the same resources. Before a natural disaster occurs a community can identify and select waste management facilities and contractors that can be activated during this disaster. A community also may want to create memorandums of understanding with neighboring communities on resources for use during a disaster.

Another challenge that may result is a change in public perception.

[Indiscernible] of the disaster due to its nature or size may result in communities resisting the transportation of debris through their neighborhoods. For example, too many trucks on neighborhood roads. Or the treatment or disposal of generated debris in their local facilities, such as the landfills. And these can include waste that would otherwise be managed at those facilities under normal conditions .

Communities can develop a community communications outreach plan and begin implement it before a disaster occurs. There are other challenges that may be caused by a disaster but there may be insufficient debris management capacity to handle surges in necessary recycling, treatment, and disposal of debris. There may be greater chances of local debris management facilities being impacted by the disaster resulting in a possible decrease in existing capacity for generated debris and reduction of available debris management options . There also might be a greater risk of releases from facilities and sites that store chemicals, such as industrial facilities or Superfund sites and Brownfields. That can contaminate debris. Maries can take actions for a disaster to mitigate these challenges as well. Debris from disasters can impact communities in other ways. It costs a lot to manage debris that is generated. As you can see, debris removal is the third-largest cost across the FEMA emergency response work. Debris can also block roads that are needed by emergency vehicles and can block important the structure like hospitals. Debris can also threaten health and environment. There are even more socioeconomic and environmental impacts that Tabriz have on committees, including soil, waste, and air pollution and promoting illegal dumping and burning. And these impacts show the importance of removing debris as fast as possible from a community with limited cost with preincident planning, which preincident planning can help with. Removing the debris is an important sign of recovery

that residents and businesses will see and recovery is not complete until all debris is removed and managed. Debris management is more than just the moving of debris from neighborhoods and sending it to a facility. As you can see from the slide, debris management concludes -- includes

pasteurization, packaging, [Indiscernible], reuse, recycling, treatment, and disposal as well as other activities. The good news is

that committees can begin planning for all of these activities before a disaster occurs. Helping not only with managing disaster debris, but also with improving day-to-day solid waste activities. Paul will talk more about some of these activities in more detail later in the presentation. EPA developed the planning for natural disaster debris guidance or PMDD to help communities plan for and manage debris for natural disasters, including hurricanes, earthquakes, tornadoes, volcanoes, floods, wildfires, and winter storms. Planning for a natural disaster debris is very important. It explains why planning is important and help planning and documenting that planning into a debris management plan can help with the response and recovery to a disaster. For example, planning saves valuable time and resources during a disaster , ensures a maximum recovery of materials, allows for more efficient and effective waste management decision-making during a disaster, and it can boost the community resiliency resulting in a quicker and less costly recovery to a stronger post disaster state. A debris management plan helps the community know where they are now and helps the community get to where they want to go. The PNDD also provides information, case studies, and resources to assist committees with the preincident planning. I want to emphasize

that the time and effort you put into planning does make a large impact on the response and recovery. This is another tool that EPA has . It is the disaster debris recovery tool. This will can help you identify places to send debris for its recovery or disposal. Especially, if the instructor in your community is damaged from a disaster or has limited capacity. I have touched upon how disaster debris can challenge and negatively impact communities and how planning can help mitigate these impacts. Now I will talk about many of the benefits mitigation can provide to a community. Having resilient solid waste and for structure and sustainable materials management strategies can help a committee recover faster, which encourages residents and businesses to stay in the area helping to reestablish community bonds. It helps the community be stronger and stay intact. Also, these strategies can help community identify the harmful materials in their community, so that when a disaster happens the community contains less harmful materials that can be released, minimizing hazardous debris and possible contamination. The strategies also can help communities and generate less debris. Less debris means spending less money on cleanup and on debris management. In my opinion, this is the most important one . With less debris everything else becomes easier. You don't have to make the decision if something is material or waste, it is made for you, pretty much, because everything

remains a material and remains in use. Also the strategies can help a community use your resources to rebuild resulting in fewer emergency response and disaster recovery costs. There are stronger and more resilient buildings in a committee as a result. In summary, solid waste can generally be thought of as what is generated by a community on a day-to-day basis. It is predictable in both quantity and composition week after week. Debris can generally be thought of as what is generated as a result of a natural disaster. While planning can help determine what that debris will look like and how much debris may be generated the exact quantity and composition are dependent on the scale and type of natural disaster. Because solid waste and disaster debris contain many of the same materials and waste streams improving the management

of one helps the other. A strong resilient solid waste infrastructure means having the ability to manage more debris as materials, more quickly . And planning for natural disaster debris provides an opportunity to assess and make improvements to solid waste infrastructure. Of the rest of this presentation will go into more detail on how investing in planning and structure , housing, and economic development can help prevent or reduce the negative impacts of solid waste and debris before and after a disaster and now I will pass it on to Paul.

Thank you. Thank you, everyone

for joining today. So far we have talked about what is generally solid waste and debris, the challenges they can represent to communities, and the various opportunities and benefits when we mitigate and address those challenges through disaster planning and investments. Following the waste management [Indiscernible] is one of the best practices that will help your decision-making as you develop CDBG-DR and CDBG-MIT programs to support solid waste and disaster debris activities. The waste management hierarchy shows the various strategies from most to least . The hierarchy

-- ASCII to sustainable material management of solid waste and debris. Therefore, we want to develop programs that follow the hierarchy from the most desirable option to the least desirable option. That is the ideal. However, impacts from a disaster are unpredictable. Despite your best efforts to follow the hierarchy you may find communities with urgent needs and treatment and disposal rather than energy recovery, for example. Most important thing is to identify unmet needs in urinalysis, to determine where is your community in each one of the management strategies in the hierarchy and go from there.

Source reduction and reuse, recycling and composting, energy recovery, treatment and disposal can be conducted simultaneously. Considering the waste management hierarchy in your program develop and process will help create programs that will help the reduction of debris resulting from disasters. The most desirable option

is reduction and reuse and recycling and composting activities. These investments, but are not limited to, if the structure that facilitates the recovery and processing of materials for reuse. We mentioned earlier that you decide whether debris resulting from a disaster turns into a material or waste . A strong if a structure system that includes material recovery facilities and composting facilities will support and limitation of recycling, composting practices. Not only will it help to handle surges of materials after a disaster, but also will help the community in their day-to-day operations. In the beginning of the webinar we mentioned another view of [Indiscernible] interacting with solid waste and disaster debris activities. I will share an expanded description of possible solid waste and disaster debris activities that could be aligned with how CDBG-DR and these activities. First of all, you want to assess the solid waste of a structure in your community to help develop a tailored plan for solid waste management before, during, and after disasters. A robust solid waste and the structure will provide better services to your community . Assessor solid waste of a structure prior and after a disaster and identify the unmet needs in urinalysis. We talked a moment ago about

infrastructure supporting recycling and composting practices. Let's talk now about average structures that support energy recovery and treatment and disposal included in the waste management hierarchy. The purpose of a landfill is to manage waste and to protect the environment from contaminants. This contaminants may be present in the solid waste exposed at the facility. Within a landfill you will find various components, such as landfill liner, collection and treatment systems, and even methane gas recovery equipment. You want to include all landfill components in your unmet needs assessment to determine if the facility is operating well. And if it is in need of any improvements. Another infrastructure that supports treatment and disposal and energy recovery strategies are waste to energy facilities. Waste to energy facilities convert nonrecyclable waste materials into electricity. The benefits of this technology include stabilization of the electrical grid, reduction of energy costs, and [Indiscernible] investments on in the structure that support the hierarchy energy recovery and treatment and disposal strategy will minimize hazardous debris and possible contamination from daily operations and after a disaster. Additional sites supporting solid waste and debris management include transfer stations, community drop-off centers, and temporary debris sites.

Transfer stations are building or processing sites for garbage trucks to deposit waste and materials temporarily. In short, it is consolidation of segregated materials and or solid waste prior to transfer to a processing disposable developer community drop-off centers are part of the materials and waste collection system in communities. These are sites where community members can bring their materials to a specific location with proper safety measures. For day-to-day operations and after disasters community drop-off centers are very valuable. Ask yourself how many times you have looked for a place to bring unused batteries and electronics. Well, that could be a community drop-off center after a disaster , people may be looking where to drop their electronics that have been damaged by floods or landslides. Community drop-off centers can help on that. Temporary debris sites are locations established in the affected areas that cannot take disaster related debris from an existing collection point. Remember, disaster can generate more debris than what a community normally handles. Temporary debris sites may be needed to manage surges in materials . These sites require local permits , so including the pre-establishment of temporary debris sites in your disaster debris planning will support a rapid response. And disaster debris planning is one of the various activities that interact with CDBG-DR and CDBG-MIT activities. It's important to develop plans and lamenting mitigation measures to prevent solid waste integration and contamination resulting from a disaster . Other examples of planning activities related to solid waste and disaster debris include updating building codes to incorporate [Indiscernible] structures. Structures with resiliency measures are debris waiting to happen. By expanding the useful lifetime of a building you are reducing the amount of debris that will need to be managed after a disaster. Planning can help way which buildings have reached the end of their useful lifetimes and which buildings can have their lifetime expanded through improvements. You also want to develop programs that help communities identify abandoned buildings and other type of buildings, which deconstruction can reduce the risk of them becoming debris. You

also want to plan the developed of a tailored community outreach and allocation program to promote waste production , waste reduction best practices. You may have questions about if it is best through social media, best through email , is it best to implement a location to a recycling this will be. What is it about the committee want to impact? Your planning exercise can help respond to these questions and other questions. The CDBG-DR entry CDBG-MIT can help with these and more. When it comes to the actual implementation of community outreach and education programs let us think about the public-service category. Examples of these type of programs may include sustainable material management and disaster debris management. Educating and engaging communities build trust with government entities and community members. Communities can learn and implement source reduction practices, recycling, and composting . All of this will help to reduce the generation of debris . Education efforts can really help reserve space in landfills as well. Support preincident planning to increase the sustainable materials management. In your development incorporate partnerships between neighboring jurisdictions. It will really help your disaster debris management and help us develop much of reduce and recycling markets. Remember, one of the main goals is to bring back recovered materials into the economy. During day-to-day operations and after disasters communities may produce materials that neighboring jurisdictions may need for economic department activities and also disaster recovery activities. Also, some communities may not have the infrastructure to handle surges in debris resulting from disasters. Establishing partnerships to implement debris management planning at original skill allows for a faster response time recovery. The EPA disaster debris recovery tool can help with this. Assisting local governments to include in their daily operation plans for solid waste infrastructure and management can help reduce debris management costs. Managing large amount of debris after a disaster

is expensive. We want to think about programs that fill the planning capacity of local government and operators of solid waste -- and composting facilities. These planning activities may include, but are not limited to, operation plans and pick up routes. As we discussed so far, planning activities can really make a difference in many areas of solid waste and disaster debris management. Let's now move to infrastructure activities. Some examples of activities from the infrastructure include the actual construction of solid waste processing and disposal facilities, and improvement needed to support the closure of open dumps. Open dumps can become human made hazards that can compromise the of availability of drinking water sources and environmental protection resulting in adverse effects when trying to establish community lifelines after a disaster. Strengthening solid waste infrastructure for day-to-day operations will translate to more effective and efficient management of solid waste and debris streams generated after a disaster. Other examples include the expansion of reduce and recycling operations. Again, this will help you prefer preserve natural space. It also includes infrastructure improvements to support compliance with permits, operations, and environmental requirements from a local government and the federal government. You want to develop programs that help solid waste and material management infrastructure be in good shape to sustain the day-to-day operations and also disaster events. Such programs can support local environmental

department, counties, municipalities, and communities. Economic abutment activities also have interactions with solid waste and disaster debris while you and your sub grantee development plans to implement in the structure improvements and negation measures. You also want to consider the creation of workforce developed programs on environmental skilled trades to support the long-term implementation of the developed plans. Also, workforce development programs can support sustainable reconstruction and recovery efforts. For example, community members with skill sets for sanitation, recycling, and reuse can augment the local [Indiscernible] in handling solid waste and materials resulting from recovery activities. Improving economic growth through green businesses and jobs opportunities will help to reduce debris and help communities to recover faster. We talked earlier about how updating building codes and planning for the sustainable deconstruction of the structures can help in reducing regeneration. The actual repairs and improvements can implement updated building codes can interact with housing activities. The same will apply when it comes to the action of deconstructing housing in a sustainable manner. Deconstruction is the process of carefully dismantling buildings -- deconstruction can be applied on many levels to salvage usable materials and significantly cut waste. As mentioned, such reduction is the most preferred option for material management.

This matrix I put together the activities and is a reflection on the summary of the examples of HUD , CDBG-DR, and CDBG-MIT activities interacting with solid waste and disaster debris. You can use it as a reference to assess your decision-making on program development. To complete our representation today I will also share other general best practices that will help you leverage federal funds to provide relief to solid waste and disaster debris needs. I will also like to share a success story that EPA learned about through our engagement in the Caribbean. Let's begin with the additional best practices. Build capacity on grant writing and grant management in your community. This will provide community self-service when it comes to addressing needs on solid waste and sustainable material management. Capitalize on disaster recovery funds and federal recurrent funds. Federal agencies such as USDA, EPA, and EPA have non-disaster related funds available on a recurring basis that can also help support your solid waste and debris management activities. And this is where having people and communities and local government departments dedicated on providing a management is very handy also, implement federal match programs that support solid waste and disaster debris activities. Remember, the FEMA funds and other federal funds may have a state to state match requirement. Also, get the private sector involved early in the process . Bacons for the long-term implementation of various activities we Scott discussed today. And perhaps this is one of the most important best practices to share today. That is that get your mitigation projects listed in the local mitigation plan. Meet with your state hazard mitigation officer to coordinate , sense solid waste mitigation projects are listed in the local mitigation plan become eligible for certain federal funding. It's very important to get your projects listed in the local mitigation plan. Through engagement in the Caribbean we learned about but the Puerto Rico Department of Housing is doing with their CDBG-DR and CDBG-MIT funds. The Puerto Rico housing department has developed various programs that can possibly provide relief through solid waste and

[Indiscernible] after hurricane Maria. There CDBG-DR action plan includes infrastructure and economic programs that support solid waste improvement and economic growth and sustainable material management. Also, their planning programs may provide funds for the various planning activities interacting with solid waste and disaster debris at a regional, local, and community scale. In Puerto Rico engagements with federal agencies, local practitioners, and regional public to learn about solid waste and any needs, challenges, and opportunities. All of this to support the development of their CDBG-DR action plan. This is one of many examples Nationwide . We at EPA are eager to learn more about them. We look forward to hearing from other HUD grantees and we look forward to pursuing collaboration with you. Remember, investments on solid waste and debris management will bring sustainability and resilience to communities. It will help them to recover faster and reduce adverse impacts from disasters. Well, thank you all for your attention now I will toss it up to Clay.

Great. Thank you, Paul. I appreciate that. Okay. I want to thank Paul and Melissa for giving that great presentation . I know solid waste is something that at least on the HUD side we haven't talked too much about before. It's great when we can, kind of, expand our knowledge and understanding of other issues that come up during disasters and start to think about how us and grantees can address these issues . That was really helpful. I know, thinking back several of our grantees in the past have definitely dealt with issues around the bottleneck of disaster debris and solid waste that happens right after a disaster. If they start to get to think about how to plan to be more resilient for that or facility improvements that can be made on the in the structure side, especially in the CDBG-MIT side of things, I think this was a great chance to see all of those types of activities that they can participate in. Now what I'd like to do is we can go into a question and answer session. We have time to answer questions and that you may have, anyone who is in attendance. As you notice there is a question box at the bottom right where it says type your questions here. We can go through those and start to answer them a. If you have a question please submit it there. We already have a couple of questions that have come in the. The first one came in earlier and the question was what role does the private sector play in an waste management plan? Is there a market for debris and waste that will bring in private sector resources? Does anyone on HUD one to answer that question?

[Silence] that okay. We have , until one of our presenters has a microphone working he also typed out a response here. The response was the private sector can play a big role in debris recovery. Metals can be recovered where meta-collectors pay for both metal, selected wood can be recycled into wood pellets for pellet stoves. Those are two of the suggestions he has . If he can get his microphone working he can definitely go into more. I think another question that at least I have that is coming up is what is one thing for the attendees , what is one thing that they can think about or add or what they can consider when they're thinking about how to address future issues during a disaster? In your specific field. I'm going to open us up to everyone who is on

the EPA side what is one thing a grantee can consider to address during a disaster in your work?

This is Paul. I believe one of the things to think about, in particular when you are establishing of the temporary debris sites is to practice segregation of the materials that will be getting into these sites. That is really something that you need to plan for , how that site will be arranged. To provide the needed space for the implementation of segregation practices. So, that's why the disaster debris planning becomes very important. Not only brings the opportunity to recover materials, but also it will help rapid opening of these temporary debris sites when needed. Having these sites preestablished for needed space or the segregation practices, that certainly is something to think about.

That's great. I appreciate that, Paul. Is there anyone else wants to jump into that?

This is Christina. Thank you, everybody. I learned a lot myself today. I come from the area of sustainable materials management. And resiliency. So, one of , I think, the most critical tasks that a committee or grantee will take on is planning. Perhaps someone will want to say little more about that. In your plan it's really important to look at how you can right from the beginning generate less debris to begin with. That way everything becomes easier . So, take a look when you're doing your plan at items like what are your building codes? How can you build greener structures? What building

needs to be deconstructed? Where can you send those materials back into the market? So that when a disaster happens again, which we hope it doesn't, you have less debris to deal with in the beginning. Making sure when you're doing your plans you don't just look at what happens after a disaster, but what you can do before a climate event to make the outcome less impactful in a negative way.

Christina, this is Melissa. Just to add to that, my job was about how to manage debris that is generated by a disaster and it would be so much easier if, for me, if debris wasn't generated at all.

I just really want to 2nd what Christina was saying about finding ways to minimize the debris that can be generated . We go into a lot of detail on different ways , once debris is generated, how to manage it in a way that is more sustainable and it doesn't have to go into a landfill. What else can be done with this debris, so it's not just and negative for the community?

How can it be turned into a positive? And lot of that is going to take planning. Without planning there is a tremendous pressure after a disaster just to get everything cleaned up. The fastest way to clean everything up is just keep it in the big piles which were generated and just throw it into a landfill. Of course, once it's in the landfill it's going to stay there and provide no further benefits. To keep it out of the landfill it will take planning. Writing a debris management

plan is really the best way to think through the issues and document them, so that everyone in the community, the whole community, understands what they are and can work towards the same goal.

That's great, Melissa. That's a great point. I do think a lot of people are often wondering how they can through the planning process kind of optimize for the next time, so they're not dealing with that same bottleneck issue. Does anyone else at EPA want to speak to that?

This is Dale Carpenter at EPA region two. A number of things that we have had experienced here in region two which covers New York, New Jersey, Puerto Rico, and the Virgin Islands , we have had our number of natural disasters that we have had to do with. The some things we found are, again, of the need for preestablished temporary debris management areas or TDMA where debris can be staged and segregated and the need for a standby contract to both manage debris and track debris, that is subject to reimbursement by FEMA , so it's important to follow certain protocols for so that municipality can be reimbursed for those activities. We also experienced, as it somebody mentioned, about what is the value in private sector. How is private sector involved? They are involved in the standby contracts they are also involved in managing debris post disaster. Many of the debris, much of the debris generated does have value either in a lot of vegetative debris that can be used in our particular spirits in Puerto Rico there is a viable tropical hardwood that can be recovered for

using those materials. And other vegetative debris could be used to generate mulch and other compost. For example.

That's great. Thank you. Great. And another question some of our grantees are wondering about is on the, you know, that was a great transition to thinking about use of the nonfederal cost share component of CDBG funds. It will be interesting to hear if anyone wants to share about how other agencies like FEMA, I know USDA and EPA clean water entry for water

funds on might be doing work around solid waste. Does anyone want to speak more to what that type of work looks like, so that our grantees can get a sense of, maybe they want to partner with some of those projects ?

Yes. Absolutely. This is Paul. When we think about the clean water State revolving fund this funding source, which is managed by of the state could be used for implementation of practices in facilities that will help protect underground water sources. As mentioned in the presentation, when you do not have a proper operation of solid waste facility

that may result in possible contamination of drinking water sources. Certainly, when you are trying to capitalize on using the clean water [Indiscernible] fund you have to establish that linkage on how the proposed projects will help the protection of the environment. In particular when we are talking about underground drinking water sources. That program has a matching requirement that the applicant is responsible

for. Yes. I mean, that is a possible funding source where a federal match program can help access in the event that the applicants cannot afford that matching requirement.

Great. Awesome. Thank you, Paul.

I can also speak on , just quickly, I also would like to speak on USDA. They do have available a recurrence grant and loan program that is called the waste and water program . That , I'm not familiar with all of the requirements, but many of the programs they have may have the federal matching requirement. So, certainly, as we shared one of these strategies and things to establish when possible these federal matching programs with CDBG-DR and CDBG-MIT , because, yeah, I mean, it can help implementation not only of the FEMA projects, also projects that other federal agencies can sponsor the funding.

Awesome. That's great to hear about. I think several of our grantees may be trying to look at the nonfederal cost share component as they start to look at their in the structure activities that they're taking on. Okay. Are there any further questions in the chat? It looks like we may have , okay, we have one more question here. The question is I would like to know how repair and reuse in the structure projects may be funded. I think just answering it on the HUD side , and the structure activities for both CDBG-DR and CDBG-MIT funding sources , they're both eligible activities and the focus on of the repair and improvement of the facilities including drink water , clean water, treatment plants, and solid waste treatment plants. And, I guess, the question for you guys is on the clean water, drinking water, SRS fund what kind of typical projects are undertaken for improvements and repairs after a storm?

Yes. We have seen , what we have seen in particular in the experience that we have had in Puerto Rico is that many water related projects are the ones that have been , that the clean water State fund has been receiving applications. Normally the application process included an application package that will provide a scope of the project and also technical information along with budget information. Yeah. Generally, in the experience that we have had in the Caribbean it is mostly water projects.

Great. In the past grantees have focused on their capacity improvements at the facility, being able to handle the potential incoming solid waste and disaster debris from future events that are similar to the previous disaster. If you're disaster has experienced some kind of damage in your capacity, making sure you are building it back, so they can handle future disasters . It's something to consider with your and for structure activity, with your CDBG-DR and CDBG-MIT funds. All right. I think we have another question. I might just follow up with you via email just to make sure I'm answering your other parts of your

question appropriately. What I will do here is if there are no other questions I will go through the end of the slides. First, I want to thank Heidi for setting up the presentation. And then I want to thank all of the EPA presenters and people involved with the presentation. The they are on the screen there. I think this was a great introduction into solid waste and having our grantees think about the possibilities of planning work around solid waste in the structure work , and solid waste and economic department and housing as well. I want to leave our grantees here with some resources. These are links that to the EPA team gave to us if you want to learn more about any of the contents that they talked about during the presentation. And this webinar is one in a series that we have been putting on due to the previous workshop being canceled. We are doing a series of webinars there are four other upcoming webinars that you can take part in. They are on the screen here. Disaster recovery structure projects, duplication of benefits and regional coordination. If you are interested in signing up for any of these webinars as well you can go to the HUD exchange website and look for upcoming training . And, lastly, if you have any further questions or you're trying to think about how to incorporate or address solid waste management in your programs. -- we have the contact information of everyone on the EPA site here . Also, reach out to us in the policy unit at HUD . The email is the RSI policy unit at HUD.gov. We can get back to help you problem-solving issues you may have thinking around solid waste management. That concludes our presentation. Thank you everyone for coming out. I look forward to seeing you at future webinars.

[Event concluded]