

**THE ROLE OF MITIGATION IN REDUCING FEDERAL
EXPENDITURES FOR DISASTER RESPONSE**

HEARING

BEFORE THE

SUBCOMMITTEE ON EMERGENCY
MANAGEMENT, INTERGOVERNMENTAL RELATIONS,
AND THE DISTRICT OF COLUMBIA

OF THE

COMMITTEE ON
HOMELAND SECURITY AND
GOVERNMENTAL AFFAIRS
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**THE ROLE OF MITIGATION IN
REDUCING FEDERAL EXPENDITURES FOR
DISASTER RESPONSE**

WEDNESDAY, MAY 14, 2014

U.S. SENATE,
SUBCOMMITTEE ON EMERGENCY MANAGEMENT,
INTERGOVERNMENTAL RELATIONS,
AND THE DISTRICT OF COLUMBIA,
OF THE COMMITTEE ON HOMELAND SECURITY
AND GOVERNMENTAL AFFAIRS,
Washington, DC.

The Subcommittee met, pursuant to notice, at 2:34 p.m., in room 342, Dirksen Senate Office Building, Hon. Mark Begich, Chairman of the Subcommittee, presiding.

Present: Senators Begich, Landrieu and Pryor.

OPENING STATEMENT OF SENATOR BEGICH

Senator BEGICH. We will go ahead and call this meeting to order of the Subcommittee on Emergency Management, Intergovernmental Relations, and the District of Columbia. The hearing is “The Role of Mitigation in Reducing Federal Expenditures for Disaster Response.”

We thank the panel for being here.

I have a few opening comments. We will be joined by one or two other Senators throughout, but I, again, appreciate everyone being here.

We are here today to examine the relationship between investing in mitigation activities before a disaster and spending less to respond and to recover from floods, earthquakes, hurricanes and tornadoes.

For the last year, the Subcommittee has examined a number of critical issues affecting the emergency management community. We have discussed grants to make sure that our State and local first responders are well trained and properly equipped, highlighted the ongoing challenges facing communities recovering from Superstorm Sandy and discussed the real threat erosion and extreme weather posed to communities throughout Alaska.

Oversight on these challenges is important, but response and recovery is, by nature, reactive. So we must also make sure we are doing all we can to anticipate and bring down future costs.

It makes sense to turn our attention to a very common-sense action that has the potential to make the communities safer and sig-

nificantly reduce the amount we as a Nation spend on responding and rebuilding after disasters.

Mitigation must be a national priority. While much of the investment in mitigation comes during the recovery process, as we are seeing following disasters like last year's devastating flooding along the Yukon in Alaska, taking action before a disaster is still the most effective way to save lives and money.

We have all heard the statistics often cited by supporters of mitigation. For a dollar spent on risk reduction before disaster strikes, we save four dollars in response and recovery costs. At a time when we are focused on balancing the budget and reducing our debt, we cannot pass up opportunities like this.

According to the National Academies of Science, Federal expenditures post-disaster are borne by the entire country and have been growing steadily for the past 60 years.

In 1953, for example, Federal spending on disasters totaled \$21 million. We would love to hear those numbers again.

In 2009, with many more disaster declarations, the Federal Government spent \$1.4 billion. This does not even include in the account for billions spent by the private sector, individuals, cities, States and others impacted by such disasters.

As we spend less and less on mitigation programs in our discretionary funding, we continue to see Federal, State and local expenditures on disaster relief climb to new heights. The time has come to ask ourselves, instead of doing the same thing over and over, and getting the same results, can we invest taxpayer dollars more strategically before a disaster happens to save more lives and better protect our economy?

I have seen the results of inaction firsthand. I visited with residents of the villages along the Yukon River last year and heard their accounts of dangerous late-night evacuations out of Galena as flood waters swept their homes away.

I was joined in Alaska by the Federal Emergency Management Agency (FEMA) Administrator Craig Fugate just last month. We walked through the mud on a vacant property, stepping over the remains of a home that due to continued erosion had recently fallen into the Matanuska River.

Last fall, I was joined up in Nome by Mr. Miller, who joins us here today, and other FEMA officials to see the devastating effects of coastal erosion. This slow-moving disaster is getting worse by the year, but smart investments could reverse the damage.

The price of investment can be high, but inaction is far more expensive. We do not have to create entirely new programs, departments or agencies to promote mitigation. It makes sense to build on the strong structures that already exist at the Federal, State and local levels.

The cost of disasters are a strain on all levels, from victims' pocketbooks to the Federal budget. At the Federal level, the Disaster Relief Fund (DRF) and the National Flood Insurance Program (NFIP) continue to feel the pinch whenever a disaster strikes. As development has increased so has exposure to huge disaster costs.

The DRF funds FEMA, supports State and local responders, as well as reimburses for damages to homes and infrastructure. We have seen time and again that Congress has to pass supplement

funding after a disaster to avoid running out of money in the middle of a recovery process. This \$7 billion fund is constantly being stretched, especially as extreme weather increases.

The NFIP is buried in debt, which now sits at \$25 billion. Even though flooding is this Nation's biggest threat, mitigation funds continue to be underutilized. The NFIP will continue to be a drain on our economy unless we can find a way to balance affordability with real awareness of risk and concrete action to reduce it.

Mitigation is a common-sense solution, but it is not easy. Investment can be a tough sell in rough economic times, but we must stop focusing on recovery from the last disaster with no eyes to the future. We must look ahead and prepare our homes, schools, businesses and critical infrastructure for the threats of the future.

I believe this issue is one of the greatest challenges facing the emergency management, development and insurance communities, and I look forward to discussing the best ways forward.

We will start from this side, down. And, if a member comes in, I may pause you to allow them to make their opening comments and then we will continue with the testimony if that is OK.

Again, Mr. Miller, thank you, and it was great to have you up north.

The weather is better today. Alaska is experiencing extreme warm weather compared to our usual season. We have been averaging, 65-plus weather for the last several weeks which is not heard of until we get deeper into May. So we are very happy.

But it also creates, as I just saw a warning, fire hazards now increasing before our season has even started to be mobilized. So we know we have some issues.

But, again, Mr. Miller, thank you.

He is the Associate Administrator of the Federal Insurance and Mitigation Administration (FIMA) at FEMA.

We thank you for being here, and we appreciate your attendance.

And, if I could say, all your written statements will be also entered into the record.

**TESTIMONY OF DAVID MILLER,¹ ASSOCIATE ADMINISTRATOR,
FEDERAL INSURANCE AND MITIGATION ADMINISTRATION,
FEDERAL EMERGENCY MANAGEMENT AGENCY, U.S. DEPARTMENT OF HOMELAND SECURITY**

Mr. MILLER. Thank you, Mr. Chairman.

I am David Miller, the Associate Administrator for the Federal Insurance and Mitigation Administration at the Department of Homeland Security's (DHS) Federal Emergency Management Agency.

I am here to discuss FEMA's mitigation programs and how we educate, incentivize and fund State, local, tribal and territorial efforts to build stronger communities that collectively create a Nation more resilient to an increasing number and intensity of hazards.

The benefits of effective mitigation are well established. Mr. Chairman, as you just mentioned, we all look at the often quoted study that says the return on investment is four dollars for every dollar invested. Collectively, it is estimated that mitigation pro-

¹The prepared statement of Mr. Miller appears in the Appendix on page 33.

grams annually save the American public \$3.4 billion in losses avoided.

Investments in mitigation also serve to buy down risk, meaning that making positive changes lowers the probability of risk and makes communities safer and more resilient while contributing to the sustainability of the National Flood Insurance Program. Buying down risk is critically important as a higher percentage of our population is living in vulnerable areas than ever before.

FEMA has made significant strides in the last 3 years in the area of mitigation, bringing in the larger mitigation community together, including the private sector, around shared doctrine, partnering with governments at all levels and giving communities the funding, tools and information they need to make informed, data-driven decisions that minimize the risk they have identified.

This work was bolstered in 2011 with the release of Presidential Policy Directive (PPD) 8 on National Preparedness. This directive defined the mitigation mission area and required the development of a National Mitigation Framework.

In turn, the framework established the Mitigation Framework Leadership Group (MitFLG). It is a senior-level group that works to coordinate national-level mitigation activities and implement policies in consultation with Federal agencies and State, local, tribal and territorial governments.

Among other important work, the MitFLG is currently developing a consistent Federal flood risk management standard for Federal funds that are being used in Hurricane Sandy rebuilding, and that may be applied to future disasters.

We established the MitFLG in part to assure that we collectively consider changes in our climate as we plan for the future. The emphasis is in keeping with our larger commitment and continued focus on moving forward to build to the future and to consider its potential risk rather than building back to pre-disaster conditions.

Our responsibility to build to the future is informed by the President's Executive Order (EO) and Climate Change Action Plan, as well as our role in helping prepare the Nation for future impacts of climate change, including considering rising sea levels, the increasing frequency and intensity and duration of storms, and the increasing unpredictability of drought and wet cycles.

As we work to reduce risk nationally and address both hazards and threats, we must incorporate climate change into our data collection, knowledge transfer and mitigation planning. So we are working toward that goal.

Specifically, FEMA is working to integrate adaptation into its approach and also the approaches of the larger Federal Government. To do this, the agency is expanding its knowledge base and support for those who take on the challenge of climate adaptation.

As the Committee is aware, FEMA oversees and manages a number of grant programs to support mitigation efforts. We talk about the Hazard Mitigation Grant Program (HMGP), Pre-Disaster Mitigation (PDM) Grants and the Flood Mitigation Assistance (FMA) Programs. These programs have assisted governments in rebuilding and building stronger and more resilient communities.

In Alaska, FEMA has awarded approximately \$2.7 million in Hazard Mitigation Grant Program funding since 2013. It has been

used to acquire 11 homes in the city of Cordova, relocate 3 homes in Alakanuk—bolster warning systems in the city of Bethel, stabilize—

Senator BEGICH. As we say in Alaska, it is all covered.

Mr. MILLER. Thank you, sir.

Stabilize the embankment for the Alaskan Railroad and construction of a new bridge, perform an avalanche study for Mt. Juneau, install seismic shut-off valves at all fire stations in Anchorage, bury power lines in Anchorage and relocate power lines in the Kenai Peninsula.

In Kentucky, FEMA awarded more than \$10 million in HMGP funding in 2014 to acquire 65 homes in 8 counties, as well as to build 12 safe rooms in Allen, Warren and Webster Counties. This funding has also helped improve draining systems in Hopkinsville, Cooper Park and the city of Richmond; reconstruct road bridges in Grayson, Grundy and Marion Counties; and update the mitigation plans for the State, Louisville/Jefferson County and the University of Louisville.

Another way for a community to address their risk is participating in the Community Rating System which lowers NFIP rates for communities that make positive changes.

Recently, we analyzed our growing body of current and historical data to determine which of these changes reduced risk by the greatest degree. Then we adjusted our credits to give communities that made these changes discounts that reflected these reduced risks. In total, nearly 1,300 communities participated in the Congressional Research Program (CRS), representing 67 percent of all National Flood Insurance Program flood insurance policies.

In conclusion, successful mitigation efforts are a shared responsibility, requiring an engagement of all levels of society and the government. Moving forward, we will continue to focus on strengthening our data analytics while setting priorities that will help us mitigate and buy down our future risk. FEMA's commitment to ensuring the success of these efforts rests in the fact that they ultimately result in more resilient communities and collectively make us stronger and more prepared as a Nation.

Thank you for providing me with this important opportunity, and I look forward to your questions.

Senator BEGICH. Thank you very much, Mr. Miller.

Next I have Mr. Christopher Currie, who is the Director of the Emergency Management and National Preparedness Issues at the Government Accountability Office (GAO).

TESTIMONY OF CHRISTOPHER CURRIE,¹ DIRECTOR, EMERGENCY MANAGEMENT AND NATIONAL PREPAREDNESS ISSUES, GOVERNMENT ACCOUNTABILITY OFFICE

Mr. CURRIE. Yes, sir. Thank you, Chairman Begich, Senator Pryor. I appreciate you having me here today to talk about GAO's past work on disaster mitigation.

Mr. Chairman, as you mentioned in your opening statement, mitigation efforts help to build more resilient communities and the benefits are universally accepted.

¹The prepared statement of Mr. Currie appears in the Appendix on page 44.

As you pointed out, over the last decade, Federal disaster spending has skyrocketed. We spend more responding to single weather events, like Hurricane Sandy, than we used to spend on disasters over the course of a whole decade.

The menu of solutions to address this trend is short, and mitigation is one of the few options we have to reduce future costs. To compound this, we currently face several challenges that make solving this problem even more complex.

First, what were once considered extreme and rare weather events are now expected to become the norm.

Second, the Federal Government does not fully budget for the huge costs of these more routine disasters.

Third, key programs that help us limit the financial impact of disasters, namely, the National Flood Insurance Program, can no longer keep up. The program is now \$24 billion in debt and faces a difficult uphill battle to remain sustainable.

Taken together, these challenges create massive risks and fiscal exposure for the Federal Government. The solutions to these challenges are hard, and with another hurricane season approaching one cannot help but wonder what may be coming next.

Over the last 30 years, we at GAO and many others have reported a consistent message about hazard mitigation. It is key to reducing disaster assistance costs for all levels of government.

However, mitigation is not cheap, as you pointed out, and there are many challenges. Here are just a few examples that we have reported that make it difficult.

First, as the Federal Government shoulder more and more of the burden for disaster costs, expectations for a similar response increase while incentives for mitigation may decrease.

Second, mitigation efforts often conflict with desires to develop in hazardous areas such as along oceans and waterways.

Third, it is difficult to convince individuals of the risks they face and why mitigation is important.

Raising a house to withstand future flooding, retrofitting existing buildings to withstand earthquakes or relocating a native village because of erosion are complicated and expensive projects.

As part of our ongoing work for this Committee, we are encouraged by efforts across the Federal Government to encourage mitigation and resilience, particularly since Hurricane Sandy. For example, the Sandy Supplemental provides about \$350 million in funding for FEMA's Hazard Mitigation Grant Program, the largest of FEMA's mitigation grants.

Also, FEMA is taking mitigation seriously, and encouraging resilience is becoming a prominent theme in its mission and planning. For example, last year FEMA issued a National Mitigation Framework, which we previously recommended they do. They also issued a National Strategy for Reducing Disaster Costs.

While more funding for mitigation is great, FEMA is also taking steps to reduce paperwork, relieve administrative burden and speed up the hazard mitigation process. They are also taking steps to align mitigation grants with public assistance dollars after a disaster.

And it is not just FEMA. Other agencies, like the Department of Housing and Urban Development (HUD), are also emphasizing mitigation a part of their grant programs to States.

We think these are steps in the right direction. However, to use FEMA's term, building a mitigation-minded culture will not happen overnight and execution will be key. We will continue to evaluate these and other Federal mitigation efforts as part of our ongoing work for this Committee and plan to report to you later this year.

Mr. Chairman, the last point I want to make is that Federal efforts to encourage mitigation are not enough. State, local and tribal governments, as well as the private sector, play the biggest role in encouraging mitigation. In my written statement, we provide several examples at the State and local levels of efforts to incentivize this mitigation.

This completes my prepared marks. I would be happy to answer any questions you have.

Senator BEGICH. Thank you very much.

Next we have Chad Berginnis?

Thank you very much for being here—the Executive Director of the Association of State Floodplain Managers (ASFPM).

**TESTIMONY OF CHAD BERGINNIS,¹ EXECUTIVE DIRECTOR,
ASSOCIATION OF STATE FLOODPLAIN MANAGERS**

Mr. BERGINNIS. Thank you very much, Chairman Begich.

We are pleased to offer our thoughts related to the investment in hazard mitigation relative to the cost of disaster response. We thank you and this Subcommittee for focusing on the value proposition of a comprehensive national hazard mitigation effort.

ASFPM's 15,000 members and 35 chapters are the country's practitioners who work with flood hazard mitigation programs on a daily basis.

Let's put the disaster costs into perspective based on the available data.

The Center for American Progress reported that the Federal Government spent \$136 billion from fiscal year (FY) 2011 to 2013 on disaster relief. This adds up to an average of nearly \$400 per household per year. For the hazard of flooding, annual damages now exceed \$10 billion a year, up from \$5.6 billion a year in the 1990s.

But FEMA's April report to Congress on the use of the Disaster Relief Fund shows the relative priority of mitigation as it relates to the larger disaster fund expenditures in general. In that report, the estimated totals through fiscal year 2014 are projected to be \$349 million for hazard mitigation and \$12.04 billion for all other categories, such as public assistance, individual assistance, operation and administrative costs.

Even if the total investment in hazard mitigation for Hurricane Sandy eventually reached 15 or 20 percent of the total disaster cost, we have to ask, is that the right level for our mitigation investments; should we have a national goal that is higher, or are we simply going to keep pouring money into disaster response?

¹The prepared statement of Mr. Berginnis appears in the Appendix on page 62.

Population trends and climate change are increasing the Nation's vulnerability. As the costs of disasters continue to rise, our Nation cannot afford the status quo. Hazard mitigation investments are the only element of disaster expenditures that will result in the reduction of long-term disaster costs.

Over the past 25 years, there have been several hazard mitigation programs created across the Federal Government that can be applied to reduce disaster losses. These programs range from planning to grants to loans and other mechanisms. However, these programs need to be optimized to improve their effectiveness and efficiency.

Our written testimony not only identifies these programs but contains 24 specific recommendations to optimize them. I would like to highlight two items, though.

The first is that ASFPM strongly supports the Pre-Disaster Mitigation Program and are again disappointed that the Administration's proposed budget has zeroed the program out.

The second is that all of these programs rely on sound flood risk data or hazard data. For the hazard of flooding, we must ensure that we have a robust funding and support for FEMA's National Flood Mapping Program and the U.S. Geological Survey (USGS) National Streamflow Information Program. Both are funded at less than a quarter of their authorized amount. Accurate, up-to-date flood hazard data is essential so that communities and individuals can make resilient rebuilding decisions and maximize the effectiveness of all of the Federal Government's hazard mitigation programs.

But, in ASFPM's view of a national hazard mitigation effort, everybody must do their part, and it is important that you know that the Federal Government's investment in hazard mitigation is being supplemented by State and local investments as well.

The Village of South Holland, Illinois is one such community. They have established a unique mitigation rebate program available to all property owners who wish to complete flood control projects. South Holland, by the way, is a community of 23,000 people.

In 2009, the city of Findlay, Ohio passed a quarter percent sales tax to fund flood mitigation activities and provide match for Federal projects after several large floods in that previous decade.

At the State level, many States, including California, Minnesota, Wisconsin, Ohio, New Jersey and South Carolina, have their own mitigation programs or a tradition of matching Federal mitigation funds.

In Colorado, homeowners in the Wildland Urban Interface may deduct half of up to \$5,000 in cost for wildfire mitigation measures, with a maximum potential deduction of \$2,500 from their Colorado taxable income. Wildfire mitigation measures include establishing defensible space around residences, thinning vegetation or other site work.

Such State and local programs should be incentivized, encouraged and increased.

So what is the outcome that we are striving for?

Wouldn't it be nice if you as Members of Congress did not have to pass supplemental disaster appropriations bills after a major

hurricane or flood strikes, or at least deal with a much smaller bill such as maybe \$21 million?

Hazard mitigation can take us to the point that when our next disaster occurs damage is minimized, cleanup is quick and people get back to their lives quickly with minimal disruption, and State and local capability to handle the event is not exceeded.

Hazard mitigation can result in resilient communities and States. That is the goal.

Thank you.

Senator BEGICH. Thank you very much, and again, we appreciate your testimony.

Is it Robert Detlefsen?

Mr. DETLEFSEN. Perfect.

Senator BEGICH. Oh, good. Thank you.

He is the Vice President of Public Policy, National Association of Mutual Insurance Companies (NAMIC), and is testifying on behalf of the BuildStrong Coalition.

But you do wear two hats, which is, important to note—the insurance, but you are here on behalf of the BuildStrong Coalition—and we thank you for doing that.

TESTIMONY OF ROBERT DETLEFSEN,¹ VICE PRESIDENT OF PUBLIC POLICY, NATIONAL ASSOCIATION OF MUTUAL INSURANCE COMPANIES

Mr. DETLEFSEN. Chairman Begich, Ranking Member Paul and Members of the Subcommittee, the BuildStrong Coalition thanks you for holding this hearing to examine the vital role that mitigation can play in reducing post-disaster recovery costs.

My name is Bob Detlefsen, and I am Vice President of Public Policy for the National Association of Mutual Insurance Companies.

NAMIC is proud to be a founding member of the BuildStrong Coalition, a group of national business and consumer organizations, insurance companies, firefighters, emergency managers and building professionals dedicated to promoting better building standards and a more resilient America.

The BuildStrong Coalition shares the Subcommittee's goal of helping communities prepare for, and recover from, natural disasters while saving taxpayer money in the process.

The insurance industry is on the front line of these disasters. We help individuals and businesses prepare for, and recover from, the potentially devastating effects of catastrophic hurricanes, storms and wildfires.

Superstorm Sandy, one of the most damaging storms to hit the United States, caused 72 deaths and almost \$19 billion in insured property losses in 15 States and the District of Columbia. Losses from this storm totaled nearly \$50 billion, \$19 billion of which came from lost economic activity. Our companies are still there, helping people finish the job of recovery.

Insurance coverage for losses resulting from natural disasters is typically less than 20 percent of the total, however. The Federal Government covers the remainder of the cost through emergency

¹The prepared statement of Mr. Detlefsen appears in the Appendix on page 78.

allocations which require spending that directly increases the national debt. For decades, Congress has provided insufficient funding for disaster relief and then added funds in the middle of fiscal years after disasters happen. Supplemental disaster funds were appropriated in 17 of the 22 budget years between fiscal year 1989 and 2010, according to the Congressional Research Service.

Since 1983, these disasters have cost nearly \$1 trillion. That is roughly an average of \$32 billion a year.

Not enough is being done at the Federal level to incentivize States to promote more resilient building construction. There is overwhelming scientific evidence to support the conclusion that statewide building codes save lives and greatly reduce property damage and the subsequent need for Federal disaster aid.

For example, the National Institute of Building Sciences found that for every one dollar spent to make buildings stronger the American taxpayer saves four dollars in Federal disaster assistance.

The Louisiana State University Hurricane Center estimated that stronger building codes would have reduced wind damage from Hurricane Katrina by 80 percent, saving \$8 billion.

The Institute for Building and Home Safety (IBHS) conducted a study following Hurricane Charley in 2004 and found that modern building codes reduced the severity of property losses by 42 percent and frequency of losses by 60 percent.

Standardizing building codes will save lives and taxpayer dollars. In some locations, they also favorably affect the availability and affordability of insurance.

One effective step Congress should take to reduce the cost of natural disasters is to encourage investment by local communities and individuals in risk mitigation. To that end, the BuildStrong Coalition strongly endorses S. 924, the Safe Building Code Incentive Act, as a forward-thinking measure that will result not only in the construction of stronger, safer homes and businesses but will save lives and prevent losses, including losses borne by the Federal Government.

A 2012 Milliman study found that S. 924 would have saved U.S. taxpayers \$11 billion in hurricane relief payments alone between 1988 and 2011 had it been in place. That is almost \$500 million a year in savings for Federal taxpayers.

Under the proposed law, States that adopt and enforce nationally recognized model building codes for residential and commercial structures would qualify for an additional 4 percent of funding available for post-disaster grants.

Another proposal the BuildStrong Coalition has endorsed is S. 1991, the Disaster Savings Account Act of 2014, which allows homeowners to create tax-free savings accounts to be used for mitigation investments. Small up-front costs to make a home more resilient not only save lives but can save countless dollars for homeowners and spare the pain of losing everything in a disaster.

Just last month during a single week, over 75 million Americans, or one-third of the U.S. population, were under the threat of severe weather, indicating that no region in this country is immune from the perils of natural disasters.

In closing, I want to thank the Subcommittee again for holding this important hearing. The overwhelming evidence supporting the widespread adoption of statewide building codes proves that the Safe Building Code Incentive Act is a fiscally responsible way to make our country stronger, safer and better prepared for natural disasters.

And I look forward to your questions.

Senator BEGICH. Great. Thank you. Thank you very much for your testimony.

Thank you all four for being here this afternoon.

I do have some questions. And I do believe that Senator Landrieu may be here, and if so, if I finish my questions, I will wait for her. But, if not, we will continue on.

Let me first ask Mr. Miller.

Let me walk through a couple things, and this is on, obviously, the Pre-Disaster Mitigation Fund.

I think it was the last few years, and you have heard a little bit of testimony on the defunding of it. In the 2015 budget, there is a proposed Opportunity, Growth and Security Initiative that includes \$400 million for pre-disaster mitigation.

So this is a two-part question.

The first part, it almost contradicts itself. We have a fund, a mechanism that has been in place for some time, but the last 2 years, no money or proposed funding. And then this next year there is a proposal to get it funded but then also fund something similar with a broader scope of issues and \$400 million in there.

If it is a priority, why not just fund it?

Now maybe this is not a question you can answer because it maybe goes to the Office of Management and Budget (OMB) and the White House folks who decide what they want to spin out there in the marketing of their budgets.

But it just seems like you have a mechanism. Why not just fund it, fund it robustly, so we can get on with doing more pre-disaster mitigation?

Help me understand that.

Do you see the contradiction there? Maybe I am missing something here.

Mr. MILLER. I do, and I saw it in our appropriations and authorization discussions as well.

Senator BEGICH. Right.

Mr. MILLER. I think you have hit the nail on the head. The truth about Pre-Disaster Mitigation Program and the zeroing of the budget, is it came at a time when tough budget decisions were being made. Frankly, there was not a lot of money in PDM, but it was an important function.

Senator BEGICH. Right.

Mr. MILLER. A number of the areas that were funded in the Pre-Disaster Mitigation Program, though, when there was an evaluation of where we were going to make cuts in the overall FEMA budget, a lot of those activities could be absorbed into other grant areas. We talked about HMGP.

Now the problem with HMGP is it happens after a disaster.

Senator BEGICH. Right.

Mr. MILLER. We can talk about flood mitigation assistance and their planning dollars there.

And we can talk about Emergency Management Performance Grants that go to States, and there is a pass-through to local governments. It is an eligible activity there, at least if we did the planning activity.

I think the ones that really I have heard are ones that do not get disasters and, frankly, were looking for project dollars, looking for building dollars.

Now I have some other areas, and we can pick that up, like HMGP, but again, it is after the fact.

So we recognized the problem with PDM and what it did, but there were some opportunities to move that along.

Senator BEGICH. But is it fair to say that without that PDM money you still are very short-changed in mitigation?

Mr. MILLER. And always will be.

Senator BEGICH. Always will be.

Mr. MILLER. And I think part of that discussion—let me go back to the \$400 million the President talks about in the Opportunity, Growth and Security Initiative (OGSI).

Senator BEGICH. Right.

Mr. MILLER. I think that the issue there is, No. 1—

Senator BEGICH. Just for people who watch this—my mother—the Opportunity, Growth and Security Initiative, that is what you mean by that.

Mr. MILLER. Yes, sir.

So the Opportunity, Growth and Security Initiative—that is a result of savings we may have in the budget.

Senator BEGICH. Right.

Mr. MILLER. As that gets re-obligated, what it says for the Administration is there is still an emphasis on a want to do mitigation activities, this one with a particular focus, and the focus will be more on climate and climate adaptation. It follows with the President's directives there.

Senator BEGICH. If I can pause you there, again, if you look at the pre-disaster mitigation funds, I could argue, for example, the work that is being done in Alaska—well, where we were up there with the administrator, right?

Here we are in a riverbed. The river has consumed a house. They are 50 feet or so away from—maybe a little bit longer, but 50 feet away from a road infrastructure. Once that road is gone, there may not be a big volume of people who live there, and it has an impact a lot to the survival of that community.

Wouldn't you want pre-disaster mitigation funds to be able to deal with that rather than—here is what I am worried about.

I know this is the politics of the world, that everyone wants to have a name on a program and say we did this.

Why not just put that money into the PDM account and say that is what we are going to do, and we focus the PDM account on expanding on what it should do, and if that is not enough money we request more?

Why don't we just keep it simple because what you are potentially doing is creating another—there is enough paperwork and

mill to funnel through just to get a dollar for pre-mitigation. Why not—

Mr. MILLER. Well, the Opportunity, Growth and Security Initiative calls for that money to flow through the PDM program. The difference, I think, will be in the look and the focus of the program as we move PDM.

One of the things you mentioned as we were leading into the testimony is we tend, even in our current mitigation funding, to mitigate against yesterday's event instead of future events.

Senator BEGICH. Right.

Mr. MILLER. One of the challenges, though, in moving forward to future events is how we look at the data and the data that drive the analytics, that talk about the benefit-cost of doing it and over what period of time. You mentioned the OMB and the discount rates we get in making things cost-beneficial.

Senator BEGICH. Right.

Mr. MILLER. We are working all of those issues.

But, going back to the Opportunity, Growth and Security Initiative, the President's look was more future-looking—

Senator BEGICH. Gotcha.

Mr. MILLER [continuing]. To take in climate adaptation, but it would run through a traditional channel of PDM.

Senator BEGICH. OK. Let me ask; you opened up two other areas, I want to talk about. And it actually zips back a little bit to what Chad brought up in the mapping issues.

If you have the data, that is great, but I can tell you; in Mat-Su, 40 percent of the area that was in a floodplain is no longer in a floodplain, but the maps still show it in a floodplain, and vice versa. So you have some challenges if you are going to think about the future.

If you take this fund and think about the future, you have to plan. But if the data is wrong or inaccurate, it is hard to plan that.

Now pause with that thought for a second.

Here is, to me, one of my other concerns. I think Chad, you said you had 24 or so recommendations in here. If I remember the right number, a couple dozen.

Once you said that and I remembered seeing it in your testimony, I got panicked, to be frank with you, not that they are not good ideas. Just how long will it take if we take one of those ideas. It is a regulatory issue to get it through your process.

So let's just say we see an opportunity. Let's say that the Opportunity Fund is funded. That means more money, a little more direction, may require some more regulation.

But as I look at how FEMA operates on regulation implementation, meaning the process, it takes forever. That is why I panicked when you said 24 suggestions—because I will be dead and gone if those were all accepted and implemented.

And I do not mean that in a negative way. I am just frustrated.

You are not the only agency. I do not want to tag FEMA as the problem here because, for example, OMB.

If you say cost-benefit analysis, I can tell you every—Galena would never be included. It would never be included because the population base is too small, but yet, that disaster wiped out the whole city.

But, on the back end, the cost-benefit, if you took that same amount of money and put it into Senator Landrieu's community, maybe New Orleans or New York, it would have a different kind of impact.

So, as we look at this cost-benefit analysis, we have to look at the community cost, not just the money cost or the people volume cost.

But I am putting that out there, and as I said, I just had several random thoughts here.

I want to get to one specific area and then I am going to pause and turn to Senator Landrieu.

How do we speed up this process?

I have seen report after report. I mean, one regulation took 8 years to get through the process.

This is why—no disrespect to attorneys—I am not an attorney, never want to be an attorney, because when I was mayor, if I was an attorney, I would have never gotten anything done.

We rebuilt the city. We did things that probably an attorney would look—well, I know I did. A municipal attorney would look at me and say, eh . . .

And I would say, well, but it is the right thing.

And we did it, and we did some things that made some stuff happen.

So how do we speed up this process without attorneys starting with the first view, and that is no, we cannot do that versus here is the end goal; let's get going, and I want it done in a short period of time? How do we do that?

Who can pull the trigger to get some of these regulatory processes because I think some of these recommendations you have—and I looked at them—are good recommendations?

Some may be regulatory, but I am afraid to suggest it, even though I think they would make a big difference and they are common sense.

But how do we deal with this?

And I know it is a global issue with the Federal Government, but I am talking about FEMA because your issues are so immediate.

Mr. MILLER. We talk about it in a number of ways.

Long story short, within FEMA, we have been doing regulatory review for the last few years to see what regulations we can actually vacate, and that takes time as well.

But more importantly, as we—

Senator BEGICH. Well, let me pause you there. See, you just answered the question with the wrong answer; it has taken you a couple of years.

I am betting on this. If I took these three people and augmented with a couple mayors and a couple State emergency management people and said, you have 6 months to review these regulations and tell me which ones are no longer necessary, I guarantee you they will do it because I did this when I was on the assembly and when I was mayor. We did it by department, and it was not hard.

Once you got the stakeholders in, it is a piece of cake.

Mr. MILLER. That is the process we are using—is to work with the stakeholders and say what is regulatory and what does not need to be regulatory.

The other part is how we vet policy and move it through.

But I will give you a for instance. And you have identified the problem right on. Even a simple regulatory review—we recently did one on a regulation that changed the flood planning standard, and it is how States renew plans.

Senator BEGICH. All right.

Mr. MILLER. We moved it from a 3-year review cycle to a 5-year review cycle to make it more current with what locals do in their planning environment. It took 2½ to 3 years to change that regulation, and it only changed a few words.

Senator BEGICH. Why is that?

Mr. MILLER. We have to go through concurrence, and examine the fiscal effects of a regulation. You adjudicate all the comments. And even on this one there are people that think the review cycle should be shorter and plans may be more robust.

We go through all of that, vet it, publish it, do the things that we need to do, you are about 2 or 3 years down, and that is fast for regulatory review.

If we are doing new regulation, now you are probably talking 4 to 6 years in new regulation.

Senator BEGICH. It just does not—I will hold this. I will pause here because I can get going here.

But an example you guys did, which I thought was very good—under the Sandy Act that we did, you had some new opportunity for tribes and instead of waiting for regs you started moving, which I thought was great.

And I am sure your lawyers probably had like heart attacks because they thought—

Mr. MILLER. No.

Senator BEGICH. Oh, good, you are giving me hope.

Mr. MILLER. It is trying to find the ways to yes, and we do it from a number of ways.

One is if it does not require a regulation, let's do the policy. And if it requires us to do a pilot to create the policies and we know what we are going to say, let's move it forward in doing it.

So you saw it in Hurricane Sandy recovery, where we are not doing regulation in a number of areas, or if we foresee regulation, we are at least moving forward with a pilot to tell us what the regulation will look for. And we are applying that.

The harder part for some of those—and it does get to the regulatory piece—is if it does require it, how do we make it in and how do we go through the regulatory process?

It is easy to do pilots and to move things, but at the end of the day, if we are not going to make it a one-time event, it may require regulatory action, and that does take a substantial part of time.

Senator BEGICH. Let me pause there. I want to turn it to Senator Landrieu, but I have questions for the rest of you.

Mr. Miller, thank you.

And I know when you are sent over from an agency, you are probably thinking, oh, great, I have to go in front of a committee; what will they do?

You can see I am being calm and collected here, but it is frustrating because it just does not make sense to me.

I will give you one example, and I am going to stop. It is not related to FEMA, but I remember there was a grant. I will not tell this Federal agency because I do not want to get them in trouble.

A community received a grant to do indoor greenhouses to grow vegetables in a rural community in Alaska. Why is that important? Because a head of lettuce can cost you \$5 to \$7 by the time you get it. So, if they can get it down to \$2.50, it is a huge savings.

The money was for planning. He took the money, built the greenhouse and just did it. Now it is very successful.

My point to him was that is exactly what you should do.

As his Senator, I said, if you get in trouble, let me know because we got the result.

Instead of planning the plan, he actually said, no, we can do this, and he did it.

It saves money for the community and has a youth-oriented employment program, and is actually doing something very positive.

That, to me, is what we need to be doing more in the Federal Government, to be more innovative and a little more entrepreneurial.

And so I will pause there.

Sorry, Senator Landrieu.

Senator LANDRIEU. That is OK.

Senator BEGICH. I got on a rant there because it just drives me crazy.

Senator LANDRIEU. Well, thank you, Senator, for your leadership.

I wanted to come and just focus for just a minute on the flood maps and the flood map planning that is going on, Mr. Miller, under your jurisdiction in FEMA and with the input from some of the other gentlemen that are at the table. I have just a couple questions.

Thank you for coming to Louisiana to see the fact that thousands and thousands of our people have to live close to the water, have been doing so for hundreds of years, have no intention of moving and have to find a way to live there affordably.

So, as I told you when you came, we were going to pass significant reforms to Biggert-Waters, which had many good intentions, but it had disastrous consequences for us in coastal Louisiana, central Louisiana, north Louisiana, and disastrous consequences around the country. And I intend to continue working on it, to fix it so middle-class people can afford to live where they work.

Having said that, tell me how many people work for you that are in charge of coming up with these flood maps? How many currently are full-time employees of yours or full-time contractors working on these flood maps?

Mr. MILLER. Senator, I will have to get you the numbers.

Senator LANDRIEU. OK. I would like to know.

Mr. MILLER. A lot of it, as you know, is contracted.

Senator LANDRIEU. OK. I would like to know the numbers, and I would like to know how many full-time equivalents, employees and contractors, and what your budget is every year for updating flood maps in the United States.

Mr. MILLER. Yes, ma'am.

Senator LANDRIEU. All right. How many floodplains do we have in the United States; Christopher, do you know? Are you the floodplain person?

Mr. CURRIE. No, ma'am.

Senator LANDRIEU. OK. Who is the floodplain manager? Chad.

Mr. BERGINNIS. Yes. In an analysis that we put together, we have approximately 1.1 million miles of floodplain and we have about 3 million miles of rivers and streams and coastlines in the country.

Senator LANDRIEU. OK. And individual floodplains, how many do we have, or is it 15,000?

I read somewhere in my notes—let's see. There are 15,000 State and local officials and other professionals engaged in floodplain management.

So how do you describe a floodplain? The way you just did it—by miles? OK.

So it is one million miles. Tell me again what that is.

Mr. BERGINNIS. When you look at coastlines, streams, or rivers, in the country, we have about three million miles, lengthwise.

Senator LANDRIEU. Of coastal?

Mr. BERGINNIS. Of coastal and riverine. I do not have a breakdown of one versus the other, but that is the total.

And then of that 3 million miles, about 1.1 million miles have identified floodplains associated with those. So only 1.1 million have floodplains, and the rest of them are along rivers and coast, but they are not—

Mr. BERGINNIS. They are not even identified.

Senator LANDRIEU [continuing]. Designated as flood plains.

Mr. BERGINNIS. Right, they are not identified as floodplains.

Senator BERGICH. Could I just clarify? They could be floodplains, some of that. We just do not know.

Mr. BERGINNIS. Correct, Senator. That is correct, and that is an important aspect of that. The floodplains have not been identified, but they most certainly exist in those areas.

Senator LANDRIEU. And what does it take to identify them?

Mr. BERGINNIS. Essentially, it takes identifying—there are two components that really go into flood mapping: knowing what your ground looks like—your ground elevations, the topography and those things—and knowing what the water does as it flows through the area.

So you have hydrology; that is, really kind of the analysis of the water, and that it is usually an engineering type study.

And then you have topography, and the current way we collect that is usually through LiDAR. It is laser-based collection.

And those two components together go through an analysis, and you basically have a floodplain at the end of the day.

Senator LANDRIEU. OK. How accurate are our floodplain maps?

So, if people everywhere, in every county, wanted to ask you, David, when they go to build their house, how high should it be built, how accurate is the information that we are giving them—what the elevations are, where they should be, et cetera?

Do we have 10 percent done? Fifteen percent done? Fifty percent done? A hundred percent?

Mr. MILLER. I do not think it is an issue necessarily, totally, of the percent done.

I think, if I understand your question, you are talking about the preciseness of the map.

Senator LANDRIEU. Well, I am talking about both.

I am talking about if Senator Begich and I were trying to explain to his mother and my mother, OK, of the map of the United States, including Alaska and Hawaii, how many counties had accurate up-to-date flood maps that would tell at least 90 percent of the people in those counties whether they were very likely to flood, not very likely to flood, or they would never flood at all. Try to help us understand in English, OK, what the answer to that is, broadly.

Mr. MILLER. Chad.

Mr. BERGINNIS. Well, I do know that with the FEMA flood mapping program there is a program metric—

Senator LANDRIEU. That is not English. You have already lost us.

Mr. BERGINNIS. OK. There is a measurement.

Senator LANDRIEU. Already lost us.

How many counties are there in the United States of America? Does anybody know?

Eight thousand?

Anybody in the audience?

Mr. BERGINNIS. About 3,300, I believe.

Senator LANDRIEU. Thirty-three hundred counties. So let's just start with 3,300.

Does anybody at the table have any idea how many counties in the United States of America today have accurate up-to-date flood maps that people could actually make decisions about?

Do not tell me about metrics, Chad.

Mr. BERGINNIS. OK. Actually, if I could answer with we, as a Nation—honestly, we do not know.

Senator LANDRIEU. That is very sad. That is why I tried to repeal Biggert-Waters and will continue to do it—because you cannot have a flood insurance program without accurate mapping.

And I am going to get a handle on how many counties have accurate maps and how many do not, and we are going to put it up either in this Committee or the Homeland Security Committee because we cannot make any decisions that make any sense without that kind of basic information.

So I need to know how many people are working on this every day, how much is in the budget to pay them to do it, how many counties have been mapped, how many counties will be mapped next year and how many counties will be mapped in 2016.

And just for your information (FYI), Senator, the reason that we are following this, of course, is because we had flood insurance rules of people in my State that were \$2,000 for the last 20 years and they went up to \$30,000 in one year.

Now they are back to \$9,000, but David, that is still too expensive, and the people of my State cannot live without this program working efficiently and effectively.

So we had one battle we won with stepping Biggert-Waters back, but we have to take the next step, which is why I am here on behalf of the five parishes in my State who are Lafourche,

Terrebonne, Plaquemines, Saint Tammany and Saint Charles—just FYI, Senator—who were part of a pilot project in the county.

Now we have parishes, not counties, and we have five in Louisiana that are part of a 25-county pilot.

So who knows the most about this pilot program?

OK, David, and talk to me for a minute—and then I am going to stop—about where this pilot is in these 25 counties, what is happening in these 5 in Louisiana and kind of what you expect to come out of this, with what information and when.

An then I will turn it back to the Chairman.

Mr. MILLER. First, in answer to a number of your questions, let me get the staff together and do a mapping brief. It will tell you the miles we map and what the budget looks like and how many people are involved—all those questions you asked.

As far as the pilot goes, we did—and actually, sir, you talked about rulemaking. We did publish in the Federal Register over a year ago about the levee analysis and mapping project.

When you talk about the preciseness of maps, one of the things that came into question is we always looked at levees, if they were not accredited in our program, as if by and large they did not exist.

Senator LANDRIEU. But we changed that.

Mr. MILLER. We changed it.

Senator LANDRIEU. We changed the law to make you all recognize levees that are actually physically built, whether they are Federal or local.

Mr. MILLER. And that Levee Assessment Mapping Program (LAMP), that pilot, is part of that.

We have not passed the regulation yet, but we are doing pilots. We are going to pick up a number of pilots again next year, and I think the number beyond the 25 is about 80 or so.

But it takes those levees into consideration about the flood protection value—

Senator LANDRIEU. Let me ask you something, though, and I am going to stop.

But, Mr. Miller, between now and let's say 2 years, until you all get around to the regulations and everything you have to do, what are the people in those parishes—what kind of rates are they paying? Are they paying rates that recognize levees, or are they still paying rates as if no levee was there?

Mr. MILLER. Not all those areas are subject to a look at their levees.

What we are trying to do is find out those areas where the levee structure are, and many of those are in the parishes that you identified in Louisiana.

We are trying to identify the areas where the LAMP, that process of analysis, has the most effect. So you are looking at areas of the greatest population and the greatest property value. It has the biggest bang for the dollar.

We will continue to look at those areas, but to say we would apply a levee analysis to all areas in our mapping inventory, that is not true.

Senator LANDRIEU. Well, why wouldn't you do that by just common sense?

Mr. MILLER. Because not everybody has a levee and not all of them are built to protect housing or businesses.

Senator LANDRIEU. That is—OK.

Well, let me say this; what kind of levee would be built if it was not to protect houses or—some levees are built to protect agricultural land.

Mr. MILLER. That is right.

Senator LANDRIEU. But they have the benefit of also protecting homes.

I mean, they keep fields from flooding, but they also have the benefit of mitigating against flooding to the home that happens to be on the field or built on the field.

Mr. MILLER. Right.

Senator LANDRIEU. Cotton around it, house in the middle, protect the cotton, protect the house. But you do not count that as protection?

Mr. MILLER. It is not that we would not count it. But, as we are going through and making those assessments, the assessments will come on those where we get the biggest impact.

What it means is in that limited budget that we have in mapping, I am not going to do a lot of highly rural areas because I do not get the impact for the mapping effort. I want to look at those where most of the people will be impacted.

Senator LANDRIEU. So the people that live in rural areas with not a lot of people will pay much higher premiums because you do not have the time to map them correctly.

Mr. MILLER. We do not have the resources to map the entire Nation.

Senator LANDRIEU. Yes, that is a shame, and that is not going to be OK with the Senators that represent rural areas.

Mr. MILLER. And my State is one of those.

Senator LANDRIEU. Yes. This is why I keep trying to talk about this flood program—because farmers have to live in rural areas to farm. They cannot live in the middle of the city to raise their crops. And so they are now being penalized even though they have spent their own money building levees because we have a Federal agency that does not recognize the local levees. This has to change.

I am going to end with this. I want you to note to the flood managers how disappointed I was that your organization did not support our efforts on Biggert-Waters. You all were not helpful at all. You remained completely neutral. We had thousands of organizations that came to help us pass the Biggert-Waters reform, and you all did not support that effort.

Is that correct in the record, or did you support it and we did not know about it?

Mr. BERGINNIS. Senator, no, there were—

Senator LANDRIEU. Was it yes or no? Did the Association support our efforts or not?

Mr. BERGINNIS. We did support elements of those efforts.

Senator LANDRIEU. Elements?

Mr. BERGINNIS. Yes.

Senator LANDRIEU. OK. Could you give me what you did support and what you did not support in the bill?

But you did not overall support the bill.

Mr. BERGINNIS. We supported, for example, the rescission of going to full-risk rates because those were the most impactful.

Senator LANDRIEU. OK. All right. Thank you so much.

Senator BEGICH. I am going to followup.

Again, Senator Landrieu, if you have other questions and you can stay, feel free. But, if not, I know your timing, like all of ours is crazy with all kinds of issues.

This mapping issue, to me is the most common. Every agency—USGS; the Department of Transportation (DOT); to some degree, military, depending on if they are domestic bases and so forth; FEMA. I can go through the list. Agriculture. They all have mapping processes. Not all are linked up, to say the least.

When I was mayor, we had a GIS Division. Everyone wanted to do their own maps because they believed they had the better maps, whoever that agency was. But it almost was like the baselines that these maps had were missing.

And I think the Building Department—I do not know how many different maps they used from different agencies, and then they had to overlay them and hope they had the right scale and hope they had the right baselines when they were talking about water and sewer lines, storm drain systems, storm systems, roads, whatever it might be.

And if I remember my information right—there was a GIS technical task force at one point somewhere in the world of the Federal Government, and they had recommendations on how to take all these resources and figure out how to make sure. So, if you needed more maps, you could be talking to USGS, for example, because they had a baseline that you could work from.

Vice versa, DOT, who is shooting maps all the time because they have to—all the road projects they do.

WRDA—the Army Corps of Engineers (USACE) are shooting maps all the time, because they have to when they are doing projects.

Doesn't it make sense that we just clean that mess up first because you cannot do your job?

And I think of all these others. We are doing policy around how to do building codes and so forth and making sure we have the right incentives. And, if your incentives are based on an area that is, in theory, a floodplain area, then your incentives might be greater than those that are at less risk, in theory, might be.

But, if the maps or the data are marginal—or in the case you mentioned, three-plus million miles and a million we know we have mapped to some degree, some accurate, some may not be because things change, but that other two million is not known.

Wouldn't it be best if we all hone in on this issue of mapping, get the resources and just do it and actually get agencies to agree to the baseline so we do not have everyone drawing up their own maps and then figure out why we do not have enough money for everything because when I talk to the National Oceanic and Atmospheric Administration (NOAA) on the coastal stuff they do, they never have enough money.

At the rate they go, it will be 100 years before they get close.

And I hate to break the news to them; the coast is going to change over the next 100 years.

So one storm devastates a coastline, and NOAA then is stuck. Who would like to—David?

Mr. MILLER. I can do it.

Senator BEGICH. I do not mean to leave Chris and Robert out of it, but they are probably like, thank God, we are not part of this.

But I have some questions for you separately.

Mr. MILLER. I think the first thing is to recognize some of what you have already done. And whether it was in the Biggert-Waters legislation or previous acts, you have actually required us to do that mapping coordination amongst agencies. So we do cooperate with USGS.

Senator BEGICH. With just USGS?

Mr. MILLER. No, USGS, the Corps of Engineers, the Department of Energy—

Senator BEGICH. What is the status?

Mr. MILLER. It is that interactive sharing of data.

Senator BEGICH. Please do not tell me there is a rulemaking.

Mr. MILLER. No.

Senator BEGICH. OK.

Mr. MILLER. There is not.

Senator BEGICH. But what is happening?

Mr. MILLER. Well, for instance, with the U.S. Geographic Service, we share the data.

But one of the more important things—and Chad talked about it. If you look at the flood risk map, what is necessary to make it, which is the topography, the elevation piece—

Senator BEGICH. Right.

Mr. MILLER [continuing]. As well as the hydrology.

Senator BEGICH. And hydrology, yes.

Mr. MILLER. There is a standard for shooting LiDAR. To what degree is the—

Senator BEGICH. Let me pause you on that. Is that a standard, and every agency must follow that standard?

Mr. MILLER. It is the one that we work in cooperation with USGS.

Senator BEGICH. That is not the question I have.

Mr. MILLER. If other agencies have adopted that standard—they may have—I am just not aware of it.

Senator BEGICH. See, that is my point. I was at DOT, and I can tell you the amount of work they do.

I know from when I was mayor we loved when public works were out doing work because, first, they had the money in their capital budget so we could push it a little bit further; then our planning and zoning folks could tap into it, which meant we could have our wetland maps updated.

Because we had a baseline that everyone had to use. It was not an option.

It was based on policy versus personalities or people who actually got together and worked it out.

So you and USGS are working on these things. But is it standardized to require it, and that means the contractor who comes in, that is contracted, understands this in every agency or just those agencies you are working with?

Mr. MILLER. I would—

Senator BEGICH. Do you understand my question?

Mr. MILLER. I would speculate if I said USGS—

Senator BEGICH. OK. Do not speculate.

Mr. MILLER [continuing]. Contracted or agreed with other agencies.

Senator BEGICH. OK.

Mr. MILLER. Frankly, I do not know at that level.

Senator BEGICH. Should it be?

Mr. MILLER. Should it be? Yes. It goes back to what you talked about in how we share information.

One of the opportunities for that—whether it is looking at the mapping standards. In Biggert-Waters, you set up a Technical Mapping Advisory Committee. We are in the process of establishing it. It will look at our standards for mapping, our methodologies, our modeling—those pieces.

The good news is that gets discussed not only in the Technical Mapping Advisory Committee, but in the Mitigation Framework Leadership Group.

Now you have the interagency effort to begin to look at those standards and can we adopt each other's standards and move this forward, probably not as much adopting the standard as sharing the data and applying it, sensitive to the missions.

For instance, you talked about working with the Corps of Engineers. We do that all the time.

But they use theirs for design standard. We use the same data and apply it a little different analytic to it for the standards we need for floodplain mapping. So it is not that we do not share data, but the missions are a little bit different.

Senator BEGICH. Right. But I can tell you like in BLM—working with them—they had these crazy standards in regards to land surveys in order to transfer lands to States; in our case, Alaska.

They changed the methodology, and the next result is they sped up the process because they realized the technology has dramatically changed from the regulation. And they are kind of fearful of touching the regulation, but they have changed and done some modifications.

So I guess let me ask Chad, and then I am going to go to Christopher and Robert, and then close off. I do not mean to keep you here this long, but let me—do you believe that there should be some baseline?

I mean, I think at BLM. There are huge lands, touching lands and figuring out who gets what.

The Department of Interior, when they are doing land in trust for native land allotments or other lands, they are doing surveys and other work. Topography is part of it. Dimensions, waterways, all this is part of it.

Am I missing something here?

Mr. BERGINNIS. No. I think you are onto an important issue and one where, quite frankly, we have seen a lot of progress over the last few years, more broadly, not just mapping but in flood management issues.

Over the last couple of years you have two interagency groups—the MitFLG, as Mr. Miller mentioned, and then also the Federal Floodplain Management Interagency Task Force.

This Technical Mapping Advisory Council, which is in the process of being stood up, will go to exactly your point because some of the other Federal agencies, as well as stakeholders, are part of that new Federal Advisory Committee Act (FACA) committee. That is going to give them the opportunity to discuss this very thing.

And so we hope, from ASFPM's side, that the TMAC will be providing some good recommendations to the FEMA Administrator to make some of what you are saying a reality.

Senator BEGICH. Will it include the U.S. Conference of Mayors, National Association of Counties (NACo) and National League of Cities?

And the reason I ask you that is because, as you know and some of the testimony cited, a lot of local governments are doing stuff now. Why wouldn't we want to have them at the table?

So when, for example, I was mayor, the planning and zoning map that they are doing for our local wetlands development—they make sure that it is the exact same standard that FEMA needs. So, when it is all done and said, actually, you are now leveraging multiple layers and taking that minimal budget and actually expanding it far beyond.

Are they part of the equation because they should be?

Mr. BERGINNIS. Senator, I just do not recall the identified folks.

Senator BEGICH. I am looking over here. They should be.

Mr. MILLER. I wish I had it in front of me, but in the law, what Congress prescribed was 16 members of the TMAC that represent a variety of interests. So it is not just Federal interests; it is local government interests and other interests in the TMAC.

Probably just as important, as we move it out, they will be able to subset that and bring others into the conversation.

Senator BEGICH. OK.

Mr. MILLER. Clearly, with 16 and you talk about those that have a role in mapping and even just floodplain mapping, it gets to be an expansive group.

The good news is when we plan on doing the execution we need to bring others into the conversation that may not be official members, but they will be part of the conversation.

Senator BEGICH. I would always say the guideline of the Committee is a guideline, in my personal opinion, but I know it is statutory; it says 16. But I anticipate you will be innovative, to ensure as many stakeholders are at the table to maximize the value of this mapping.

Mr. MILLER. Yes, sir.

Senator BEGICH. Wouldn't it be nice to have all these local governments have the same standards because you will just leverage unbelievably for what you can do?

Mr. MILLER. Yes. Well, frankly, sir, I remember doing it, as you do, at the State level and even standards there.

I think there are two parts I want to mention, though, because I think it is important.

One is as we do the Mitigation Framework Leadership Group—we just talked about expanding the membership and inviting people into the mapping piece.

Senator BEGICH. Absolutely.

Mr. MILLER. It is not just Federal interagency.

Senator BEGICH. That is right.

Mr. MILLER. This is a chance to bring in private sector and private nonprofits and territories and local governments and Indian tribes, all into that discussion. And we are working in those areas.

For the TMAC, we have to go through all the FACA pieces of that and all that vetting. So we are going through that with the TMAC.

At the end of the day, it brings that together.

But the other piece that Chad and I and others should hit on is what we call contributing technical partners in our mapping efforts. It really does recognize the work that local governments are doing in their own behalf for mapping.

And there are a number of them that are doing a lot of significant work and, frankly, taking our regulatory products and executing them well beyond those requirements. North Carolina is one of those, and there are others that are doing the same thing.

Senator BEGICH. OK.

Mr. MILLER. It then becomes a true community partnership, and they begin to own their maps instead of simply adopting what somebody else presents to them.

Senator BEGICH. Very good. Let me switch a little bit.

Again, thank you for the conversation.

Robert, let me ask you on the BuildStrong. I know one of the biggest issues you all have is building code enhancements. Are there other types of incentives?

Put the building codes over here for a second.

I can only tell you as, again, a former mayor, when the building code revisions came, it was—I have never seen so much interest in every element of the code, which is usually big.

But are there other incentives that we can do?

Obviously, again, I am assuming you and Christopher and others would agree that first the data is very important. If you do not have baseline data, it is very hard to know how to implement those incentives.

But let's assume for a moment the data are good, that it is all available, no matter what community, what size community you go to.

What are other incentives that you would think other than, or in conjunction with, building code standards and other things?

What would be other things that would really help get people focused on mitigation rather than waiting for a disaster to occur?

Mr. DETLEFSEN. Well, Senator, one of them is a legislative proposal that I think I mentioned in my oral testimony.

Senator BEGICH. You did.

Mr. DETLEFSEN. And there are a couple others actually that are mentioned in our written testimony.

The legislation that would allow homeowners and property owners to set up tax-free savings accounts that they could use solely and exclusively for disaster mitigation purposes, to mitigate their homes and make them more resilient and so forth.

Senator BEGICH. That would be an incentive for them?

Mr. DETLEFSEN. Well, sure, because I mean economic—

Senator BEGICH. Yes.

Mr. DETLEFSEN. Providing economic incentives for people to do the things that are, frankly, in their own best interest are sometimes the best ways to get them to do things that are in their best interest.

Senator BEGICH. Right. I know in Anchorage we always—and I say Anchorage, Fairbanks, and I am thinking of areas in Kenai where forest fire activity can be very problematic. And mostly we have some issues in the south central areas with the spruce bark beetle that is wiping out a lot of trees and, of course, creating basically ignition capacity.

Do you think people are incentivized by the fact of clear this area away from your house because if you do not, here is how close this dead wood is, and it could be basically a fire starter if you are not careful?

Or, do you think you also have to, in situations like that have economic incentives to encourage them to do that buffer zone, where they see out of every three trees there are two that are dead, that are pretty dry, and could create situations in the future?

Mr. DETLEFSEN. Well, the economic incentives, I mean, are also—

Senator BEGICH. A big driver.

Mr. DETLEFSEN. They are a driver, and they also allow people to keep more of their own money so that they have it available to spend on these kinds of things—clearing more brush as opposed to less brush.

Senator BEGICH. Do you think—this may not be something, obviously, that can be done on a Federal level.

But do you think home builders we will use as an example—if they were incentivized through their building permitting process—I have seen what the permits cost here, unbelievable.

Well, there are no trees really much when you are building, but I am thinking of Alaska.

You could build in an area, and the building permits—if there were incentives to offset some of that cost, is that a local issue that you guys think about when you are thinking of these kinds of policies, or do you mostly focus on the Federal kind of component?

In other words, if you went in to get a building permit to build a new home, if you add certain zones to clear around your area, fire-safe zones and other disaster potential, that your permit would be less cost.

Mr. DETLEFSEN. Well, let me first make clear that the building codes that we would like to see adopted are ultimately local and regionally developed.

Senator BEGICH. Adopted, right.

Mr. DETLEFSEN. I mean, they are uniform in the sense that they are developed by national or international bodies, but the codes themselves are responsive to the particular risks that are prevalent in particular regions.

Senator BEGICH. Right.

Mr. DETLEFSEN. So, in a place where there is wildfire risk—

Senator BEGICH. Like western States.

Mr. DETLEFSEN. Sure. Then the codes that we would like to see put into place would provide for things like fire-resistant roofs and

building materials that are less susceptible to wildfires when they occur.

Senator BEGICH. Versus some place like an urban city like this, in a core area, it might be a little different.

Mr. DETLEFSEN. Right.

Senator BEGICH. For example, as I was describing to my son, we are really in a swamp here in the sense of the height we are in. When there are flash floods, it floods. It can be very quick here.

So you have a different situation here than forest fires. You have flooding issues that could occur. So you might have different incentives.

Mr. DETLEFSEN. Absolutely.

Senator BEGICH. OK. Chris, thank you very much.

And, again, has GAO—I know in your testimony you had some comment, but I want you to verbalize this if you can.

What are some of the things that may be—and not to pick on FEMA, but they are the ones that do mitigation or FEMA management and so forth.

Are there things that are disincentives that FEMA has within its processes, may they be regulation and/or programs, that cause mitigation to be less readily available or people who take it on, you might say, maybe individuals or local or even by an agency?

Mr. CURRIE. Thank you for the question, Senator Begich.

Senator BEGICH. Sure.

Mr. CURRIE. As you know, we have ongoing work for your Committee. So we have not actually reported on specific disincentives.

Senator BEGICH. Right.

Mr. CURRIE. But one of the things we are looking at is the various programs after a disaster, such as HMGP and, as you know, the billions and billions that go out the door in public assistance funds. Public assistance dwarfs the HMGP.

Senator BEGICH. Right.

Mr. CURRIE. So one of the things that the Sandy Recovery Improvement Act (SRIA), allowed was for better alignment of those programs. It used to be where HMGP and the mitigation grants kind of came in afterwards and were an afterthought after billions had already been obligated.

We are spending so much on storms. I think it makes a lot of sense that those things be integrated and to use those massive amounts of funds for mitigation purposes, too.

The other thing is trying to cut down on red tape, honestly. There have been challenges in the past of aligning those programs and the paperwork requirements for one versus the other after a disaster.

Within FEMA, those programs are completely separated organizationally, too.

So this is something that we are going to look at in-depth.

Senator BEGICH. Good.

Mr. CURRIE. Specifically in response to Hurricane Sandy, we are going—and not to just focus on one part of the country.

Senator BEGICH. Right. That is a big example you can draw from.

Mr. CURRIE. Exactly. We can go in and look at massive Public Assistance (PA) and HMGP projects and actually talk to States and locals and see what the process has been, and we would like to find

out if they have made improvements on some of these things that you allow them to do.

Senator BEGICH. Sure. Well, one good example—and either one of you can correct me if I am wrong here.

The work they have done in getting debris removal changed a little bit—for example, reimbursement to local public works and not requiring overtime (OT) all the time, that you have to always have overtime, that you can actually reimburse a system that exists today.

I know local governments like it because they can actually do the work because in a way, even though it was not overtime, they shifted to emergency, which meant all their regular work stopped, which was a cost.

But when they were required just to do overtime, I can tell you as a mayor: OK, but we have the crews now on regular time. We will just divert them from all this other work they need to do, but because we are in a disaster moment, we need them to reassess and reshift.

Is that an example of where some changes have started to occur that are cutting the red tape and just saying here is the check and get it done? Is that an example?

Mr. CURRIE. Chairman, I think debris removal is a good practical example, and it actually made me think of another point, which is it is not just FEMA in these disasters. I mean, HUD was given almost \$17 billion.

Senator BEGICH. Right.

Mr. CURRIE. DOT was given \$13 billion in Hurricane Sandy.

Senator BEGICH. Right.

Mr. CURRIE. So it is not just FEMA's mitigation programs anymore.

And at the Federal level, this is what we are going to really look at—how do these things mesh up and how are these programs working together—because there are massive amounts of money in other places, not just FEMA.

Senator BEGICH. When do you think, that you will have some of that work started and to bring forward, that we could look at as a Committee?

Senator BEGICH. Yes.

Mr. CURRIE. But we will come up and brief you on the results, and we are looking at later this year, hopefully, in the fall.

Senator BEGICH. Excellent. Good.

I am going to end there only because, one, thank you, unless you have other comments that people want to make. I do not want to cut you off.

But for me, first, your written testimony, your verbal testimony—has been very helpful. I think it gives me a little food for thought of some things that I think we could be doing here.

I think the mitigation is always going to be a challenge because no one wants to fund it.

And we talk about it after, usually, a disaster. And then we go, why didn't we do—fill in the blank.

Then we throw a few nickels toward it, and then we go, that should solve the problem. And, really, it never does.

I mean, the idea—and I use an example. It was in Kotzebue, I think, or it might have been Nome. I cannot remember which one now, but it was a road stimulus project.

It was not a complicated project, but it was a pretty important one. And it was just to create a new road along the coast. It was not a long strip, but they expanded it a little bit in the sense of its width and its height.

Why did they do that? Because, sure enough, 12 months later, an ocean flood occurred. Luckily, that road was there because it stopped the flood from going into the city.

If it would have gone into the city, we probably would have estimated half of that community would have been wiped out in the sense of a flood.

Now that would have not—that did not qualify for mitigation, but it qualified, and luckily, we had it.

I get criticized all the time about stimulus money, but that is an example that saved a community and a road that was designed a little differently in order to create a buffer to protect the city when really it was a transportation corridor.

That, to me, is creative thinking that saves us a lot of money. And when I think of that city, what could have happened, because it was a winter storm which, you can imagine, in the northern part of Alaska a flood occurring in the winter is even worse because it is hard to work in those kinds of conditions and then we have no places to put people.

So that is the kind of innovation that seems to be needed more and more.

So, as you work on those issues and recommendations—and I know the work you guys are doing, of course, from the mapping and from how do we build things the right way.

I mean, a road is a great example. Roads can be incredible erosion protectors, flood protectors, if designed the right way, at least from Alaska's perspective, when it comes to coastal areas.

And I just greatly appreciate the work you all have been doing.

I know we get in a tug-o-war because we get frustrated. Maybe it is just my mayor days coming back, where we would just go do it, and if we think of a logical way to bring the stakeholders to the table and go.

I am hopeful that we can continue to have this conversation about mitigation. We will continue to have ideas put on the table. And then we will do what we can through this Subcommittee but also through the larger Committee because our goal in this Committee also has regulatory reform.

And that is why I was really having two hats on here—one as a full Committee Member but also as a Subcommittee Member.

What can we be thinking of to create this system that moves good ideas forward? The two dozen ideas you have—I would love to implement some of those.

I think of the legislation you are talking about. I fear passing it and then going, how long will it take us to implement it, not because it is an individual, just because the system has gotten to the point where it takes so many years to move something forward.

And one thing disasters do not wait for—regulatory process.

In Alaska, we probably experience some form of disaster every 2 to 3 weeks. We just had another earthquake—small in our comparison. In another community, it might have been very large in the sense of its magnitude.

But we deal with this all the time, and we do not have the patience to wait for stuff, to have the regulation drawn up or whatever processes.

So thank you for the opportunity to have you here today. If you have any last comments, I am happy to take them, and then we will close up the meeting.

Any last comments from any of the members? Chad.

Mr. BERGINNIS. Just two things. One of those goes back to the mapping question, as it relates to not knowing what our total mapping need is in the country.

In our Mapping of the Nation Report, we did a cost model, and we estimated what it would cost to get the job done, to map the entire country. And that cost—

Senator BEGICH. May I ask what that cost is?

Mr. BERGINNIS. It is between \$4.5 and \$7.5 billion.

We have invested right now about \$4 billion in the flood mapping inventory.

Senator BEGICH. So less than 6 percent of what we spend on Hurricane Sandy.

Mr. BERGINNIS. Yes.

Senator BEGICH. That is like overhead in an operation, but go ahead.

Mr. BERGINNIS. Yes. But it also puts into perspective the good work that the Congress has done and I especially wanted to mention Senator Reed's leadership in establishing the National Flood Mapping Program and the authorization of \$400 million a year.

So, in practical terms, if it was fully funded for 10 to 15 years, we would get the job done.

Senator BEGICH. Now that is a very good point.

Any other last comments before I—

Mr. MILLER. I would offer one, and you mentioned it a couple times. In working with GAO and others, the Sandy Recovery Act afforded us a lot of opportunities to marry things in different ways.

Sir, you talked about the debris and debris removal, things that we are doing now that were largely built out of Hurricane Sandy and Hurricane Sandy experiences.

We talk about integrating what we call PA, or 406 mitigation, with our traditional 404 programs. We have done some things there, for instance, in writing project worksheets on the public assistance side for Long Island Power, a public utility.

Senator BEGICH. Yes.

Mr. MILLER. The traditional public assistance probably would have been, if I remember the number right, about \$830 million in their disaster costs to recover in a normal way.

But because we moved toward mitigation, both on the public assistance side and on our side, not in just allowing it but requiring them to move toward a mitigative environment, the cost went up significantly. That worksheet went from \$835 million to about \$1.3 billion. But the savings, the cost-benefit, against future disasters is significant.

Senator BEGICH. Right.

Mr. MILLER. The hard part to sell in any area, whether it is a public utility since there is a cost-share or the Federal Government and others, is I take the mitigative action, but it comes at a cost. And over what term do I see the return on that investment? That has been a big part of this discussion.

In this case, Long Island Power wanted to make this investment.

We are doing it in other areas. We did it in Moore, Oklahoma as we built safe rooms in schools.

We have opportunities where we put mitigation together, but without a local community wanting to move in that area, to put their money forward, to share in that cost, it can become stagnated in a hurry.

So I will give one other example because I do not want to lose this, and it has to do with mapping. When we did best available data and tried to set a standard, knowing people would be adversely affected in their insurance in New York and New Jersey, we put the data out, knowing it was not as precise as it could be if we fully vetted it.

But we wanted to give them the best information we had available at that time so they could move forward. The point was to allow them to move forward quickly and rebuild.

Because of that preciseness of the data, or what they saw as impreciseness of the data—and in this case the statement was that we overstated the risk.

Now think of this; we overstated the risk.

People stopped building until the maps became more precise because what they were looking for was the difference between whether they were in the special flood hazard area or they were not—

Senator BEGICH. Sure.

Mr. MILLER [continuing]. In the standard to which they needed to build.

We have people living on fine margins that are trying to make decisions in an imprecise mapping world. It is not that the maps are not true, but we do not pay for a level of preciseness—

Senator BEGICH. Right.

Mr. MILLER [continuing]. That gets you to live in margins of three or four feet, or two or three blocks.

Senator BEGICH. Gotcha. Thank you very much.

Also, I should have said earlier, thank you for I think it was 1.3 million of HMGP funds for Galena. That is a good example of using some mitigation even though it was post because you are getting them to think about the future, and that is very helpful.

Let me say to you all of you, thank you very much again.

We will keep the record open 15 days for other Members who may have questions or comments for the record.

And, again, all your written testimony will be included in the record as well as, obviously, your verbal testimony.

I know, Mr. Miller, Senator Landrieu had some requests that I know you will followup with her, and I appreciate that.

Again, thank you all very much.

At this time, the Committee hearing is adjourned.

[Whereupon, at 3:59 p.m., the Subcommittee was adjourned.]

APPENDIX

STATEMENT

OF

DAVID MILLER
ASSOCIATE ADMINISTRATOR
FEDERAL INSURANCE AND MITIGATION ADMINISTRATION
FEDERAL EMERGENCY MANAGEMENT AGENCY
U.S. DEPARTMENT OF HOMELAND SECURITY

BEFORE

THE

COMMITTEE ON HOMELAND SECURITY AND GOVERNMENTAL AFFAIRS
SUBCOMMITTEE ON EMERGENCY MANAGEMENT, INTERGOVERNMENTAL
RELATIONS, AND THE DISTRICT OF COLUMBIA
U.S. SENATE
WASHINGTON, D.C.

**“THE ROLE OF MITIGATION IN REDUCING FEDERAL EXPENDITURES FOR
DISASTER RESPONSE”**

Submitted

By

Federal Emergency Management Agency
500 C Street, S.W.
Washington, D.C. 20472

May 14, 2014

Introduction

Chairman Begich, Ranking Member Paul and Members of the Subcommittee, I am David Miller, Associate Administrator for the Federal Insurance and Mitigation Administration (FIMA) at the Department of Homeland Security's (DHS) Federal Emergency Management Agency (FEMA). I am grateful for the opportunity to be here today.

In this testimony, I will discuss FEMA's mitigation programs and how we educate, incentivize and fund state, local and tribal efforts to build stronger communities that collectively create a nation more resilient to an increasing number and intensity of hazards.

Mitigation efforts support more rapid recovery from disasters and lessen the financial impact of disasters on the nation. Stringent building codes, flood-proofing requirements, earthquake design standards, wind-bracing requirements for new construction, and repair of existing buildings are all examples of mitigation in action.

FEMA has made significant strides in the last three years in the area of mitigation, bringing the larger mitigation community together around shared doctrine, partnering with state, local, tribal, and territorial governments and giving communities the funding, tools and information they need to make informed, data-driven decisions that minimize their risk.

This work was bolstered in 2011, with the release of Presidential Policy Directive 8 (PPD-8) on National Preparedness. This directive defined the mitigation mission area for the first time and required the development of national frameworks based on each mission area. As a direct result, FEMA released the National Mitigation Framework in May 2013. The Framework in turn established the Mitigation Framework Leadership Group (MitFLG). The MitFLG is a senior level group that works to coordinate national-level mitigation activities and implement policies in consultation with other federal agencies and state, local, tribal and territorial governments.

Federal, State, Local and Tribal Role in Mitigation

Most mitigation occurs at the local level, where communities apply a localized understanding of risks to effective planning and identify strategic mitigation options. Local and tribal governments are directly connected to community plans and goals and, in many cases, bring more precise understanding of local vulnerabilities to bear on risk reduction activity. State, tribal, territorial and local governments are responsible for the public safety, security, health and welfare of the

¹ As set forth in PPD-8, "mitigation" refers to those capabilities necessary to reduce loss of life and property by lessening the impact of disasters. Mitigation capabilities include, but are not limited to, community-wide risk reduction projects; efforts to improve the resilience of critical infrastructure and key resource lifelines; risk reduction for specific vulnerabilities from natural hazards or acts of terrorism; and initiatives to reduce future risks after a disaster has occurred.

people who live in their communities, while the federal government provides some of the tools and the funding they need to mitigate and create a safer environment for their citizens.

With regard to grant funding, local and tribal governments are responsible for applying for funding, managing approved projects and maintaining records. States manage the overall mitigation program within the state, establishing funding priorities, and selecting projects for funding based on those priorities. FEMA oversees and manages the Hazard Mitigation Grant Program (HMGP), Pre-Disaster Mitigation (PDM) and Flood Mitigation Assistance Program (FMA) programs, establishing minimum criteria for project eligibility, providing technical assistance and reviewing projects selected and submitted by the state for eligibility.

National Flood Insurance Program

The National Flood Insurance Program (NFIP) serves as the foundation for national efforts to reduce the loss of life and property from flood. The program identifies areas with risk of flood, mitigates the long-term risks to people and property from the effects of flooding, and makes insurance against the risk of flood generally available in participating communities. The NFIP works closely in partnership with participating private insurance companies – commonly known as “Write Your Own” companies – to market, sell, administer and adjust claims for policyholders. By encouraging sound floodplain management efforts, the NFIP is estimated to save the nation \$1.7 billion annually in avoided flood losses.

Building Codes

With regard to building codes, states and communities voluntarily adopt building codes based on their local needs and priorities. They often use consensus codes such as the International Codes, a family of building and fire safety codes that provide a set of coordinated, comprehensive and contemporary building and fire safety standards. Throughout the United States, code enforcement officials, architects, engineers, designers and building contractors work with a consistent set of requirements that, wherever adopted, lead to consistent code enforcement and higher quality construction. Despite the value of consensus codes and standards, their adoption from state to state varies. The most effective codes continue to be those that are up to date and enforced.

Last October, FEMA issued a the Report on Inclusion of Building Codes in National Flood Insurance Program to Congress to comply with Section 100235 of the Biggert-Waters Flood Insurance Reform Act of 2012, Pub. Law No. 112-141. The report describes the impact, effectiveness, and feasibility of including widely used and nationally recognized building codes as part of FEMA NFIP floodplain management criteria. FEMA found that approximately 70 percent of NFIP communities currently enforce building codes with flood provisions based on the model International Codes. Including building codes as part of the NFIP has the potential to reduce physical flood losses and other hazard losses, which in turn would positively affect the

local land use planning and regulatory climate. Insurance losses would be also reduced for the properties required to comply with building codes because those properties would sustain less damage.

Mitigation and Resilience

As part of FEMA's effort and its stated strategic priority to enable disaster risk reduction nationally, FEMA is leveraging its partnerships, programs, risk information and tools to catalyze efforts to advance risk-based decision making across the nation to enable risk reduction through mitigation. This effort will help to build community resilience through ensuring a common risk picture, better targeting of resources, and a collaborative national effort to build the capabilities that will best address targeted risk areas.

Focus areas to enable disaster risk reduction nationally include:

- Enabling greater risk-informed decision-making by improving the quality, accessibility and use of risk information and allowing for more data-driven decision making. For example: by updating flood hazard maps to include advisory base flood elevations when appropriate after a major flood event and the continued implementation of the Threat and Hazard Identification and Risk Assessment process. The Administration also recently launched climate.data.gov which will provide information that communities can use to better prepare for the impacts of climate change.
- Building the appropriate preparedness capabilities to address the identified risks through continued implementation of the National Preparedness System. For example: through the implementation of the National Mitigation Framework and National Disaster Recovery Framework, long-term disaster recovery planning, training and education, core capability development and sharing of lessons learned.
- Leading greater federal interagency collaboration around risk reduction and resilience, building upon the establishment of the MitFLG and implementing a consistent federal flood risk standard for federal funds in Hurricane Sandy rebuilding. For example: through the development of a Federal Flood Risk Reduction Standard under the President's *Climate Action Plan*.
- Unifying the Flood Mitigation Assistance, Repetitive Flood Claims and Severe Repetitive Loss grant programs under the FMA program, which helps FEMA deliver flood-related grants to states, local and tribal communities more effectively, while reducing future claims to the NFIP. These grants provide funding to states, federally-recognized tribal governments, and communities for the reduction and elimination of the long-term risk

flood damage poses. They provide funds on an annual basis so that measures can be taken to reduce or eliminate risk of flood damage to buildings insured under the NFIP. These measures include the acquisition and demolition of flood prone structures, the elevation of homes above expected flood levels and the construction of minor drainage projects to reduce the impact of storms.

- Integrating the Public Assistance and Hazard Mitigation Assistance (HMA) programs so they work together and concurrently, rather than consecutively, with public assistance funding being applied and used before HMA funding. The approach will better align funding and leads to better outcomes, while lowering the risk of projects losing momentum or being duplicated across program areas.

Encouraging Mitigation Throughout the Nation

FEMA helps thousands of communities and tens of thousands of individuals avoid the suffering and economic loss associated with disaster damage through encouraging the development of mitigation plans, funding mitigation activities, incentivizing sound floodplain management strategies and developing resources – such as maps – that inform risk.

FIMA's Community Education and Outreach Group also promotes effective hazard mitigation through community education, outreach, training and coordination with the public and private sectors. To achieve these goals, the Outreach Group provides advice to the public on hazard mitigation techniques and measures through Disaster Recovery Centers, other disaster assistance facilities, community meetings and special events.

In cooperation with the state, this group also promotes partnerships and trains local officials, the construction industry, and residential and commercial building owners. It also identifies, documents and disseminates best practices.

Encouraging the Development of Plans: Hazard Mitigation Planning

Mitigation plans are the foundation for effective hazard mitigation. A mitigation plan is a demonstration of the commitment of the whole community to reduce risks from natural hazards and serves as a strategic guide for decision makers as they commit resources.

The mitigation planning process includes hazard identification and risk assessment, which helps planners create a comprehensive mitigation strategy for reducing risks to life and property. The mitigation strategy section of the plan identifies a range of specific mitigation actions and projects being considered to reduce risks to new and existing buildings and infrastructure. This section includes an action plan describing how identified mitigation activities will be prioritized, implemented and administered.

FEMA's Hazard Mitigation Grants and Planning Group supports state, local and tribal participation in the Agency's mitigation programs by providing technical assistance as they develop multi-hazard mitigation plans.

FEMA also provides funds for communities to develop plans under the FEMA's HMA programs. These funds are provided to help state, tribal and local government with the resources they need to develop mitigation plans, which are required for receipt of Hazard Mitigation Grant funding.

Funding Communities: Grant Programs

FEMA's HMA programs provide funds for projects that reduce the risk to individuals and property from natural hazards. These programs enable mitigation measures to be implemented before, during and after disaster recovery. Local jurisdictions and tribes develop projects that reduce property damage from future disasters and submit grant applications to the state. The states submit applications to FEMA based on state criteria and available funding. The HMA programs include:

- Pre-Disaster Mitigation Grants are designed to assist states, territories, tribes and local communities in the implementation of a sustained pre-disaster natural hazard mitigation program to reduce overall risk. The President's FY 2015 budget request includes \$400 million for the Pre-Disaster Mitigation program in the Opportunity, Growth, and Security Initiative. These funds will help augment adaptation planning by States, tribes and local communities and help them prepare for events such as wildfire, floods, and other disasters that could be exacerbated by climate change. This, combined with the \$150 million in base funding for NFIP mitigation grants, represents an increase of \$425 million over the 2014 spending level. These programs provide grants for eligible mitigation planning and projects that reduce disaster losses and protect life and property from future disaster damages, providing another option for applicants. This includes support for adaptation planning and pilot projects for cities and communities through hazard mitigation assistance, building on Administration efforts to implement the National Mitigation Framework. For mitigation funding provided through the Flood Insurance Program, this can include planning grants to prepare flood mitigation plans; cost-effective project grants to reduce flood losses; structure elevation; and retro-fitting of existing buildings. In FY 2013, FEMA's PDM programs helped local communities across the United States prepare for future disasters by obligating more than \$31 million in mitigation grants. These measures are expected to result in losses avoided of approximately \$93 million.

- The Hazard Mitigation Grant Program provides grants to implement long-term hazard mitigation measures after a major disaster declaration and to break the cycle of damage, rebuild and damage. Funding is available to implement projects in accordance with state, tribal and local priorities. Currently, FEMA is seeking public comment regarding administration of the HMGP and looks forward to using the public's input to inform the development of a new method of program delivery that may delegate certain program administration authority to States and tribes. Hazard Mitigation provides assistance for actions taken to prevent or reduce long-term risk to life and property from natural hazards. In FY 2013, more than \$701 million in HMGP program funds were obligated, while in FY 2014, more than \$362 million has been obligated thus far, resulting in more than an estimated \$2 billion in losses avoided. To date, FEMA has obligated more than \$8.5 billion to states and Indian Tribal Governments in HMGP funding. We continue to work with the applicants as they develop new applications and as they implement approved HMGP projects.
- The Flood Mitigation Assistance Grants program provides funding to reduce or eliminate risk of flood damage to buildings insured under the NFIP. Eligible applicants and/or sub-applicants for funding include state, local and tribal governments. FEMA offers three types of FMA grants, including: planning grants to prepare flood mitigation plans, project grants to implement measures to reduce flood losses – such as elevation, acquisition or relocation – of NFIP-insured structures and Management Cost Grants for the state to help administer the FMA program. Since 1996, FEMA has obligated more than \$311 million in FMA funds for mitigation. The President's FY 2015 budget request includes \$150 million for the FMA grants program.

These efforts have a beneficial impact at the community level. For example, in Alaska, FEMA has awarded approximately \$2.7 million since 2013 in HMGP funding to acquire 11 homes in the City of Cordova; relocate 3 homes in Alakanuk; bolster warning systems in the City of Bethel; stabilize the embankment for the Alaskan Railroad and construct a new bridge; perform an avalanche study for Mt. Juneau; install seismic shut off valves on all fire stations in Anchorage; bury power lines in Anchorage; and relocate power lines in Kenai.

In Kentucky, FEMA has awarded more than \$10 million in HMGP funding in 2014 to acquire 65 homes in Boyd, Clark, Fleming, Louisville, Lewis, McCracken, Pike and Union counties, as well as to build 12 safe rooms in Allen, Warren and Webster counties. This funding also helped improve draining systems in Hopkinsville, Cooper Park, and the City of Richmond; reconstruct road bridges in Grayson, Grundy and Marion Counties; and update the mitigation plans for the state, Louisville/Jefferson County and the University of Louisville.

The families in these homes have chosen to relocate, making way for open space that benefits these local communities and stops the cycle of damage, rebuild and damage through effective mitigation.

Incentivizing Communities: Community Rating System

The Community Rating System (CRS) is a program administered by FEMA that provides lower insurance premiums under the NFIP. Communities apply to participate in the CRS, and flood insurance policy holders of participating communities pay lower premium rates based on the implementation of floodplain management practices and other mitigation activities. Through the CRS, the cost of insurance is reduced where flood risk is reduced.

Communities earn CRS credit points toward their rating, and thus earn premium discounts. The CRS recognizes communities that:

- Require new buildings to be constructed above the base flood elevation;
- Develop flood risk data and maps that supplement the flood insurance study data provided by FEMA;
- Maintain flood plain areas as open space; and
- Educate the public on best practices

As communities strive to recover from major flooding events, many consider how to rebuild to ensure greater future resiliency. This was the case in the aftermath of Hurricane Sandy, as many New Jersey communities impacted by the storm used technical guidance provided by FEMA to rebuild better. This guidance described the CRS credit available to communities if they would require certain damaged buildings to be elevated well above the established base flood elevation. Sixteen jurisdictions in New Jersey are making these changes, exceeding minimum requirements, reducing the cost of their flood insurance and creating safer environments for their citizens.

In Alaska, six communities participate in CRS, including the Municipality of Anchorage, and the City of Seward, which are the most advanced CRS communities in the state. The Municipality of Anchorage earns a 20 percent flood insurance premium discount for 252 policyholders. In Kentucky, 18 communities participate in CRS. Louisville-Jefferson County Metro Government has the most advanced CRS Class in the state, with 4,135 policy holders earning a 30 percent premium discount.

The CRS is currently seeing significant growth of inquiries about participation. In the last several years, approximately 40 communities have joined the CRS every year, with approximately 90 communities advancing in CRS Class annually.

In total, 1,296 communities participate in the CRS program, representing 67 percent of all NFIP flood insurance policies.

Educating Local Communities: Mapping Program

Mapping and identifying flood hazards enables informed, smart development and encourages communities to adopt and enforce minimum floodplain management regulations. These efforts minimize the financial impact of flooding on individuals and businesses, and mitigate the effects of flooding on new and improved structures.

To develop Flood Insurance Rate Maps (FIRMs), FEMA contracts with trusted, credible, experienced, credentialed and licensed engineering firms to map communities. To ensure that the maps incorporate the most current and accurate supporting data, FEMA engages state and local governments, the public broadly, professional engineers and licensed surveyors in all phases of map production, from data acquisition through flood hazard analyses, and ultimately to floodplain delineations. During the process of community input, FEMA encourages individuals and communities to provide their own data for FEMA's consideration. Finally, FEMA vets and publishes each individual map, and then each community follows its own established process to gather additional community input and formally adopt the maps at the local government level. In addition to having the opportunity to contribute to the development of these maps, FEMA also has a process in place for homeowners to address any concerns they have with these finalized maps, giving them the option to comment on and appeal them.

FEMA consistently releases new flood maps and data, giving communities across America access to helpful, authoritative data that they can use to make decisions about flood risk, enabling safer development and rebuilding following disasters.

These FIRMs are critical not just because they give communities the information they need to help avoid future risk, but because they also help set actuarially sound insurance rates. Thus, FEMA is committed to ensuring that FIRMs are both accurate and reflect current risk.

Value of Mitigation

The National Institute of Building Sciences' Multi-hazard Mitigation Council estimated that for every dollar invested in hazard mitigation, a savings of four dollars is achieved. Mitigation programs save the American public an estimated \$3.4 billion annually through a strategic approach to natural hazard risk management, including the value of more stringent building codes.

Investments in mitigation also serve to buy down risk, meaning that making positive changes as part of a mitigation plan lessens the probability of risk. Additionally, mitigation contributes to creating a safer environment for citizens in which they are more likely to be safe and out of harm's way.

Looking Forward

Mitigation Framework Leadership Group

The National Mitigation Framework was released in May 2013 and established the MitFLG, a senior level group that works to coordinate national-level mitigation activities and implement policies with other federal agencies and state, local, tribal and territorial governments. More broadly, the MitFLG is focused on creating a national culture that embeds risk management and mitigation in all planning, decision making and development.

The MitFLG held its inaugural meeting in July 2013 and meets quarterly. The group is currently focused on:

- Inviting the first cohort of state, local, tribal and territorial members to serve two year terms in the Group.
- Acting on the President's Climate Action Plan, FEMA is working with federal agencies to evaluate their flood-risk reduction standards for federally funded projects to reflect a consistent approach that accounts for sea-level rise and other factors affecting flood risks.
- Following up on recommendations from the Hurricane Sandy Rebuilding Strategy, including: applying infrastructure resilience guidelines to all federal infrastructure investments and projects for Hurricane Sandy recovery; institutionalizing regional approaches to resilience planning in the National Disaster Recovery Framework and National Mitigation Framework; and encouraging states and localities to adopt/enforce the most current version of the International Building Code and International Residential Code.

Climate Adaptation

In support of the Executive Order 13563 – Preparing the United States for the Impacts of Climate Change, and the President's Climate Action Plan, FEMA plays a leading role in helping prepare the United States for the future impacts of climate change, including considering sea level rise, increasing intensity and duration of storms, changing drought and fire risks, and shifting threats to human health and disease patterns.

FEMA is working to incorporate climate change into our data collection, knowledge transfer and mitigation planning. The Agency uses the best available science to understand expected climate change impacts on natural hazards. As we work to reduce risk nationally and address both hazards and threats, FEMA also is working to integrate climate adaptation into its approach and to coordinate efforts across the federal government. Specifically, FEMA is integrating climate adaptation into the Agency's priorities by:

- Facilitating climate-resilient investments by building ways to demonstrate the applicability and cost effectiveness of specific risk reduction measures for climate adaptation;
- Developing actionable tools and data by providing innovative tools that help emergency managers and whole community partners effectively integrate future risk considerations into standard planning and decision-making processes.
- Advancing climate adaptation knowledge and capacity by disseminating best practices and establishing partnerships, pilot programs to test adaptation activities.

We are approaching all of these efforts with an awareness that understanding future risks is not enough – we must develop tools and resources that help communities take action to reduce these risks, support communities that are making changes and eliminate barriers to implementation – all while building the knowledge base of our emergency management community.

Conclusion

Successful mitigation efforts are a shared responsibility requiring the engagement of all levels of society and of government. Through its mitigation programs, FEMA educates, incentivizes and funds state, local, tribal, and territorial efforts to build stronger communities that collectively create a nation more resilient to an increasing number and intensity of hazards.

FEMA has made significant strides in the last three years in the area of mitigation, bringing the larger mitigation community together around shared doctrine, partnering with state, local, tribal, and territorial governments and giving communities the funding, tools and information they need to make informed, data-driven decisions that minimize their risk.

The Agency looks forward to working with Congress on implementing the Homeowner Flood Insurance Affordability Act of 2014.

Thank you for providing me with the opportunity to discuss these important efforts. I look forward to your questions.



United States Government Accountability Office

Testimony

Before the Subcommittee on Emergency Management, Intergovernmental Relations, and the District of Columbia: Committee on Homeland Security and Governmental Affairs; U.S. Senate

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DISASTER RESILIENCE

Actions Are Underway, but Federal Fiscal Exposure Highlights the Need for Continued Attention to Longstanding Challenges

Statement of Chris Currie, Acting Director,
Homeland Security and Justice

GAO Highlights

Highlights of GAO-14-603T, a testimony before the Subcommittee on Emergency Management, Intergovernmental Relations, and the District of Columbia; Committee on Homeland Security and Governmental Affairs; U.S. Senate

Why GAO Did This Study

Multiple factors including increased disaster declarations, climate change effects, and insufficient premiums under the National Flood Insurance Program increase federal fiscal exposure to severe weather events. Managing fiscal exposure from climate change and the National Flood Insurance Program are both on GAO's High Risk list. GAO has previously reported that building resilience to protect against future damage is one strategy to help limit fiscal exposure. However, in prior reports GAO also identified multiple challenges to doing so. Responsibility for actions that enhance resilience rests largely outside the federal government, so nonfederal entities also play a key role.

This testimony discusses (1) resilience-building challenges GAO has previously identified; (2) federal efforts to facilitate resilience-building as part of Hurricane Sandy recovery; and (3) examples of nonfederal efforts to incentivize resilience building. This testimony is based on previous GAO reports issued from 1998 through 2014 related to hazard mitigation, climate change, flood insurance, and preliminary observations from GAO's ongoing work for this committee on federal resilience efforts related to the Sandy recovery. For the ongoing work, GAO reviewed documents such as the Hurricane Sandy Rebuilding Strategy and a 2012 National Academies Study on building resilience. GAO also interviewed officials from FEMA and the Department of Housing and Urban Development (HUD).

View GAO-14-603T. For more information, contact Chris Currie, (404) 679-1875; curriec@gao.gov

May 14, 2014

DISASTER RESILIENCE

Actions Are Underway, but Federal Fiscal Exposure Highlights the Need for Continued Attention to Longstanding Challenges

What GAO Found

GAO has identified various challenges to resilience building—actions to help prepare and plan for, absorb, recover from, and more successfully adapt to adapt to adverse events including those caused by extreme weather. These include challenges for communities in balancing hazard mitigation investments with economic development goals, challenges for individuals in understanding and acting to limit their personal risk, and broad challenges with the clarity of information to inform risk decision making. GAO's work over more than 30 years demonstrates that these are longstanding policy issues, without easy solutions. The Department of Homeland Security's (DHS) May 2013 release of a National Mitigation Framework and establishment of a group to help coordinate interagency and intergovernmental mitigation efforts offers one avenue for leadership on these issues.

In ongoing work on federal resilience efforts in the aftermath of Hurricane Sandy, GAO identified three high-level actions that demonstrated an intensified federal focus on incorporating resilience-building into the recovery.

- The President issued an executive order to coordinate the recovery effort and created a task force that issued 69 recommendations aimed at improving recovery from Sandy and future disasters—including recommendations designed to facilitate resilient rebuilding.
- Congress appropriated about \$50 billion in supplemental funds for multiple recovery efforts, including at least five federal programs that help support resilience-building efforts. One of these, FEMA's Hazard Mitigation Grant Program (HMGP), is the only federal program designed specifically to promote mitigation against future losses in the wake of a disaster; while, another, the Public Transportation Emergency Relief Program made more than \$4 billion available for transit resilience projects.
- The Sandy Recovery Improvement Act of 2013 provided additional responsibilities and authorities related to FEMA's mitigation and recovery efforts. In response, FEMA has undertaken efforts to make HMGP easier for states to use—for example by streamlining application procedures. The act also provided additional authorities for FEMA to fund hazard mitigation with other disaster relief funds and required FEMA to provide recommendations for a national strategy on reducing the cost of future disasters to Congress, which FEMA finalized in September 2013.

For the purposes of this statement GAO reviewed studies that discuss resilience building and climate change adaptation and identified examples efforts at the state and local levels that illustrate a variety of nonfederal initiatives that may drive communities to build resilience. For example, a nonprofit group is creating report cards to assess the resilience of a building to earthquakes and plans to extend these efforts to wind and flood risk. In some localities public-private partnerships have helped promote efforts to buy properties that were at risk from repeat losses.

Chairman Begich, Ranking Member Paul, and Members of the Subcommittee:

I appreciate the opportunity to testify before you today about disaster mitigation and resilience, especially given the \$50 billion in federal dollars recently appropriated for recovery from Hurricane Sandy.¹

The term resilience refers to the ability to prepare and plan for, absorb, recover from, and more successfully adapt to actual or potential adverse events. Hazard mitigation and climate adaptation are strategies to promote resilience to extreme weather events, among other things. The term mitigation, in this context, describes the capabilities necessary to reduce loss of life and property by lessening the impact of disasters; while, climate change adaptation is specific to such adjustments made in response to actual or expected climate change. These resilience-building strategies include efforts to protect critical infrastructure and reduce specific vulnerabilities—by for example, increasing the capacity of storm water systems and raising river or coastal dikes.

As we reported in 2012, from fiscal years 2004 through 2011, the Federal Emergency Management Agency (FEMA) obligated over \$80 billion in federal assistance for disasters, and the growing number of major disaster declarations had contributed to increasing federal disaster assistance expenditures.² Moreover, the United States Global Change Research Program has reported that the impacts and costliness of weather disasters—resulting from floods, drought, and other events such as hurricanes—will increase in significance as what are considered “rare” events become more common and intense due to climate change.³ In

¹The Disaster Relief Appropriations Act of 2013 (appropriated approximately \$50 billion for disaster recovery Pub. L. No. 113-2, div. A, 127 Stat. 4 (2013). The majority of appropriation accounts that received funding were subject to a reduction of 5.0 percent of their budgetary resources.

²GAO, *Federal Disaster Assistance: Improved Criteria Needed to Assess a Jurisdiction's Capability to Respond and Recover on Its Own*, GAO-12-638 (Washington, D.C.: Sep. 12, 2012).

³Thomas R. Karl, Jerry M. Melillo, and Thomas C. Peterson, eds. *Global Climate Change Impacts in the United States*, (Cambridge University Press: 2009) and Melillo, Jerry M., Terese (T.C.) Richmond, and Gary W. Yohe, eds. *Climate Change Impacts in the United States: The Third National Climate Assessment*. U.S. Global Change Research Program (U.S. Government Printing Office: 2014).

addition, less acute effects of changes in the climate, such as sea level rise, could also result in significant long-term effects on people and property. In 2013, we added managing fiscal exposure due to climate change to our High Risk list, in part, because of concerns about these increasing costs.⁴

We also designated the National Flood Insurance Program—a key component of the federal government's efforts to limit the financial impact of floods—as a high risk area and included it on our High Risk list in March 2006.⁵ The program faces challenges with long-term sustainability—as of December 2013, FEMA's debt from flood insurance payments totaled about \$24 billion—and FEMA had not repaid any principal on the loan since 2010—which compounds fiscal exposure arising from severe weather events.

We and others have recommended building in resilience—by taking actions to mitigate vulnerabilities to the effects of severe weather and to adapt to effects of climate change—as one strategy to help to limit the nation's fiscal exposure.⁶ However, we have previously identified a variety of challenges associated with such resilience-building efforts.

In October 2012, Hurricane Sandy devastated the Eastern seaboard and resulted in tens of billions of dollars damage from the Mid-Atlantic to the Northeast. At the same time, an executive order and legislation in the wake of the devastation signaled an increased focus from both the President and Congress on building resilience into recovery efforts.

We currently have ongoing work for this committee evaluating select federal efforts to facilitate resilience planning and activities as part of the Sandy recovery effort, which we plan to issue later this year. My statement today is based on previously published and ongoing work and it discusses select (1) resilience-building challenges we have previously identified; (2) federal efforts to facilitate resilience-building as part of the

⁴GAO, *High-Risk Series: An Update*, GAO-13-253 (Washington, D.C.: Feb. 14, 2013).

⁵GAO's *High Risk Program*, GAO-06-497T (Washington, D.C.: Mar. 15, 2006).

⁶The term fiscal exposure refers to the responsibilities, programs, and activities that may either legally commit the federal government to future spending or create the expectation for future spending. See GAO *Fiscal Exposures: Improving Cost Recognition in the Federal Budget*, GAO-14-28 (Washington, D.C.: Oct. 29, 2013).

Sandy recovery; and (3) examples of nonfederal efforts to incentivize resilience building.

This statement is based on reports we issued from January 1998 to August 2007 on hazard mitigation and resilience-building activities and ongoing work for this committee evaluating federal efforts to facilitate resilience planning and activities as part of the Sandy recovery efforts. Specifically, to describe resilience building challenges we have previously identified, we consulted our prior reports and testimonies (see Related GAO Products at the end of this statement). For our prior work, among other things, we reviewed key federal documents and efforts such as previous congressional reports and publications from the federal agencies involved in mitigation activities, analyzed information collected from relevant agencies and officials, and visited locations with comprehensive mitigation programs. Further details on the scope and methodology of our previously issued reports are available within each of the published products. For our ongoing work on federal mitigation efforts, we reviewed documents such as the Hurricane Sandy Rebuilding Strategy and FEMA's report on recommendations for a national strategy to reduce the costs of future disasters, and studies on nonfederal resilience-building efforts, and we interviewed federal officials at FEMA and the Department of Housing and Urban Development (HUD).⁷ We shared a copy of the new information in this statement with Department of Homeland Security (DHS) officials.

The work upon which this testimony is based was and is being conducted in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

⁷Specifically, we reviewed a 2012 study by the National Academies National Resource Council and a 2013 study by the Columbia Center for Climate Change and selected examples to demonstrate a range of nonfederal efforts to incentivize resilience building.

Longstanding Challenges Inhibit Efforts to Promote Resilience

Challenges we identified with disaster resilience as long ago as 1980 have persisted and were reflected in our work on disaster mitigation in 2007, as well as recent studies such as a 2012 National Academies National Research Council (NRC) study on disaster resilience.⁸

State and Local Governments May Have Concerns about Competing Priorities for Economic Development and Resilience Building

We testified in January 1998 that, for a number of reasons, state and local governments may be reluctant to invest in resilience-building efforts.⁹ For example, leaders may be concerned that hazard mitigation activities will detract from economic development goals and may perceive that mitigation is costly and involves solutions that are overly technical and complex.

In our work on hazard mitigation issued in August 2007, we found that these issues persisted. We reported that hazard mitigation goals and local economic interests often conflict, and the resulting tension can often have a profound effect on mitigation efforts.¹⁰ For example, we reported that community goals such as building housing and promoting economic development may be higher priorities than formulating mitigation regulations that may include restrictive development regulations and more stringent building codes. In particular, local government officials we contacted as part of that work commented that developers often want to increase growth in hazard-prone areas (e.g., along the coast or in floodplains) to support economic development. These areas are often desirable for residences and businesses, and such development increases local tax revenues but is generally in conflict with mitigation goals.

⁸National Research Council. *Disaster Resilience: A National Imperative*. Washington, DC: The National Academies Press, 2012.

⁹*Disaster Assistance: Information on Federal Disaster Mitigation Efforts* (GAO/T-RCED-98-67, Jan. 28, 1998).

¹⁰GAO, *Natural Hazard Mitigation: Various Mitigation Efforts Exist, but Federal Efforts Do Not Provide a Comprehensive Strategic Framework* (GAO-07-403, Aug 22, 2007). We recommended that the Administrator of FEMA, in consultation with other appropriate federal agencies, develop and maintain a national comprehensive strategic framework for mitigation. In 2013, DHS published the National Mitigation Framework to provide the strategic framework we recommended.

In 2012, the National Academies National Research Council (NRC) issued a report on disaster resilience, noting that understanding, managing, and reducing disaster risks provide a foundation for building resilience to disasters.¹¹ Risk management—both personal and collective—is important in the resilience context because the perceptions of and choices about risk shape how individuals, groups, and public- and private-sector organizations behave, how they respond during and after a disaster event, and how they plan for future disasters. However, the National Academies report described a variety of challenges that affect risk management. As with our 1998 and 2007 work, one of the key challenges the NRC reported for state and local governments was reluctance to limit economic development with resilience measures.

Individuals May Lack Incentives and Understanding of Risk When Deciding Whether to Invest in Resilience-Building Efforts

We testified in January 1998 that individuals may also lack incentives to take resilience-building measures.¹² We noted that increasing the awareness of the hazards associated with living in a certain area or previous experience with disasters do not necessarily persuade individuals to take preventive measures against future disasters. Residents of hazard-prone areas tend to treat the possibility of a disaster's occurrence as sufficiently low to permit them to ignore the consequences.

We have also reported that the availability of federal assistance may inhibit actions to mitigate disaster losses. As long ago as 1980, we reported that individuals may not act to protect themselves from the effects of severe weather if they believe the federal government will eventually help pay for their losses.¹³ The 1993 National Performance Review also found that the availability of post-disaster federal funds may reduce incentives for mitigation.¹⁴ Moreover, FEMA's 1993 review of the National Earthquake Hazards Reduction Program concluded that at the state level there is "the expectation that federal disaster assistance will

¹¹National Research Council. *Disaster Resilience: A National Imperative*. Washington, DC: The National Academies Press, 2012.

¹²GAO/T-RCED-98-67.

¹³Federal Disaster Assistance: What Should The Policy Be? (PAD-80-39, June 16, 1980).

¹⁴Creating a Government That Works Better and Costs Less: Federal Emergency Management Agency, National Performance Review (Washington, D.C.: GPO, 1993).

address the problem after the event.”¹⁵ Concerns about individuals’ ability to appropriately evaluate risk and take action to protect themselves continued in our August 2007 work when we reported that individuals often have a misperception that natural hazard events will not occur in their community and are not interested in learning of the likelihood of an event occurring.¹⁶ Likewise, the 2012 NRC report on disaster resilience identified the key risk management challenge for homeowners and businesses in hazard-prone areas is the fact that they may be unaware of or underestimate the hazards that they face.¹⁷

Information Required to Support Risk Decision Making is Imprecise, Incomplete, and Complex

In January 1998, we described three sets of issues that complicate assessing the cost-effectiveness of actions to build resilience.¹⁸ At the same time, we testified that a lack of comprehensive, reliable data to make decisions about cost-benefit tradeoffs may also inhibit local governments from deciding to invest in hazard mitigation activities. First, we noted that by definition, natural hazard mitigation reduces the loss of life and property below the levels that could be expected without mitigation, but it is impossible to measure what loss would have been incurred without mitigation. Second, the dispersion of mitigation funds and responsibilities across various agencies makes it difficult to determine the collective benefit of federal efforts. Finally, we noted that federal savings depend on the frequency of future disasters and the extent to which the federal government will bear the resulting losses, which is unknown.

Moreover, in 2007 we reported that limited public awareness may also be a result of the complexity of the information that is needed for individuals to understand their hazard risks.¹⁹ We concluded that for local decision makers to develop mitigation strategies for their communities they need appropriate and easily understandable information about the probability of natural hazards and that efforts to improve public awareness and

¹⁵Improving Earthquake Mitigation, FEMA, report to the Congress as required under Pub. L. No. 101-614, § 14(b), 104 Stat. 3231, 3242 (1993), p. 15.

¹⁶GAO-07-403.

¹⁷National Research Council. *Disaster Resilience: A National Imperative*. Washington, DC: The National Academies Press, 2012.

¹⁸GAO/T-RCED-98-67.

¹⁹GAO-07-403.

education are long-term and require sustained effort. Similarly, in our February 2014 testimony on limiting fiscal exposure from and increasing resilience to climate change, we noted that local decision makers need expert assistance translating climate change information into something that is locally relevant. The 2012 NRC study identified understanding how to share scientific information with broad audiences as one of the key challenges for resilience researchers.

The challenges we identified in prior work—competing priorities for state and local governments, imperfect individual risk decision making, and imprecise, incomplete, and complex information about both risk and benefits—are difficult issues that are likely to persist. These issues are longstanding and difficult policy issues. Indeed, the increasing number of federal disaster declarations and the growing role of the federal government in funding post disaster relief and recovery efforts may serve to exacerbate some of the inherent challenges. We are encouraged DHS finalized the National Mitigation Framework in 2013 to coordinate interagency and intergovernmental efforts and that the framework established a Mitigation Framework Leadership Group to coordinate mitigation efforts of relevant local, state, tribal, and federal organizations. The framework and the group create an avenue for interagency and intergovernmental leadership to pursue solutions to these difficult policy issues. As part of our ongoing work, we plan to evaluate the status of the Mitigation Framework Leadership Group and the actions taken to-date to apply the National Mitigation Framework in the context of recovery from Hurricane Sandy.

**Federal Response to
Hurricane Sandy
Demonstrated
Increased Focus on
Mitigation and
Resilience-Building**

In ongoing work on federal resilience efforts in the aftermath of Hurricane Sandy, we identified three high-level actions that demonstrated an intensified federal focus on incorporating resilience-building into the recovery.

The President's Executive Order on Sandy Rebuilding Charged Federal Agencies with Facilitating Resilience

In the wake of Hurricane Sandy, President Obama signed Executive Order 13632 on December 7, 2012.²⁰ The Executive Order created the Hurricane Sandy Rebuilding Task Force, chaired by the HUD Secretary and consisting of more than 23 federal agencies and offices. Among other things, the executive order charged the task force to work with partners in the affected region to understand existing and future risks and vulnerabilities from extreme weather events; identify resources and authorities that strengthen community and regional resilience during recovery; and plan for the rebuilding of critical infrastructure in a manner that increases community and regional resilience. The order also charged the task force with helping to identify and remove obstacles to resilient rebuilding to promote long-term sustainability of communities and ecosystems.

In August 2013, the Sandy Rebuilding Task Force issued the Hurricane Sandy Rebuilding Strategy, which contained 69 recommendations to various federal agencies and their nonfederal partners aimed at improving recovery from both Hurricane Sandy and future disasters. Among these 69 recommendations are many that take into account the President's charge to facilitate planning and actions to build resilience in the Sandy-affected region. Introducing the strategy, the task force chair acknowledged how critical it was that efforts to rebuild for the future make communities more resilient to emerging challenges such as rising sea levels, extreme heat, and more frequent and intense storms.

The task force report notes that many of the recommendations have been adopted and describes actions underway to implement them as part of the Hurricane Sandy recovery effort. Key examples of long-term resilient rebuilding initiatives to address future risks to extreme weather events include the Rebuild by Design effort and the New York Rising Community Reconstruction Program. In June 2013, HUD and its partners launched the Rebuild by Design competition to challenge communities to develop solutions to address structural and environmental vulnerabilities exposed by Hurricane Sandy. Of the 148 applicants, HUD selected 10 to move

²⁰Exec. Order No. 13,632, 77 Fed. Reg. 74,341 (Dec. 14, 2012).

forward.²¹ The selected teams then worked with local stakeholders to tailor their projects to the communities and hosted over 50 community workshops to educate the communities on their proposals and the theme of resilience. On April 3, 2014, the final proposals were exhibited and evaluated by an expert jury. Winning design solutions may be awarded disaster recovery grants from HUD and other public and private partners. Some resilience aspects of the designs include elevating streets and adding breakwater systems.

The New York Rising Community Reconstruction Program is another mitigation program that provides over \$650 million for additional rebuilding and revitalization planning and implementation assistance to Sandy-affected communities. As of May 2014, six regions of New York comprised of 102 localities and 50 New York Rising communities created plans that assessed storm damage and current risk, identified community needs and opportunities, and developed recovery and resilient strategies. Each locality is eligible for \$3 million-\$25 million from HUD and other public and private partners. According to the State of New York, as of May 2014, multiple projects had been awarded funding.

As part of our ongoing work on resilience-building as part of the Hurricane Sandy recovery, we are identifying recommendations from the task force report that particularly support resilient rebuilding and assessing the actions taken to date to implement them. We plan to issue a report on these issues later this year.

²¹The 10 selected design opportunities applied the Infrastructure Resilience Guidelines set forth in the Sandy Task Force report. The purpose of the guidelines is to outline standards to help govern federal funding for Sandy-related infrastructure investments and promote regional resilience. All federal, state, and local projects must adhere to the seven guidelines to receive federal funding. The guidelines require that all projects have: comprehensive analysis, transparent and inclusive decision processes, regional resilience, long-term efficacy and fiscal sustainability, environmentally sustainable and innovative solutions, targeted financial incentives, and adherence to resilience performance standards.

**Congress Appropriated
Funds to Key Federal
Programs that Can Help
Support Resilient
Rebuilding**

In January 2013, Congress passed and the President signed the Disaster Relief Appropriations Act, 2013 (Sandy Supplemental), which appropriated about \$50 billion in funding to support recovery.²² The Sandy Supplemental appropriated funds—primarily for programs and activities associated with recovery from Hurricane Sandy—to nineteen federal agencies. Among the nineteen agencies, four—DHS, HUD, the Department of Transportation (DOT), and U.S. Army Corps of Engineers (USACE)—received amounts that represent over 92 percent of the total with appropriations ranging from \$5 billion to \$15 billion.²³ These four agencies administer five programs that play a key role in helping to promote resilience-building as part of recovery: (1) FEMA's Hazard Mitigation Grant Program (HMGP), (2) FEMA's Public Assistance Program (PA), (3) HUD's Community Development Block Grant-Disaster Recovery (CDBG-DR) Program, (4) DOT's Federal Transit Administration (FTA) Public Transportation Emergency Relief Program, and (5) USACE's Flood Risk Management Program. See table 1 for a description of these programs and how they help to support resilience-building efforts.

²²Pub. L. No. 113-2, 127 Stat. 4 (2013).

²³The amounts received by these four federal agencies reflect the adjustment for sequester.

Table 1: Key Federal Programs Funded by Sandy Supplemental that Support Resilience Building

Agency	Program	Who Can Apply	How It Supports Resilience-Building	How It Is Used in Sandy Recovery
Federal Emergency Management Agency (FEMA)	Hazard Mitigation Grant Program	state, tribal, and local governments	the only federal program explicitly designed to improve resilience to future disasters during recovery funds a wide range of projects, including purchasing properties in flood-prone areas, adding shutters to windows to prevent future damage from hurricane winds and rains, or rebuilding culverts in drainage ditches to prevent future flooding damage	FEMA estimates that the program will provide about \$349 million from inception through fiscal year 2014 for mitigation activities.
FEMA	Public Assistance	state, tribal, and local governments and some nonprofit organizations	may fund measures to reduce future risks in conjunction with repair of disaster damaged facilities if cost-effectiveness can be demonstrated	In total, FEMA estimates that it will spend \$8.5 billion on public assistance for Sandy recovery by the end of fiscal year 2014, some of which can be used to reduce future risks
Housing and Urban Development (HUD)	Community Development Block Grant—Disaster Recovery	states and local governments—not less than 50 percent of funds must benefit low and moderate income persons, but grantees may seek to reduce the overall benefit requirement below the 50 percent with justification	designed to address needs not met by other disaster recovery programs, which can include resilience-building projects	In conjunction with its leadership on the Sandy Rebuilding Task Force, HUD linked key resilience-building initiatives to the grant program. For example, these funds can be awarded to Rebuild by Design and New York Rising communities to carry out those projects.
Federal Transit Administration	Public Transportation Emergency Relief Program	transit authorities	can fund transit resilience projects	\$4.3 billion has been made available for resilience projects
U.S. Army Corps of Engineers (USACE)	National Flood Risk Management Program	not a grant program	costal and river flood prevention	USACE is using a portion of its \$5 billion in Sandy Supplemental funds—about \$1 billion—to reduce future flood risk in ways that will support the long term sustainability of the costal ecosystem and communities and reduce the economic costs associated with large-scale flooding.

Source: GAO Analysis of Federal Guidance and Policy

As part of our ongoing work we plan to focus on efforts within FEMA's HMGP and PA and HUD's CDBG-DR to facilitate and support community and regional resilience efforts as part of recovery from Hurricane Sandy. We are evaluating federal actions, gathering perspectives from key state officials, and studying at least one large-scale PA project that involves resilience-building activities.

Legislation to Improve Recovery Activities Also Focuses on Resilient Rebuilding

The Sandy Recovery Improvement Act of 2013 (SRIA) was enacted as part of the Sandy Supplemental.²⁴ The law authorizes several significant changes to the way FEMA may deliver federal disaster assistance. FEMA is tracking its implementation of 17 provisions of the act, of which are aimed at mitigating future damage. Specifically:

- **Public Assistance Work Alternative Procedures.** This section authorizes FEMA to implement alternative procedures for administration of the PA program with the aim of providing greater flexibility and less administrative burden by basing grants on fixed estimates. Among the provisions in this section of SRIA is one that would allow use of all or part of the excess grant funds awarded for the repair, restoration, and replacement of damaged facilities for cost effective activities that mitigate the risk of future damage, hardship, or suffering from a major disaster.
- **Changes to HMGP.** SRIA authorized three key changes to HMGP. First, it authorizes FEMA to expedite implementation of the program. FEMA has issued guidance for streamlining the program and is planning actions to continue to refine the changes and measure their effectiveness. Second, SRIA allows FEMA to provide up to 25 percent of the estimated costs for eligible hazard mitigation measures to a state or tribal grantee before eligible costs are incurred. As part of the revised, streamlined HMGP guidance, FEMA has informed states of this provision. Third, SRIA allows FEMA to waive notice and comment rulemaking procedures for HMGP Administration by States and authorizes FEMA to carry out the program as a pilot. FEMA is currently carrying out a pilot program and issued a notice in the Federal Register in March 2014 seeking comments from the public to help inform the development of this new method of program delivery.²⁵ To develop the program, FEMA is exploring the extent to

²⁴Pub. L. No. 113-2, Div. B, 127 Stat. 4, 39 (2013).

²⁵79 Fed. Reg. 13,970 (Mar. 12, 2014).

which its determinations regarding cost-effectiveness, technical feasibility and engineering, and final eligibility and funding can be made at the state level.

- **National Strategy to Reduce Costs on Future Disasters.** SRIA required FEMA to make recommendations for the development of a national strategy to reduce costs on future disasters. In September 2013 FEMA issued the required report, recommending that the following elements be considered in the development of a national strategy: 1) engage in a whole community dialogue and build upon public-private partnerships, 2) enhance data-driven decisions, 3) align incentives promoting disaster cost reduction and resilience, 4) enable resilient recovery, and 5) support disaster risk reduction nationally.²⁶

Nonfederal Groups Have a Variety of Initiatives to Help Incentivize Resilience Building

As we have previously reported, most responsibility and authority for resilience activities rests largely outside the federal government; therefore, nonfederal incentives are also a critical piece of the overall strategy to reduce future losses.²⁷ The federal government, by providing incentives through programs like the five discussed earlier in this statement, can help to promote and facilitate mitigation before and after disasters. However, ultimately, nonfederal entities inside and outside the government make the decisions that lead (or do not lead) to resilience activities. Several examples of mitigation efforts at the state and local levels help illustrate the variety of ways that incentives help drive communities to be more resilient—with a range of activities from shoring up building codes to facilitating buyouts of repetitive loss properties.

As part of our ongoing work, we are reviewing studies about efforts to build resilience to extreme weather events and climate change. For the purposes of these statement, we selected illustrative examples from those studies to describe a range of nonfederal efforts to incentivize mitigation.

²⁶ National Strategy Recommendations: Future Disaster Preparedness, Federal Emergency Management Agency (FEMA) Washington, D.C., September 2013.

²⁷ GAO/T-RCED-98-67 and GAO-07-403.

The 2012 NRC report discussed earlier in this statement included several examples of earthquake mitigation efforts in California.²⁸

- In California, zones of potential landslide, liquefaction, or fault rupture hazard have been mapped by the California Geological Survey as "special study zones" according to provisions in the California Alquist-Priolo Earthquake Fault Zoning Act of 1972. If a property is in one of these special study zones, the buyers must sign a form indicating that they have been made aware of this potential hazard and recognize that additional inspections and work may be required if they choose to modify the property in the future.
- The U.S. Resiliency Council, a nonprofit organization based in California, is working on creating building "report cards" to provide technically defensible metrics to evaluate and communicate the resilience of individual buildings. The initial focus is on seismic risk, and officials plan to extend their efforts to creating metrics for resilience to catastrophic wind and flood risk. Transparency and required disclosure of these individual building resilience ratings can benefit building users, owners, and lenders by increasing the value of well designed or properly retrofitted properties.
- The Property Transfer Tax Program in Berkeley, California has provided funds for seismically retrofitting a number of properties in the city. In 1992, voters approved an additional 0.5 percent transfer tax on top of the existing 1 percent tax on all real estate transactions, with the tax paid equally by buyer and seller. This portion of the transfer tax is available for voluntary seismic upgrades to residential property. Residential property owners have up to 1 year to complete the seismic retrofit (or lose the funds). Since many homes sell for \$750,000 to \$1 million or more in Berkeley, this amounted to \$3,750-5,000 in "free funds" and can cover homeowner upgrades such as brick chimney bracing or anchoring water heaters. This incentive program has an 80 to-90 percent participation rate. Along with other measures, this program has led to more than 60 percent of the residences in Berkeley becoming more resistant to earthquakes.

Similarly, the Columbia Center for Climate Change Law of Columbia Law School issued a report in 2013 that included examples of flood mitigation efforts in North Dakota and Iowa.²⁹

²⁸National Research Council. *Disaster Resilience: A National Imperative*. Washington, DC: The National Academies Press, 2012.

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- In 1996, 83 percent of the homes in Grand Forks, ND were damaged when the Red River reached 54 feet and topped the city dikes. Using CDBG funding, the City of Grand Forks purchased 802 lots, moved salvageable homes, and destroyed the remainder to create a green space. The city also partnered with a private development company to finance the construction of 180 new homes in an underdeveloped area of Grand Forks to help relocate some of the people who had lost their homes in the flooding and subsequent buy-out program.
 - In 1993, the Iowa River flooded, and overtopped existing levees. The US Army Corps of Engineers planned to rebuild and repair the levees—but a working group of state and federal agencies determined that the best solution would be to buy all the homes in the levee district so that it could be statutorily dissolved and the city would no longer have to support the infrastructure in the area. The buyout program developed a novel land-transfer system and engaged government agencies and non-profit organizations to execute it. The non-profit organization's role was instrumental because landowners were hesitant to sell their property to the government, but were comfortable selling it to the non-profit. The non-profit used a formula to set the land price, which contributed to the success of the buyout because purchasers didn't have to negotiate prices with each individual landowner and it removed the incentive for landowners to hold out for a better price.

Chairman Begich, Ranking Member Paul, and members of the subcommittee, this completes my prepared statement. I would be happy to respond to any questions you may have at this time.

GAO Contacts and Staff Acknowledgements

If you or your staff members have any questions about this testimony, please contact me at (404) 679-1875 or curriec@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this statement. Christopher Keisling, Assistant Director, and Katherine Davis, Dorian Dunbar, Melissa Duong, Kathryn Godfrey, Tracey King, Amanda Miller, and Linda Miller, made contributions to this testimony. In addition, Martha Chow, Steve Cohen, Stanley Czerwinski, Roshni Davé, Peter Del Toro, Chris Forys, Daniel Garcia-Diaz, Alfredo Gomez, Michael Hix, Karen Jarzynka-Hernandez, Jill Naamane, Brenda Rabinowitz, Joe Thompson, Lisa Van Arsdale, Pat

²⁹Managed Coastal Retreat: A Handbook of Tools, Case Studies, and Lessons Learned, Columbia Center for Climate Change Law, October 2013 New York, NY

Ward, David Wise, and Steve Westley also made contributions based on published and related work.



TESTIMONY

The Role of Mitigation in Reducing Federal Expenditures for Disaster Response

before the

Senate Committee on Homeland Security and Governmental Affairs
Subcommittee on Emergency Management, Intergovernmental Relations, and the District
of Columbia

by

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May 14, 2014

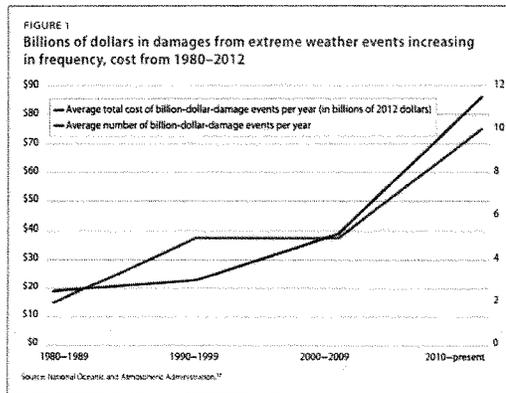
Introduction

The Association of State Floodplain Managers is very pleased to offer our thoughts and recommendations on the role of hazard mitigation and its impacts in reducing federal disaster costs as well as the mitigation components of the NFIP. We thank Chairman Begich and Ranking Member Paul for your attention to the importance of this issue and how we can improve our collective hazard mitigation efforts in the nation. ASFPM very much thanks this subcommittee for its recognition of the need to promote and assist hazard mitigation.

ASFPM and its 35 Chapters represent over 15,000 state and local officials and other professionals who are engaged in all aspects of floodplain management and hazard mitigation, including management, mapping, engineering, planning, community development, hydrology, forecasting, emergency response, water resources, and insurance for flood risk. All ASFPM members are concerned with working to reduce our nation’s flood-related losses. For more information on the association, our website is: <http://www.floods.org>.

Disasters Cost Taxpayers

As we reflect over the early years of this century, disaster losses and costs have risen substantially. Flood losses have climbed to average \$10 billion per year. 2012 resulted in 11 weather and climate disaster events each with losses exceeding \$1 billion in damages. This makes 2012 the second costliest year since 1980, with a total of more than \$110 billion in damages throughout the year. The 2012 total damages rank only behind 2005, which incurred \$160 billion in damages.



Unfortunately, this is neither unanticipated nor is it as bad as it could get. Experts have estimated that an earthquake in San Francisco of the same magnitude as the 1906 earthquake could cause as many as 3,400 deaths, displace up to 250,000 households, and cause as much as \$120 billion in property damage alone. The recently published ARkStorm scenario modeling for the Sacramento area based on a scientifically realistic flood event, similar to those that occurred in California in 1861 and 1862, indicates that three quarters of a trillion dollars in damage (business interruption costs of \$325 billion in addition to the \$400 billion in direct property loss) would occur if that event happened today. The

National Climate Assessment recently released indicated that flooding may intensify in many regions of the United States due to increased heavy precipitation events in areas where total precipitation is projected to decline. This will impact private property and cause increased damages to our nation’s infrastructure.

Hazard Mitigation Reduces Costs of Disasters

The reduction of risk is key to reducing disaster-related cost to the nation, to states and communities, and to property owners. In short, hazard mitigation saves money and hazard mitigation represents a societal investment, not a cost. The benefits of this investment are clearly evidenced in several ways:

- Averts loss of life and injury to people.
- Reduces damages to public and private property.
- Lessens expenditure of resources and exposure to risk for first responders.
- Reduces taxpayer costs of disaster response and recovery.
- Accelerates recovery of communities and businesses affected by disasters.
- Enhances community resiliency.

So how does mitigation post disaster save taxpayers money in the real world? After the 1993 Mississippi River flooded hundreds of homes and caused several million in

damage in Arnold, Missouri (pop. 19,965), local officials pursued mitigation projects. By the end of 1995, the city had purchased over 202 homes and 155 sites for mobile homes, using a combination of FEMA, CDBG, and other funding sources. By

	1993 Flood	1995 Flood	May 2002 Flood
Sandbagging sites in Arnold	60	3	0
FEMA Public Assistance to Arnold	\$1,436,277	\$71,414	\$0
Applications from Arnold for Individual Assistance	52	26	1

2008, over 322 homes had been acquired and when flooding occurred that year, a total of \$12,000 in damage resulted. As part of the buyout, buildings were bought, demolished, and the remaining property was deed-restricted as open space. Arnold has repeatedly flooded since 1993; however, now flooding is mostly an inconvenience, and the long-term cost to the U.S. taxpayer is essentially zero. The key to the success of this project and ongoing minimization of taxpayer cost was the permanent deed restrictions on the acquired properties.

The costs associated with natural disasters are increasing. Mitigation is the key to reducing risk and to reducing costs. The nation needs a broad national commitment to risk reduction. Some specific mitigation means for addressing flood related disasters are under the jurisdiction of this Committee and some are under the jurisdiction of the Senate Banking Committee. Improved synergies between these Stafford Act and Flood Insurance mitigation efforts are needed. Therefore, this testimony will address some elements that fall outside this Committee’s immediate jurisdiction – in an effort to better weave

them together. A state or local official seeking to reduce risks must work with all of these programs so national policy should facilitate synergies among them.

Considerations for a National Mitigation Effort

Mitigation means taking a sustainable action to reduce or eliminate long-term risk from hazards and their effects. A variety of mitigation activities exist that can reduce the risk of losses from natural hazards. Typically, these activities are arranged in five different categories:

- Prevention: These activities are intended to keep the hazard risk problem from getting worse, and ensure future actions do not increase hazard losses. Examples include planning, zoning, and building codes.
- Property protection: These activities are intended to modify existing development subject to hazard risk. Examples include acquisition and demolition, elevation, relocation or retrofitting of existing buildings. These are the primary activities funded by FEMA mitigation programs.
- Natural resource protection: Activities intended to reduce intensity of hazard effects as well as improve the quality of the environment and wildlife habitats. Examples include wetlands restoration (for flood), buffer zones, setbacks, and forest management practices (wildfire).
- Emergency Services: Activities to ensure continuity of emergency services. Examples include critical facilities protection to a high standard so these facilities are operational and accessible during extreme events.
- Structural measures: Activities include development of large, highly engineered hazard reduction structures. Examples include levees and debris basins.

While hazard mitigation can be undertaken at any time, citizens and communities alike are most receptive in the aftermath of a disaster. This is because very significant decisions have to be made during rebuilding and it is much easier to incorporate mitigation measures as rebuilding occurs versus on a “sunny day” when there is no urgency or low perception of being at risk. There is also a need to plan for mitigation and take actions based on risk identification. This is why we need both post-disaster and pre-disaster mitigation efforts.

ASFPM believes there are four basic tenets to an effective national approach to hazard mitigation:

1. Ensure that all federal programs and resources incentivize mitigation oriented behavior at the state, local, and individual levels. Too many perverse incentives still exist in federal disaster management and water (for flood related hazards) policy that do not result in resiliency oriented behaviors and those perverse incentives actually help drive up taxpayer costs.

2. Optimize mitigation programs to deliver assistance effectively and quickly. There is ample opportunity to optimize existing programs to be effective in supporting hazard mitigation efforts. Mitigation programs are still too slow.
3. Our nation's collective mitigation effort must include participation and leadership at all levels of government, individually, and in the private sector.
4. Multiple mitigation solutions are almost always needed to reduce future disaster and hazard losses. Sometimes these are combinations of mitigation solutions.

How effectively and comprehensively this is done will have substantial bearing on the cost of future disasters to our nation. There seems to be a common misperception that preparedness and response activities should happen now, while mitigation activities can wait. This mindset misses many opportunities to not only reduce risk but also to save money for taxpayers and those affected by the disaster. Preparedness activities save lives and some personal property, while response and recovery activities can efficiently deliver immediate life-safety assistance and deliver assistance that an array of federal, state, and local programs provide. However, only hazard mitigation activities reduce the large costs associated with disasters. Early investment in hazard mitigation reduces the cost and effort associated with disaster preparedness, response, and recovery.

Current Mitigation Priorities and Disaster Response and Recovery Expenditures

While gaining some visibility, as a nation we are nowhere near where we need to be in terms of the priority of hazard mitigation versus responding, recovering and getting back to normal after a disaster. For the past several years the federal government has increased the amount of disaster assistance provided to those individuals and communities affected by hazard event. The Center for American Progress reports that the federal government spent \$136 billion total from fiscal year 2011 to fiscal year 2013 on disaster relief. This adds up to an average of nearly \$400 per household per year. The upward trend of focusing on providing disaster assistance and not investing in mitigation is not sustainable.

In FEMA's most recent monthly report on the Disaster Relief Fund, the size of mitigation programs relative to other post-disaster expenditures is quite clear. Appendix C of that report shows that for Hurricane Sandy, actual expenditures for mitigation totaled \$90 million while the total cost for all other categories (Public Assistance, Individual Assistance, Operations and Administrative) totaled \$6.47 billion – or 1.4 percent. The estimated totals through FY14 are projected to be \$349 million and \$12.04 billion – or 2.8 percent respectively.

The increased spending has come at a time where mitigation resources have been decreasing, especially for non-disaster related mitigation programs. This has been reflected in FEMA's budget priorities as well. Since 2010, funding for FEMA's two largest mitigation programs flood mapping and the pre-disaster mitigation program has been decreased substantially, with PDM being proposed to be

zeroed out over the past three years. Thankfully, Congress has thought otherwise. Language on page 154 of FEMA's 2013 budget narrative sums up the philosophy best when justifying a decrease in flood mapping funding: *"The FY 2013 amount of \$89.3 million reflects a refocus of agency-wide resources on FEMA's primary mission of preparing for and coordinating disaster response and recovery efforts while still providing support for this program, which also is supplemented by fees derived from the NFIP."*

However, ASFPM is cautiously optimistic that FEMA and the Administration may have begun to see the value of mitigation relative to disaster response and recovery. ASFPM was pleased to see the Administration's request of an additional \$50 million for the Flood Mitigation Assistance program in FY15 budget request, the President's roll-out of the Opportunity, Growth and Security Initiative which included \$400 million for PDM to support resilience from climate change, and the strategy budget priority #4 which is focused on enabling disaster risk reduction nationally. ASFPM remains puzzled that FEMA once again proposed to zero out the Pre-Disaster mitigation program in FY15 and hopes that the priority of PDM in the President's OGS1 will compel FEMA and DHS leadership to propose a more appropriate FY16 budget request.

Mitigation Efforts that have an Impact on Sustainability and Success of the NFIP

The NFIP is the key national program used to reduce flood losses. Of course, the NFIP is not just an insurance program, but a mitigation program with four key components: Insurance to protect financially against flood losses, locally adopted standards for land use and buildings to improve resiliency, flood maps to identify risk areas, and flood mitigation programs to eliminate risk to older buildings that existed before modern codes and standards. NFIP reforms in 2012 and 2014 were necessary from the standpoint that the NFIP needed to be made more actuarially sound so it could serve the nation well into the future. However, what Congress did not address at all in 2012 and only narrowly in 2014 is flood insurance affordability. While the NFIP could be considered a much more actuarially sound program now than prior to these reforms, property owners that cannot afford flood insurance need help. For 1.1 million policy holders, rates will be going up between 18% and 25% per year, not including new surcharges. This will impact small businesses especially hard as they will see 25% annual increases plus the highest surcharge.

The fastest post-disaster mitigation program is the Increased Cost of Compliance (ICC) element of a NFIP policy. This mechanism can very quickly result in both speedy recovery and mitigation. From 1997 to 2011, ICC has resulted in over \$513 million in mitigation to nearly 25,000 at-risk structures resulting in at least \$2.5 billion in benefits¹. Sixty percent of properties mitigated through ICC are

¹ Based on 2005 MMC study "Mitigation Saves" which calculated that benefits from FEMA flood mitigation projects were \$5 for every \$1 invested.

elevated. Often property owners who use ICC to mitigate can have their mitigation completed before a mitigation grant through the federal government is even approved.

However, because an ICC claim is triggered by a local official declaring a structure substantially damaged, the process can be slowed down when a community does not have the capacity to do a large number of post-disaster inspections in a short time. This provides a great opportunity for FEMA assistance to communities to cost share these inspections and to facilitate the assistance of inspection officials from other jurisdictions. Also, the way ICC is being implemented today, there are restrictions on what elements are covered versus what a typical mitigation grant may pay for, and provisions to expand the reach and scope of ICC to function in a pre-disaster environment by triggering availability of ICC funds by a mere offer of mitigation – not by being substantially damaged that were passed in 2004 have not been implemented by FEMA. This is especially notable when, like PDM, FEMA could have brought to bear another program to ease flood insurance affordability issues. While the average cost to fully undertake mitigation for insured structures ranges from \$20,000 to well over \$100,000, ICC is capped at \$30,000 and that amount plus any insurance claim cannot exceed the overall policy limit. ASFPM believes that the cap must be raised as FEMA is already authorized to collect up to \$75 per policy for ICC. Currently the average ICC policy surcharge is about \$15.

Another effective hazard mitigation program under the NFIP is the Community Rating System where communities to earn flood insurance premium discounts for undertaking activities that go beyond the minimum NFIP standards. While there are over 22,000 communities in the NFIP, approximately nearly 1,300 communities participate in the CRS. As reforms of the NFIP push flood insurance policies towards greater actuarial soundness which have the effect of costing more, communities throughout the nation have rediscovered CRS and interest in the program is higher than it has been in years. At its core, the CRS program is a mitigation program. It is voluntary and it promotes actions that go far beyond the NFIP in reducing flood risk. Due to the higher demand and impact on actuarial rates to policy holders, the State of Florida has just hired a full time state level CRS coordinator to provide technical assistance to communities and develop statewide CRS uniform credits. The CRS application process is rigorous; and ASFPM is concerned that while rigor must be maintained, there cannot be unnecessary delays due to lack of technical assistance or capacity within the CRS to do the necessary things to process CRS applications. Perhaps such technical assistance could be supported by PDM funds.

At the same time, FEMA must ensure that there is adequate capacity through the State or FEMA to monitor community compliance with their CRS commitment. CRS provides well over \$200 million in discounts to policy holders in CRS communities. It is important to all other policy holders and taxpayers that FEMA ensure the CRS communities are undertaking and implementing all those higher standards to which they have committed. Lack of compliance will result in increased flood losses, thus increasing claims on the NFIP or claims for federal disaster assistance. This discussion points to the need for adequate resources directed to the CRS program in order to help communities enter and maintain their participation in this complex program. Since this program operates fully within the NFIP Fund, a significant portion of this funding should come from the fund.

Another mitigation component of the NFIP is floodplain mapping or the identification of flood risk data. Currently only one million of the nation's three million miles of waterways have flood hazards identified. One of the most positive reforms in the 2012 legislation was the creation of the National Flood Mapping Program which established concrete mapping objectives and activities. ASFPM is pleased that Congress recognized the scope and breadth of flood risk in the nation including residual risks (such that exists behind dams and levees), the changing nature of flood risk over time due to a number of factors, and the need for agencies to work more closely together to share data. The foundation for any flood mitigation program is to know the current and potential flood risk at a given site. Otherwise, the risk is great for wasting money on solutions that do not provide long-term risk reduction. ASFPM believes that the authorization of \$400 million annually is appropriate but is disappointed in the Administration's lack of prioritization of flood mapping and severely underfunded requests of around \$85 million the past two years. Based on ASFPM's own cost analysis for mapping the nation, flood mapping investments at this level virtually guarantee that the flood risk data will become less reliable over time and doesn't include any new mapping efforts.

The most cost-effective mitigation aspect of the NFIP is the minimum NFIP regulations. Unfortunately, it has been nearly 30 years since the minimum standards have been updated and we have learned a lot about the nature of flooding and flood damage. Research shows that repairing and mitigating older Pre-FIRM homes that were constructed before building codes required elevation to just the minimum NFIP standards results in 80% less flood damage in a future flood event. Avoided losses cumulatively for buildings in the nation constructed to NFIP standards is over \$1.7 billion annually². Recently there has been a call to exempt some agricultural structures from NFIP minimum standards. ASFPM believes that this is not appropriate; adequate provisions already exist within local codes to provide relief for unique situations. FEMA may want to consider providing additional technical guidance however.

Because the NFIP does not exclude policies due to claims history, properties having repetitive losses are particularly impactful. A 2004 GAO report indicated that repetitive loss properties, while representing 1% of the policies in the NFIP, resulted in 38 percent of the claims historically and at the time was estimated to cost the NFIP approximately \$200 million annually. The focus on repetitive loss properties led to the creation of the Severe Repetitive Loss (SRL) and Repetitive Flood Claims (RFC) programs in the 2004 NFIP Reform legislation. Due to several issues, these programs were consolidated into the Flood Mitigation Assistance Program in the 2012 NFP Reform legislation. Undoubtedly, these programs as well as PDM and HMGP have had an impact on eliminating the losses on these properties; however, there has been no recent study to identify the impacts of those programs on repetitive loss properties.

² FEMA's FY13 Congressional Budget Justification National Flood Insurance Fund

Tools and ASFPM Recommendations for Building an Effective Comprehensive National Hazard Mitigation Effort

Several tools are available to support mitigation at many levels (federal, state, community, individual), but some inadvertently work against each other. The result can sometimes be disincentives to mitigate or insufficient incentives to mitigate when counter-balanced with other development incentives. The recommendations below focus on several of these tools at the federal level and how they can be improved.

Hazard Mitigation Grant and Loan Programs

Today's mitigation toolbox has hazard mitigation grant programs both pre- and post-disaster. The pre-disaster grant programs include FEMA's Pre-Disaster Mitigation Grant program (PDM) which works to mitigate against all hazards, and the Flood Mitigation Assistance Program (FMA) that serves to mitigate against the hazard of flooding. Post-disaster, two programs are the most popular, the Hazard Mitigation Grant Program (HMGP) and HUD's Community Development Grant Program (CDBG-DR). Also the FEMA has a mitigation component to the Public Assistance program called Section 406 mitigation and the Small Business Administration loans allow for hazard mitigation to be included in loan amounts.

FEMA's PDM program has been very beneficial to communities and has had a positive impact on mitigation capacity and reduced losses throughout the nation. PDM funding focuses on two activities – all hazard mitigation planning and hazard mitigation projects. It is the primary funding source for all-hazard mitigation planning, especially in states and communities that do not receive frequent disaster declarations where it is often the only source of funds. All states have natural hazards and need to plan for them and be prepared to mitigate when the disaster occurs, whether they have had a recent disaster or not.

Also, PDM is the primary funding source for hazard mitigation projects in those same states and communities. Demand has historically been high for PDM – the program usually takes in applications that exceed three times available funding. A recent driver of mitigation and need for PDM resources is NFIP reform. Both the reform acts in 2012 and 2014 have driven and will drive an unprecedented interest in flood mitigation options. This is an appropriate reaction to better information about the true risk. However, the availability of PDM funds is key to taking advantage of this interest in mitigation, particularly in areas where there is not a declared disaster – thus making Hazard Mitigation Grant Program funds available. ASFPM has been extremely disappointed in FEMA's lack of prioritization of this important program – PDM is a readily available tool that can ease the burden of flood insurance affordability. Ironically at the very same time citizens are asking communities, states and members of Congress for relief, FEMA has proposed to zero out PDM.

In the FY13 Unified HMA competition (which includes both PDM and FMA) where there was both a compressed application timeframe (60 days versus the historical 120-150 days) and after not

having an open application period for two years, demand for mitigation project was still 3x the available funds. ASFPM thinks the demand is much higher as we have heard from many states that FEMA's new restrictions on the application period prevented them from doing an appropriate job running an effective application process (grant applications are made by communities to states where states conduct initial processing and prioritization before sending to FEMA). Presently, the biggest concern from states is maintaining local mitigation capacity by ensuring that local hazard mitigation plans are updated.

After reform of the NFIP, floodplain managers were receiving calls from panicked property owners asking about mitigation options. Because this largely happened in a pre-disaster environment, local and state officials had few options available, especially for grants or loans. A gap exists for not only pre-disaster mitigation grant funding but even loan options as the only option currently available through SBA requires a disaster declaration. In fact, loan options could see significant interest as a result of NFIP reforms and programs already exist that could be readily deployed across the country. For example the HUD-FHA 203K loan program is often considered a loan of last resort because lenders writing conventional loans will not loan money on properties deemed not meeting minimum habitability standards (damaged, no functioning HVAC system, etc.). It is written throughout the country and has a robust process for cost estimates and inspections. The 203K loan program was used successfully after Sandy to not only repair homes but to also mitigate against the future flood threat. However, the program, as guidance currently exists, is used when there is some defect with the structure and not if the structure is merely at high risk from damage from a natural hazard like flooding. Such a program could be modified and be another option floodplain and other hazards managers have in the toolbox.

ASFPM recommendations related to hazard mitigation grant and loan programs:

- **Develop and generate an annual National Hazard Mitigation Report. Such a report should identify mitigation funds expended relative to other disaster funds spent in a year, identify spending and damage trends (i.e, such as identifying the number of repetitive loss properties mitigated), and profile mitigation successes. Finally the report should, on a periodic basis, evaluate the cost effectiveness of hazard mitigation programs.**
- **Support funding of PDM at \$150 million per year with priorities for mitigation planning.**
- **Provide for a new type of PDM project that incents the building of state hazard mitigation capability and incentivizes states to build their own mitigation programs. A partnership arrangement should be developed and modeled after the NFIP's Community Assistance Program, but strengthened to allow for the development of permanent state capability to implement and manage hazard mitigation programs. Such a partnership could include incentives (cost-shared funding) and disincentives (state eligibility or sliding cost share for disaster assistance programs) to ensure the state develops and maintains long-term capability.**

- Reevaluate the cap on State Management Costs for HMGP which was established in 2007 of 4.89 percent. In doing so, data should be gathered from states and one area of evaluation is the need for a scalable management cost structure.
- Clarify eligibility requirements to use the FHA 203K rehab loan program which allows for the financing of repairs to a home as part of the larger home mortgage when a structure is at significant risk from natural hazards like floods, even if it is otherwise considered habitable.
- Reconsider a pre-disaster SBA hazard mitigation loan program. SBA piloted such a program in the mid-2000s; however, it had very low interest and participation from property owners.
- Provide for new hazard mitigation loan mechanisms. There have been several Congressional proposals suggesting this idea in recent years.
- Maintain robust protective covenants (deed restrictions) for properties purchased with FEMA mitigation program funds.

National Flood Insurance Program

ASFPM recommendations related to the NFIP:

- Immediately implement the 2004 NFIP reforms to ICC that triggered availability of ICC funds upon an offer of mitigation.
- Increase the ICC cap to \$50,000.
- Require that the new surcharges from the 2014 NFIP reform act be used for mitigation activities through ICC instead of building up the Reserve Fund for future claims. An approach that addresses the problem versus continual paying of claims will save taxpayers and the NFIP many more dollars in the long run.
- Increase the capacity of the CAP-SSSE program to incent states to have CRS coordination capability.
- Implement the National Flood Mapping Program with metrics that include 1) Eliminating the current inventory of old paper maps and 2) Mapping all of the nation's flood hazards so that such hazards are proactively identified before development and investments in infrastructure occur.
- Fund floodplain mapping at the fully authorized level of \$400 million per year so we can complete the job of initially mapping the nation in 10-15 years.
- Undertake rulemaking to review and update the minimum NFIP standards and include new standards for floodplain avoidance which was a founding objective of the NFIP.

Post-Disaster Hazard Mitigation Activities

FEMA has begun to pilot the Program Administration by States for the Hazard Mitigation Grant Program which was authorized eleven years ago as part of the Disaster Mitigation Act of 2000. ASFPM appreciates FEMA's efforts to bring this to fruition. Under the concept of a delegated program,

appropriate roles for FEMA would be training and capability building of states, and periodic oversight/assessment of programs and HMGP funds would be provided to a state in a block grant format. Generally speaking the PAS seems to be consistent with this philosophy. Also, FEMA has made significant improvements with streamlined benefit-cost procedures as well as an Advanced Assistance program that allows states to use a portion of mitigation funds to undertake activities that help properly identify, scope and develop effective mitigation projects. All of these items should have the net effect of speeding up the HMGP program and making it more efficient.

However, improvements can still be made. The Sandy Recovery Improvement Act (SRIA) placed an emphasis on funds management of the Disaster Relief Fund. However, what may have been a funds management solution has had a detrimental effect on state mitigation programs – the 2013 rescission of the 6-month lock-in as a floor for HMGP funding. This longstanding provision provided states certainty as to the amount of HMGP funds that would be received based on estimates for other disaster expenditures. This rescission has had unintended consequences. States often relied on this guarantee to initiate mitigation program activities such as HMGP project application development so projects were not only ready to go, the state could give a soft approval to the project because it knew the amount of HMGP it was going to receive. Now, there is no guarantee until 12 months. This means that states who want to speed up the HMGP process will be reluctant to do so out of the fear that they may be over-committing funds that they don't have.

The Stafford Act should be amended to allow for the reimbursement for the assistance necessary to perform building and code related inspections of damaged buildings under Public Assistance. As the Stafford Act is interpreted now, the reimbursement can only be made for inspections related to immediate life-safety issues. Yet, for rebuilding and mitigation programs to work right away during recovery, property owners and government officials need to quickly assess the damages and repairs needed. In our experience, owners start clean up and repairs in as little as the day after water has receded from a building. Community inspections must be made timely and inspections such as those to determine substantial damage in flood hazard areas are the initial triggers for mitigation programs to kick in - for example the Increased Cost of Compliance mitigation funds accessed through a property owner's flood insurance. When a community building department has thousands of inspections to do with a staff of 2-3 people which may be adequate capacity in non-disaster times, there is no hope of completing these inspections in a timely manner. Disallowing the reimbursement for these additional temporary staff to conduct inspections under the Stafford Act means a slower recovery and mitigation process, but even more important, it misses the opportunity to let citizens and businesses know how badly damaged their building is and what options are available to them to rebuild it to be safer in the future. And while it seems that increasing eligibility for reimbursement of these expenses is initially more costly, it ends saving much more time and money as the recovery proceeds.

Another related issue involves the bureaucratic processes related to getting technical assistance into the field after a disaster event. The Hazard Mitigation Technical Assistance Program (HMTAP) is one example. Currently, after FEMA has opened up a Joint Field Office (JFO), HMTAP assistance can

be requested by the state to support its Mitigation Strategy. However, unlike many provisions for assistance, the Federal Coordinating Officer (FCO) cannot, by himself, approve HMTAP assistance. Rather, it first is approved by the FCO, then the FEMA Region, and then FEMA Headquarters, wasting precious time in getting the technical resources in the field. ASFPM recommends that this process be changed to allow a quick review of the request to be done in the JFO. As long as the assistance request is consistent with the Mitigation Strategy and is an eligible activity, the FCO's approval would result in HMTAP assistance being provided. After Sandy which occurred in October of 2012, HMTAP assistance to conduct substantial damage determinations did not even begin until late January – nearly three months after the event. This is an unacceptable lag in time. Then, after determinations were conducted, there were many reports of communities ignoring the data – and ignoring their floodplain management regulations and responsibilities. More accountability and floodplain management technical assistance must be provided. ASFPM fully supports FEMA's undesirable but necessary job to enforce NFIP floodplain management standards after disaster events.

Still another related issue is the underutilization of mitigation through the Public Assistance (PA) program. ASFPM is aware that Administrator Fugate has made it a priority to ensure that this type of mitigation be a much larger component of the PA process. The success of 406 mitigation after an event has to do with three primary factors: The attitude of the FCO, the federal Public Assistance Officer, and FEMA Region. Our members have long reported that the primary objective of many FCOs is to spend few dollars, get those dollars out quickly, and close disaster field offices as soon as possible. Mitigation efforts take more time. Currently, we are not aware of any metrics for the performance of FCOs related to improving the resiliency of the disaster affected area. While we applaud FEMA's efforts to better train FCOs to understand the dimensions and importance of hazard mitigation, until this becomes a priority for the FCO, labor intensive efforts such as a robust mitigation presence – both 404 and 406 – will not occur, thus resulting in missed opportunities for mitigation and slower implementation of both mitigation and recovery programs. Most mitigation activities other than the strategy development and grant application process kickoff occur after the JFO is closed. Mechanisms must be developed to maintain the presence of staff and technical assistance throughout the mitigation process or at least longer than exists now. While this means more investment of resources initially, it also means a much more efficient program in terms of increased mitigation accomplished in much more acceptable timeframes. Currently the evaluation of the feasibility of mitigation under PA for each Project Worksheet (PW) is encouraged but not mandatory. Regardless of whether or not mitigation is actually done, this serves as technical assistance and provides a blueprint for the community to later implement the mitigation measure. Since Public Assistance comprises the bulk of expenditures from the Disaster Relief Fund, it is essential that mitigation be better integrated into PA.

Related to the previous issue, there could be a better balance of JFO resources. For example while there is a robust presence related to outreach and community affairs, there is generally little FEMA presence when it comes to mitigation and technical assistance. This must be improved. Recent experiences by other non-profit organizations in developing countries affected by earthquakes report better and more accepted mitigation by property owners when there is adequate technical assistance

provided to them after an event. Why could this not be done here in the United States? For example, area disaster field offices could have individuals or teams that could work with individual property owners to review and identify specific mitigation measures that could be taken on a building by building basis.

ASFPM recommendations related to post-disaster hazard mitigation activities:

- **Continue to provide for a 6-month lock in floor for HMGP.**
- **Specifically allow for the reimbursement of costs related to substantial damage determinations under the Public Assistance Program consistent with other life safety inspections.**
- **Require that FCOs have a performance metric related to hazard mitigation success**
- **Ensure that JFOs and FEMA's long-term recovery efforts have ample resources and consideration for mitigation programs that take several years after the declaration to complete.**
- **Speed up the delivery of HMTAP assistance.**
- **Require that the eligibility of Public Assistance at the local level is dependent on the community having a current hazard mitigation plan.**

Other Mitigation Tools

Tax Code Reforms to Improve Mitigation

As it exists now, the tax code provides maximum incentives to do nothing to improve one's resiliency against natural hazards. The casualty loss deduction requires that insurance and other payments to reduce the basis for the deduction – in other words people that take mitigative action like purchase flood insurance get less. There is no recognition of or credit for undertaking hazard mitigation activities. ASFPM has not been able to determine the cost to taxpayers the casualty loss deduction, but reforms could certainly be made to incentivize the deduction for those who have either undertaken or will undertake mitigation activities, and better target the deduction to those that need it.

ASFPM recommendations related to tax-code reforms:

- **Reform the casualty loss deduction to better target the deduction as well as incentivize those that have mitigated.**
- **Develop a hazard mitigation tax credit much like the energy efficiency tax credits that are given to property owners.**
- **Allow for tax advantaged disaster savings accounts.**
- **Provide specific IRS guidance more broadly exempting mitigation assistance from federal taxes. Currently FEMA mitigation programs have a specific exemption.**

Hazard Mitigation Planning

Hazard mitigation plans form the foundation for a community's long-term strategy to reduce disaster losses and break the cycle of disaster damage, reconstruction, and repeated damage. Hazard mitigation planning capability has increased since it was stipulated as part of the Disaster Mitigation Act of 2000. As of April 30, 2012, all 50 States, the District of Columbia and five territories have FEMA-approved State Mitigation Plans. A total of 20,202 communities have FEMA-approved Local multi-hazard mitigation plans, and an additional 105 Indian Tribal governments have FEMA-approved Tribal Mitigation Plans. Communities and Tribes with planned mitigation strategies include 69 percent of the nation's population. This effort has resulted in better local hazard mitigation capability. Before these planning requirements, local mitigation projects were often implemented in a haphazard way without coordination with any type of local plans. Going forward challenges related to mitigation planning are to perform effective and cost-efficient updates. The reduction in availability of PDM has many states concerned about resources to assist with mitigation plan updates. Also the availability of disaster assistance must be much more closely linked to a community's efforts to reduce risk in the long-term through mitigation planning.

ASFPM recommendations related to hazard mitigation planning:

- **Better incorporate climate change data into state and local hazard mitigation plans.**
- **Incentivize the linking of hazard mitigation plans to comprehensive plans**

Interagency Cooperation to Improve Flood Hazard Mitigation

ASFPM is very pleased that there are two inter-agency cooperative efforts to coordinate mitigation activities more broadly, the Mitigation Federal Leadership Group (MIT-FLG) and the Federal Interagency Floodplain Management Task Force (FIFM-TF). Both are important - while the scope of the former includes multiple hazards, the latter is very focused on mitigation and water resource related programs that impact floodplain management. ASFPM congratulates the Administration for its speed and initiative in developing and applying the Uniform Flood Risk Reduction Standard which is informed by the best science and best practices including assessments taken following Hurricane Sandy and brings the federal standard into alignment with many state and local standards already in place, takes into account the increased risk the region is facing from extreme weather events, sea level rise and other impacts of climate change and applies to the rebuilding of structures that were substantially damaged and will be repaired or rebuilt with federal funding. Other agencies such as NOAA and its Digital Coast Partnership has developed innovative outreach materials and tools to assist communities in rebuilding smarter and more resiliently. Many agencies have roles in flood hazard mitigation and continuing actions to foster and encourage coordination is key to ensuring that programs do not run at cross-purposes to one another or incentivize the wrong behavior.

Conclusion

Given the increasing costs of natural disasters, the predictions for more frequent and more severe storms and weather conditions, and the severe budgetary constraints the nation faces, getting effective mitigation accomplished is essential. It behooves us to figure out how to take much better advantage of the disaster recovery period and improved risk identification and messaging to get some serious mitigation work done – and save lives and many taxpayer dollars in the future. The Association of State Floodplain Managers appreciates this opportunity to share our observations and recommendations with the Subcommittee. For any further questions on this testimony contact Chad Berginnis, ASFPM Executive Director at cberginnis@floods.org (608) 828-3000 or Meredith Inderfurth, ASFPM Washington Liaison at (703) 448-0245.



Testimony

Of the

BuildStrong Coalition

Submitted to the

United States Senate

Homeland Security and Government Affairs Subcommittee on Emergency

Management, Intergovernmental Relations, and the District of Columbia,

Hearing on

"The Role of Mitigation in Reducing Federal Expenditures for Disaster Response"

May 14, 2014, 2:30 p.m. EST



Introduction

Chairman Begich, Ranking Member Paul and Members of the Homeland Security and Government Affairs Subcommittee on Emergency Management, Intergovernmental Relations and the District of Columbia, the BuildStrong Coalition thanks you for holding this hearing to examine the role of the private sector in emergency preparedness and response.

My name is Robert Detlefsen and I am the Vice President for Public Policy for the National Association of Mutual Insurance Companies. We are the largest property/casualty insurance trade association in the country, serving regional and local mutual insurance companies on main streets across America as well as many of the country's largest national insurers. The 1,400 NAMIC member companies serve more than 135 million auto, home and business policyholders and write more than \$196 billion in annual premiums, accounting for 50 percent of the automobile/homeowners market and 31 percent of the business insurance market. Through our advocacy programs, we promote public policy solutions that benefit NAMIC companies and the consumers we serve. Our educational programs enable us to become better leaders in our companies and the insurance industry for the benefit of our policyholders.

The insurance industry plays a vital role in helping individuals and businesses prepare for and recover from the potentially devastating effects of a disaster such as a catastrophic hurricane, storm, or wildfire. Superstorm Sandy, one of the most damaging storms to hit the United States, caused 72 deaths and \$18.75 billion in insured property losses in 15 states and the District of Columbia, according to Property Claim Services (PCS). Moody's Analytics, an economic research firm, puts total losses from Sandy at \$49.9 billion. Of this amount, approximately \$30 billion comes from physical storm damage. The remaining \$19.9 billion of losses comes from lost business activity.

NAMIC is proud to be one of the founding members of the BuildStrong Coalition, a group of national business and consumer organizations, companies, firefighters, emergency managers and building professionals dedicated to promoting stronger building codes. It is the mission of the BuildStrong Coalition to educate elected officials, families, communities and businesses on how to mitigate and recover from the devastating effects of natural disasters. BuildStrong strongly advocates incentive-based approaches to spur more states to adopt statewide model building codes and has made *S. 924, The Safe Building Code Incentive Act*, its signature priority. The goal of this legislation is to increase the number of states with minimum construction standards. BuildStrong is also a strong supporter of *S. 1991, The Disaster Savings Account of 2014*, which provides an incentive for homeowners to make their homes more resilient through a tax-free savings account to be used on mitigation activities. The coalition also supports *H.R. 2241, The Disaster Savings and Resilient Construction Act of 2013*, which provides a tax credit to businesses or homeowners who rebuild to resilient construction standards in declared federal disaster areas.



The nature of extreme events—as well as their effect on the economy—varies considerably. Natural disasters such as tornadoes, hurricanes and earthquakes, can last anywhere from a few seconds to several hours but cause substantial destruction in a concentrated area. Other disasters such as droughts and major floods tend to last much longer and cause damage over a more expansive area. However, regardless of their duration, disasters can leave an economic imprint on a community that lingers for years after the initial damage.

The BuildStrong Coalition shares the subcommittee’s goal of helping communities to prepare for and recover from natural disasters while saving taxpayer money in the process. Our first consideration, however, must always be the safety of our communities and the American people. Our thoughts and prayers go out to the victims of recent tragedies caused by natural disasters. Tragic events like these compel us to advance legislation to fortify the country’s defenses against future storms.

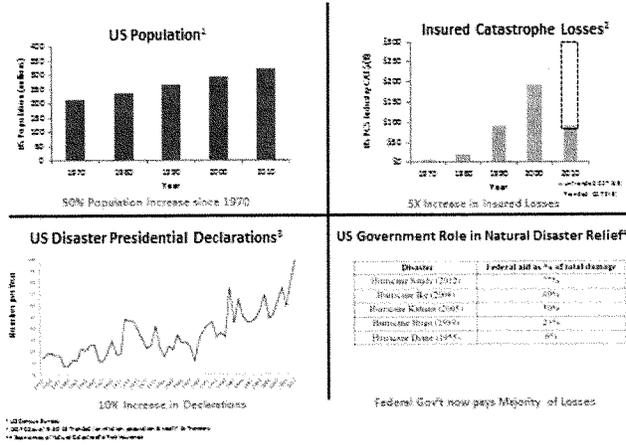
The Number of Natural Disasters is Increasing—How We Can Reduce the Economic Impact

The United States has spent nearly \$1 trillion dollars on disaster recovery and rebuilding since 1983. Natural disasters are increasing in frequency and severity every year. There were 128 natural disasters in the United States in 2013. Of these disasters, 70 were severe thunderstorms, 22 heat/wildfires, 20 floods, and 10 snowstorms. Six of the top ten significant natural catastrophes in 2013 (events with \$1 billion economic loss and/or 50 fatalities) were thunderstorms, which can occur in every region of this country. In 2013 alone, there were 60 presidential major disaster declarations. Natural disasters not only disrupt lives and destroy homes, but they also destroy livelihoods and cause an enormous amount of lost economic activity. A 2010 study by the National Federation of Independent Businesses found that 30 percent of small businesses fail to reopen following a presidential disaster declaration or emergency.

Although there are always year-to-year fluctuations in severe weather and its consequences, over time, the aggregated losses have been immense. From 1993 to 2012, insured catastrophe losses in the U.S. totaled \$391.7 billion, an average of almost \$20 billion per year. According to National Weather Service reports, severe weather events regularly occur in every state of the country in every month of the year – including winter storms, thunderstorms, tornadoes and hail, tropical cyclones, extreme temperature fluctuations, and drought. In addition to insured losses, the economic and human costs of severe weather are of growing concern to people and policymakers at the local, state, and national levels.



U.S. Catastrophes



Insurance coverage for losses resulting from natural disasters is typically less than 20 percent of the total loss because of limited participation in voluntary insurance coverage and losses that are outside the scope of typical insurance coverage. The federal government covers the remainder of the cost through emergency allocations, which require spending that directly increases the national debt. For decades, Congress has provided insufficient funding for disaster relief and then added funds in the middle of fiscal years. Supplemental disaster funds were appropriated in 17 of the 22 budget years between fiscal year 1989 and 2010, according to the Congressional Research Service.

Disaster losses have also increased as a result of population shifts that have increased the density and number of communities inhabiting high-risk areas, particularly those subject to coastal windstorms, storm surge, and wildfires. For example, coastal counties along the Gulf of Mexico and the Atlantic seaboard make up only three percent of the total U.S. landmass, yet account for about 15 percent of the population¹ Wildland-urban interface (WUI) zones accounted for nearly 60 percent of new construction during the most recent period studied by the U.S. Forest Service.²

¹ This estimate is based on the coastal counties outlined by AIR Worldwide in, "The Coastline at Risk: 2008 Update to the Estimated Insured Value of U.S. Coastal Properties", and population and land area figures from the U.S. Census Bureau.

² See <http://www.fs.fed.us/pnw/research/fire/wildland-urban.htm> (time period is the 1990s).



Rebuilding homes and lives in the aftermath of a disaster might take years, but often the rebuilding that occurs is neither stronger nor safer than before. Science shows that enhancing structures, usually for small upfront costs, saves homeowners and taxpayers money in the long run. Research conducted by the Insurance Institute for Business and Home Safety (IBHS) at a state-of-the-art Research Center in South Carolina further illustrates the important role that model building codes and superior construction standards can play in reducing the costs of natural disasters. For example, one test of small commercial facilities (such as those found in shopping centers throughout the U.S. found a tenfold increase in damages for the specimen built according to “common” practices compared to “best practices” endorsed by the masonry institute.

The research conducted by organizations like IBHS demonstrates how the human and financial toll of natural disasters can be greatly reduced by building stronger homes and business structures. With relatively simple upgrades in construction techniques such as strapping to create a continuous load path from the roof, through the walls, and into the foundation, using thicker roof decking, and using textured, rather than smooth nails, test residential homes were able to withstand 110 mile-per-hour winds with little damage. On the other hand, test homes with the same floor plan that were not upgraded, were completely destroyed at wind speeds of only 95 mph to 100 mph. The average costs of these upgrades to a new home can be as low as three to five percent of the value of the home. Taking steps to prepare in these ways before a disaster hits can make a major difference.

Stronger Building for a Safer, More Resilient America

The purpose of model building codes is to ensure that minimum standards are used in the design, construction, and maintenance of the places where people live. Building codes are intended to increase the safety and integrity of structures, thereby reducing deaths, injuries and property damage from a wide range of hazards. Uniform, statewide codes promote a level, predictable playing field for designers, builders and suppliers. Codes also offer a degree of comfort for buyers who care about the safety and soundness of their homes but lack the technical expertise to evaluate building plans or construction techniques. Building codes also allow for economies of scale in the production of building materials and construction, as well as a level of safety for first responders during and after fires and other disaster events.

Model codes are developed nationally in the U.S. by a consensus process involving researchers, construction experts, and local building officials. They are adopted and enforced at the state level to mitigate the effects of severe weather inherent to each state. Statewide building codes are not mandated by the federal government today and would not be pursuant to the enactment of *The Safe Building Code Incentive Act*.

The Safe Building Code Incentive Act is a mechanism by which states are incentivized, not mandated, to adopt and enforce model building codes. The proposed legislation would provide an additional 4 percent of post-disaster recovery funds to all states that adopt and enforce model



codes. The incentive is meant to encourage more states to rebuild to higher standards in order to eventually reduce the need for more disaster recovery money.

In recent years, there have been several significant studies that support the conclusion that enforcing model statewide building codes saves lives and greatly reduces property damage and the subsequent need for federal disaster aid.

In a study conducted in the aftermath of Hurricane Katrina, researchers at the Louisiana State University Hurricane Center estimated that stronger building codes would have reduced wind damage from Katrina by 80 percent, saving taxpayers and the local economy \$8 billion. Louisiana has since adopted and enforced model building codes.

In 2005, FEMA commissioned a study by the National Institute of Building Sciences' Multihazard Mitigation Council. The study, based on the work of more than 50 national experts, sought to assess the future savings from hazard mitigation activities. According to the study, every federal dollar spent on hazard mitigation (actions to reduce disaster losses) provides the nation with about \$4 in future savings.³ BuildStrong supports current proposals to update and expand the study.

In response to the devastating tornadoes in the spring of 2011, the FEMA Building Science Branch of the Federal Insurance and Mitigation Administration (FIMA) deployed a Mitigation Assessment Team (MAT) to Alabama, Georgia, Mississippi, Tennessee and Missouri to assess the damage caused by these storms. This report presented 49 recommendations directed at improving public safety and building performance during tornado events. The adoption and enforcement of model building codes was recommended more frequently than any other measure in the MAT report.

Another study found that losses from Hurricane Andrew, which struck south Florida in 1992 and caused more than \$20 billion in insured damage (adjusted for inflation), would have been reduced by 50 percent for residential property and by 40 percent for commercial property if those structures were built in accordance with Florida's 2004 statewide building code. An IBHS study following Hurricane Charley in 2004 found that modern building codes reduced the severity of property losses by 42 percent and the frequency of losses by 60 percent.

Although we have been able to gather valuable data on the effects of building codes and other mitigation measures from studies like these, additional research is needed to provide market participants with the tools necessary to make America's homes and businesses more resilient. That is why BuildStrong supports funding by the National Institute of Standards and

³ Multihazard Mitigation Council, December 19, 2005 ; <http://www.nibs.org/index.php/mmc/news/Entry/newstudydisastermitigationiscosteffectiveandreducesfuturelosses>



Technology, the National Science Foundation, and the National Institutes of Health for research and testing on how to reduce the cost of disasters. The IBHS Research Center represents a tangible \$40 million initial investment and a continuing multi-million dollar annual commitment by insurers to research, test, and facilitate the effectiveness, affordability, and financial value of stronger building codes and better built structures. As we have seen today, insured losses from natural disasters have skyrocketed in recent years. However, these losses pale in comparison to the losses incurred by the federal government. Natural disasters cost the federal government hundreds of billions of dollars each congress; yet, research and testing for mitigation and building performance has been underfunded for decades. This is why BuildStrong supports H.R. 1786, *The National Windstorm Impact Reduction Reauthorization Act of 2013*. This legislation develops and encourages the implementation of cost-effective mitigation measures, implements windstorm risk reduction measures by federal, state, and local governments, develops performance-based engineering tools and wind-related model building codes and standards, and ultimately achieves measurable reductions in the loss of life and property from windstorms.

Despite the evidence, most states have not enacted statewide building codes and necessary enforcement measures. In fact, a number of states have weakened their standards or lengthened their code cycles in recent years, including North Carolina and Louisiana. We believe that *The Safe Building Code Incentive Act* would help to correct this situation and refocus attention on the long-term savings and benefits from the adoption and enforcement of strong building codes.

Conclusion

I want to thank the subcommittee again for holding this important hearing and for providing the BuildStrong Coalition with the opportunity to discuss the crucial role strong building codes and other mitigation can play in making the nation safer and more secure in the face of natural disasters and bending the cost curve when it comes to disaster recovery. I also want to thank the Chairman for participating in BuildStrong's 2nd Annual Thought Leader's Forum on Building Codes for a Stronger, Safer America. He has been a leader on efforts to better prepare this country for the inevitable natural disasters it will face.

The ongoing need for emergency funding has often created political battles divided along party and geographic lines. We know that natural disasters are inevitable, and while planning for the costs associated with these disasters is not a perfect science, there is a need for the federal government to better prepare and budget for the storms before they occur. Merely hoping the weather cooperates and relying on luck during hurricane season is not the way to establish FEMA's disaster relief budget.

BuildStrong Coalition Members

The American Institute of Architects
American Society of Civil Engineers



Allstate Insurance Company
American Insurance Association
Concrete Reinforcing Steel Institute
Congressional Fire Services Institute
Council of Insurance Agents and Brokers
Farmers Insurance Group of Companies
Federal Alliance for Safe Homes
Financial Services Roundtable
Firemen's Association of the State of New York
Florida Association of Counties
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Independent Insurance Agents and Brokers of America
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National Association of State Fire Marshals
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National Ready Mixed Concrete Association
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NeighborWorks America
Professional Insurance Agents
Property Casualty Insurers Association of America
Reinsurance Association of America
Simpson Strong-Tie Co
Solutia
Travelers
State Farm Insurance Companies
The Hartford
USAA

Statement for the Record

On behalf of the
National Association of Home Builders

Before the
Senate Committee on Homeland Security and Government Affairs
Subcommittee on Emergency Management, Intergovernmental Relations, and the
District of Columbia

**Hearing: “The Role of Mitigation in Reducing Federal Expenditures for
Disaster Response”**

May 14, 2014

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Introduction

Chairman Begich, Ranking Member Paul, and distinguished Members of the Subcommittee, on behalf of the National Association of Home Builders (NAHB), we respectfully submit this statement discussing the role of mitigation in reducing federal expenditures for disaster response.

NAHB represents more than 140,000 members involved in the home building, remodeling, multifamily construction, property management, subcontracting and light commercial construction industries. We are affiliated with more than 800 state and local home builder associations throughout the country, and since the association's inception in 1942, NAHB's primary goal has been to ensure that housing is a national priority and that all Americans have access to safe, decent and affordable housing, whether they choose to buy or rent a home.

NAHB and builders across the country have a long history of volunteering after disasters to help rebuild devastated communities. NAHB frequently works with FEMA, HUD and other Federal agencies to develop guidance and best practices for addressing natural hazards in construction. In fact, NAHB recently signed onto an industry-wide commitment to promote resilience. We understand and have seen firsthand what tornadoes, hurricanes, and earthquakes can do and NAHB would like to work with Congress to help mitigate the impact these disasters have on the built environment.

All public policy should be based on reasonable risk, probable impacts on a specific community and sound scientific data. It should also include cost benefit analyses and technology assessments. Most importantly, however, decisions regarding specific mitigation strategies that impact individual communities, including on prospective home buyers and existing homeowners, must be made at the local level.

We agree with Mr. Miller, the Associate Administrator for the Federal Insurance and Mitigation Administration, when he stated in his testimony that most mitigation occurs at the local level because communities have a better understanding of risks. Disasters do not occur consistently across the country. State and local governments are best equipped to understand these risks and make decisions based on what is appropriate for the jurisdiction, considering both the community-wide impact of cleanup and recovery costs and efforts, and the impact of increased construction costs on the affordability of housing in the jurisdiction. While officials at all levels of government must work together so that lives, homes, schools, businesses and public infrastructure are protected from the damages and costs incurred by natural disasters, local communities must provide the first line of defense in terms of mitigation policies and practices.

What Can the Federal Government Do?

While states and localities need the flexibility to make these decisions, the federal government must also play an important role, providing funding and tools to help states, localities and homeowners implement these plans. Examples include:

Model Building Codes

Homes properly designed and constructed to meet the national model building codes have been shown to have substantial resistance to seismic, high wind, wild fire and flooding events. Various government agencies, including the National Institute of Standards and Technology (NIST), and the Federal Emergency Management Agency (FEMA) work with industry, state and local officials and other stakeholders through the International Code Council (ICC) to develop codes and standards. The ICC

brings together these stakeholders every three years and provides an open, consensus process to ensure that voices and interests are heard, and that no interest is over-represented. The building codes (IBC and IRC) establish a set of requirements for resilient construction, including structural provisions for high wind, seismic, and flood-prone areas and non-structural requirements for fire resistance, etc. NAHB believes this is the most appropriate venue to consider natural hazard mitigation.

While NAHB supports the building code process, we advise against creating new federal standards that would supersede the codes or bypass the states' and localities' right to adopt and amend those codes.

New Federal Standards: Any effort to create new, conflicting federal standards would not only cause confusion across the country, but it would circumvent the consensus process developed by the ICC. This process fosters a cohesive relationship between all levels of government, industry and other stakeholders, making it a strong and well-supported system. Further, federal law (National Technology Transfer and Advancement Act of 1995, clarified by OMB Circular A-119) requires the government to “use technical standards that are developed or adopted by voluntary consensus standards bodies” ... “in lieu of government-unique standards.”

Local Control: States and localities often look to national model building codes as templates, but they reserve the right to adopt and enforce these codes. The reason for this is simple – each jurisdiction has a different topography, climate and weather patterns, etc., and the states and cities, not the federal government, are best equipped to understand those challenges.

Beyond jurisdictional needs, the states provide a testing ground for these model codes. Often, potential conflicts between code provisions, enforcement issues, or other unintended consequences are not identified until a jurisdiction adopts and enforces a particular edition of the model codes and builders begin designing and constructing to that code. In many cases, these conflicts or consequences can impose significant costs on a builder or limit their choice of materials. For example, in the 2003 International Residential Code, a provision was added, that in many cases required all walls, including internal walls, of a house, to be fully sheathed using plywood or oriented strand board. The original intent of this change was to provide a more efficient method for wind and earthquake resistance in houses. This change excluded other traditional options, such as the use of gypsum board, fiberboard and let-in bracing, which could achieve the same structural integrity. Many jurisdictions took exception to this requirement and amended the code to allow for these traditional products. Six years later, the International Residential Code was also finally amended at the national level. State and local governments must be able to address such unintended consequences.

NAHB believes that any legislation geared towards the adoption of building codes must preserve the rights of states and localities to amend the model code.

Need to Address Aging Communities & Infrastructure

Modern building codes, such as the International Residential Code (IRC), have drastically improved the strength of the built environment. Older homes, however, built before the development and adoption of the IRC may be more vulnerable. Study after study has found that most structural failures, following a natural disaster, occur as a result of “inadequate design and construction methods” used before the adoption and enforcement of the 2000 International Building Code and International Residential Code (IBC/IRC).

After the 2004 hurricane season, FEMA found that no structural failures were found to buildings designed and constructed using the requirements in the 2000 IBC/IRC. They found similar results in a report published after Hurricane Katrina. In fact, the Institute for Business and Home Safety (IBHS) has identified retrofitting existing vulnerability as the primary way to actually reduce risk.

75-85% of existing buildings will still be in use in the year 2030. Improving community resiliency cannot be achieved without addressing existing buildings and mitigation efforts should focus on retrofitting old buildings. Retrofits, however, are expensive. The federal government can help homeowners afford such upgrade by offering tax incentives, rebates, grants or loans.

Establish Incentive Programs

The National Institute of Building Sciences' Multi-hazard Mitigation Council found that every dollar invested in hazard mitigation results in \$4 worth of savings. While this is true, the cost for that mitigation, where required by a building code or standard, is borne by the homeowner, while most of the savings are realized by the federal government or by state and local governments in terms of reduced disaster aid, cleanup costs, and loss of tax or other revenue as a result of business interruption, relocation of residents or reduction in tourism. While this is important, mitigation can be expensive and we must also help homeowners afford that cost.

Tax Incentives

Tax incentives are the fastest way to achieve market permeation. Homeowners can see their direct financial impact and can easily conduct a cost/benefit analysis before making a decision. We have seen this demonstrated in the world of energy efficiency. The 45L tax credit was established to provide a \$2,000 credit to builders of new homes that improve the energy efficiency of a home by a specified amount. It is simple, and easy to understand. In just 5 years (2006-2011), the credit grew from 0.7% to 11% of the market for new homes. By offering a simple tax credit to homeowners to retrofit their home, ensuring that it meets today's standards, we can have a real impact across the country. When developing these types of incentives, it is important to ensure that a homeowner will be able to qualify for the home purchase, after the increase construction costs are factored in.

Other Incentives to Homeowners

While NAHB believes that tax incentives are the most effective policy option, we understand that comprehensive tax reform is pending and establishing a new tax incentive may be very difficult politically. Other incentives can also work to achieve similar results. Programs, such as the Community Rating System, Hazard Mitigation Grant Program, Flood Mitigation Assistance Grants can provide lower insurance premiums, rebates, grants, and loans without the gross costs associated with tax credits and deductions.

Incentives to Communities

We would like to discourage the federal government from providing incentives targeting whole communities rather than individuals. Some lawmakers have proposed legislation that would offer incentives, such as additional post disaster mitigation funds for communities to adopt and enforce modern building codes. Incenting communities to adopt building codes can be effective; however it is important to ensure that states retain the ability to amend the code.

Other proposals further incentivize communities to adopt "above code" standards. As stated before, building codes already address disaster mitigation. Any decision to go beyond those

standards should be left to homeowners. Forcing, or providing incentives to communities to adopt blanket requirements are unnecessary and can hamper housing affordability and economic development. Beachfront property, for example may have different risks than homes located within the same local jurisdiction, but miles away from any body of water. State and local governments can be quick to accept federal dollars to buffer their budgets, but adopting blanket statewide or citywide policies are not always necessary or helpful. Localities need more flexibility to make these decisions. As such, federal incentives help homeowners meet these above-code standards and are much better than unnecessarily applying those standards to an entire community.

Invest in Building Science Research and Training

Developing new, innovative techniques, products and construction methods is a critical component to improving resiliency. The home building industry, largely comprised of small businesses, does not have the time, resources or expertise to conduct this type of research. It can often require constructing model components of homes, testing over long periods of time, and accounting for different climatic scenarios.

The Department of Agriculture’s Forest Products Laboratory, the Department of Energy’s Building America program, the National Institutes of Standards and Technology and the Department of Housing and Urban Development conduct and support this type of research. Increased, or at least maintained, funding for these programs can help ensure that new technologies and techniques are continually available in the market.

The Home Innovation Research Labs, a wholly-owned, independent subsidiary of NAHB was also founded in 1964 to improve the quality, durability, affordability and environmental performance of homes and home building products, ultimately eliminating barriers to innovation. The Research Labs partner with various federal agencies and building material companies to test products, conduct market research, and develop/implement best practices, assisting practitioners and trade contractors understand new technologies and applications.

Federal support is invaluable to our industry and without it, builders are left ill-equipped to meet housing demands.

Concerns about Above Code Standards

NAHB strongly believes that the model building codes provide improved performance against natural disasters. Several private industries have been creating new guidelines that claim to provide more resilience to buildings. Many of these programs were developed by particular interest groups representing, and perhaps profiting a particular industry. They have not received the same level of scrutiny, been exposed to broad public vetting, or undergone any consideration of costs or benefits that come with an open consensus process.

One such program is known as “FORTIFIED for Safer Business Standards.” The FORTIFIED designation, may add 3% to 8% to the cost of a home. An average new home costs approximately \$324,500. This could add an additional \$9,735-\$25,960 to the overall cost. Requiring the use of this designation would price out approximately 1.3 – 3.5 million households from the new home market and force them into existing homes, which depending on their age, may be significantly more vulnerable to natural disasters.

The primary benefit of using model building codes is that they are developed in an open, consensus process, whereby every stakeholder has the opportunity to be heard and no one interest is overrepresented.

Conclusion

Natural and manmade hazards pose a threat to our infrastructure and damage inflicted on homes create greater personal impact in our communities. NAHB shares your desire to ensure safe homes for all and welcome the opportunity to work with the committee to find cost effective solutions for natural hazards mitigation. Thank you for this opportunity.

**Questions for FEMA Associate Administrator Dave Miller
from Senator Mark Bech**

1. The National Earthquake Hazards Reduction Program (NEHRP) plays a critical role in promoting risk reduction and mitigation. As I'm sure you're aware, FEMA has certain statutory responsibilities pursuant to the NEHRP. Among these responsibilities is the translation and dissemination to the public of the knowledge acquired by the other NEHRP agencies with respect to model building codes, disaster preparation and response, lifeline and infrastructure protection, among other things. (P.L. 108-360)

The Subcommittee is concerned, given FEMA's statutory role in the dissemination of this knowledge to practitioners in the various States and localities, that instead of acting as a conduit for this information, the resources devoted internally to achieve these statutory requirements may act instead as a hindrance to the effective communication of this information.

- a. Can you please describe how the funding and activities FEMA undertakes pursuant to its NEHRP responsibilities effectively fulfills each of the NEHRP statutory requirements, and identify the FTEs by title and job responsibility who carry out these requirements?
- b. What have staffing levels for NEHRP activities been historically at FEMA since its inception? What are they now?
- c. What is the annual funding FEMA dedicates to NEHRP activities, and how does this compare with the level authorized under the NEHRP program?
- d. What affirmative actions is FEMA taking to ensure that the scientific findings of USGS, NIST and NSF are translated to professionals in the field?
- e. To the Committee's knowledge, FEMA does not currently provide state grants, despite having the authority to do so. Please explain the rationale behind this funding decision.

Response: FEMA implements the National Earthquake Hazards Reduction Program (NEHRP) statutory requirements with a staff of full and part-time employees that include one GS-15 supervisor, two GS-14 senior staff, two GS-13, and one GS-12 at Headquarters. Two regional GS-13 program managers are located in the field. FEMA implements the requirements of NEHRP (PL 108-360) by working closely with national standards and model building code organizations to promote the implementation of research results through support for disaster-resistant building codes and standards, the NEHRP Recommended Provisions, and mitigation awareness for building officials. FEMA promotes better building practices within the building design and construction industry for example, by developing design and construction guidance documents for earthquake rehabilitation, non-structural design, and rapid visual screening, as well as supporting implementation of the NEHRP Strategic Plan. FEMA provides annual

financial support to the regional earthquake consortia and other partners. The regional consortia and other partners leverage FEMA's efforts to train State and local emergency managers and others, support development of regional vulnerability and loss studies, develop and implement earthquake education and outreach, provide support to state earthquake program managers, and establish policy recommendations among other activities.

Over the past several years, FEMA has supported the implementation of earthquake education and public awareness program, through efforts such as the Quake Smart initiative to create earthquake awareness in the business community, development and delivery of earthquake training, and support for student earthquake design competitions. FEMA assists the National Institute of Standards and Technology, other Federal agencies, and private sector groups, in the preparation, maintenance, and dissemination of seismic resistant design guidance and related information on building codes, standards, and practices. For example, FEMA has embarked on a multi-year effort to develop next generation of the seismic design and construction methodology known as performance-based seismic design.

In FY 2001, the salaries and benefits (S&B) level was \$4.2M which supported over 40 full-time equivalent (FTE) employees. The current FY 2014 S&B level is \$1.049M, supporting a staffing level of 6 FTE. Two regional earthquake program managers are also supported thru regional office S&B.

The FY 2014 FEMA funding for NEHRP funding is \$8.5 M (\$7.451M program and \$1.049M S&B). The authorization level for the last year of the previous authorization (PL 108-360) was \$23.64M. Annual FEMA funding for NEHRP from FY 2000 through FY 2013 is shown below.

To more effectively manage the program in a constrained budget environment, in FY 2009, FEMA established a cooperative earthquake state assistance effort that was in addition to the earthquake state grants that are incorporated into the Emergency Management Performance Grant (EMPG) program. In FY 2012, it was determined that FEMA was required to enforce a 50% 'cash' match as part of those cooperative agreements which nearly half of the 33 high-earthquake risk States/Territories could not meet, all or in part. To continue to most effectively meet the goal of reducing earthquake risk, building and maintaining capacity to educate the public, including state and local officials, and encouraging multi-state partnerships, FEMA took a different direction in FY 2013 by utilizing the existing earthquake consortia and other partner organizations to meet that goal. FEMA continues to encourage states to use EMPG and other multi-hazard funding mechanisms to support state and local earthquake activities.

Historical Funding levels for FEMA NEHRP (May 2013)			
Fiscal Year	Budget	Authorization	S&B
2000	\$15,063,000	\$21,500,000	\$3,640,000
2001	\$10,270,000	\$19,861,000	\$4,230,000
2002	\$10,250,000	\$20,705,000	\$4,190,000
2003	\$7,410,000	\$21,585,000	\$4,630,000
2004	\$8,904,000	\$21,585,000	\$6,070,000

2005	\$8,251,000	\$21,000,000	\$4,980,000
2006	\$7,710,000	\$21,630,000	\$4,980,000
2007	\$7,343,000	\$22,280,000	\$5,000,000
2008	\$6,253,000	\$22,950,000	\$5,000,000
2009	\$9,110,000	\$23,640,000	\$1,500,000
2010	\$8,977,000	\$23,640,000	\$1,000,000
2011	\$7,792,000	\$23,640,000	\$1,000,000
2012	\$7,792,000	\$23,640,000	\$1,006,000
2013	\$7,707,000	\$23,640,000	\$1,041,000

**Post-Hearing Questions for the Record
Submitted to Mr. David Miller
From Senator Mary Landrieu**

**“The Role of Mitigation in Reducing Federal Expenditures for Disaster Response”
Wednesday, May 14, 2014**

1. There are a lot of concerns about the need to improve FEMA’s flood maps because they are the primary means by which the federal government evaluates and communicates risk to communities subject to flooding. What percentage of the Nation’s flood maps are accurate and up-to-date? What is the average time frame between flood map updates? How long will it take to develop and deliver accurate flood maps for the entire United States? How much money, personnel and other resources does FEMA invest in flood mapping every year and is that sufficient to meet demand? If not, please identify specific staffing or other federal management shortcomings that need to be addressed.

Response: Approximately 1.1 million miles of flooding source (inclusive of rivers, coastline, lakes, and ponds) are studied and the flood hazard information presented on FEMA’s flood maps. We monitor and manage our NFIP mapping inventory for these flooding sources closely through the use of a Coordinated Needs Management Strategy. As of March 2014, roughly 52% of these studied miles are either in compliance, or are actively being updated to achieve compliance with current technical standards. Of the remaining inventory, 40% of these studied miles require further assessment and the other 8% have been determined to require an updated study.

The process of assessing the map inventory involves an evaluation of physical or hydrological changes that have occurred within a particular stream corridor or watershed since the date of the existing analysis. Through this process, FEMA is able to identify geographies that may be in need of further investment to update the information on the flood map. These updates are prioritized based on program initiatives and available resources. Since natural changes to the environment and manmade development occur at different places across the country, the timeframe between flood map updates can vary. FEMA has the ability to update flood maps more frequently at a localized area of change through Letters of Map Change, which require communities to provide data that impacts the flood hazard as it becomes available.

Estimating the amount of resources needed to develop and deliver accurate flood maps for the entire United States involves accounting based on an ever changing environment. Existing maps continually become outdated as a result of physical changes, climatologically changes and methodological changes. Population growth, development, erosion, wild fires, flood control projects and other factors can all result in physical changes requiring updates to the maps. Additional rainfall, stream flow or tide gage records can result in changes to expected flood risk. Improvements in engineering methodologies and data can also result in changes to maps.

Current levels of funding allow FEMA to keep pace with change and will maintain the performance metric of 52% of miles studied.

2. The National Flood Insurance Program (NFIP) plays a critical role in mitigating this country's exposure to loss in natural disasters, and it imperative that it have the resources it needs to function efficiently and effectively. How much funding, personnel and other resources does FEMA invest every year in managing the NFIP and what percentage of the FEMA workforce and budget does this represent? Are these resources sufficient to meet demand? If not, please identify specific staffing or other federal management shortcomings that need to be addressed.

Response: The NFIP utilizes a three pronged approach to mitigating the country's exposure to flood losses – 1) flood risk identification and assessment through the flood mapping program; 2) flood risk reduction through floodplain management and flood mitigation grants; and 3) flood insurance to indemnify the remaining flood risk. The National Flood Insurance Fund (NFIF) is the primary funding mechanism for these activities and the majority of the NFIF is reserved funding for claims (96%). The NFIF is augmented with the Flood Hazard Mapping and Risk Assessment Fund (Risk MAP). These two funds represent 27 percent of FEMA's Gross Budget Authority but as noted above the majority of this percentage is reserved for paying claims. The operating budget used to implement and manage the NFIP is approximately 4% of the gross budget funding and just under 6.8% of the workforce. The following table (Table 1) lays out the FEMA investment in the NFIP from 2009 to the proposed investment for 2015.

Table 1

National Flood Insurance Fund Funding Summary 2009 - 2015							
PPA	FY 2009 Actuals	FY 2010 Actuals	FY 2011 Actuals	FY 2012 Actuals	FY 2013 Actuals	2014 Spend Plan	FY 2015 Request
Flood Mapping							
Flood Mapping Salary and Expenses	\$0	\$0	\$10,874,155	\$12,723,860	\$11,386,395	\$11,169,000	\$11,238,000
Flood Map Production and Technical Services	95,207,763	97,593,151	116,199,246	113,494,294	110,192,441	109,431,000	110,033,000
Total Flood Mapping	\$95,207,763	\$97,593,151	\$127,073,401	\$126,218,154	\$121,578,836	\$120,600,000	\$121,271,000
Floodplain Management							
Floodplain Management Salary and Admin Expenses	\$0	\$0	\$19,393,923	\$17,682,046	\$17,645,999	\$19,049,015	\$16,097,000
Program Management and Implementation	1,579,496	1,673,854	5,208,648	3,010,252	4,614,194	\$3,965,985	7,482,000
Community Assistance Program-State Support Services Element (CAP-SSSE) Grants	8,919,127	8,805,686	10,076,308	9,974,815	10,364,287	\$10,685,000	10,685,000
Total Floodplain Management	\$10,498,623	\$10,479,540	\$34,678,879	\$30,667,113	\$32,624,480	\$33,700,000	\$34,264,000
Total Flood Mapping and Floodplain Management	\$105,706,386	\$108,072,691	\$161,752,280	\$156,885,267	\$154,203,316	\$154,300,000	\$155,535,000
Flood Mitigation and Flood Insurance Operations							
Salaries and Expenses (includes Flood Ins Ops, Floodplain Mgt, and Flood Mapping)	\$32,328,639	\$25,171,839	\$10,584,431	\$12,495,714	\$13,219,273	\$15,625,000	\$15,852,000
Flood Mitigation and Flood Insurance Operations	7,390,126	14,751,004	3,259,188	4,114,577	2,627,244	\$6,375,000	7,907,000
Total Flood Mitigation and Flood Insurance Operations	\$39,718,765	\$39,922,843	\$13,843,619	\$16,610,291	\$15,846,517	\$22,000,000	\$23,759,000
NFIF Appropriated Total	\$145,425,151	\$147,995,534	\$175,595,899	\$173,495,558	\$170,049,833	\$176,300,000	\$179,294,000
*Actuals include expenditures from prior year carryover.							
Flood Hazard Mapping and Risk Analysis Program (Previously Flood Map Modernization Fund) Funding Summary 2009 - 2015							
PPA	FY 2009 Actuals	FY 2010 Actuals	FY 2011 Actuals	FY 2012 Actuals	FY 2013 Actuals	2014 Spend Plan	FY 2015 Request
Flood Map Modernization Fund	\$4,018,201	\$6,176,000	\$5,692,036	\$4,256,943	\$5,365,576	\$6,186,000	\$6,170,000
Flood Hazard Mapping and Risk Analysis Program	243,716,660	217,586,688	198,439,310	95,228,663	88,671,946	\$89,016,000	78,233,000
Total Flood Hazard Mapping and Risk Analysis Program	\$247,734,861	\$223,762,688	\$204,131,346	\$99,485,606	\$94,037,522	\$95,202,000	\$84,403,000

Table 2 zooms in on the FEMA investment in Flood Mapping from 2009 to the proposed investment for 2015.

Table 2

Flood Hazard Mapping and Risk Analysis Program (Previously Flood Map Modernization Fund) Funding Summary 2009 - 2015							
PPA	FY 2009 Actuals	FY 2010 Actuals	FY 2011 Actuals	FY2012 Actuals	FY 2013 Actuals	2014 Spend Plan	FY 2015 Request
Flood Mapping Salary and Expenses	\$0	\$0	\$10,874,155	\$12,723,860	\$11,386,395	\$11,169,000	\$11,238,000
Flood Map Production and Technical Services	\$95,207,763	\$97,593,151	\$116,199,246	\$113,494,294	\$110,192,441	\$109,431,000	\$110,033,000
Total Flood Mapping (Fund 05)	\$95,207,763	\$97,593,151	\$127,073,401	\$126,218,154	\$121,578,836	\$120,600,000	\$121,271,000
PPA	FY 2009 Actuals	FY 2010 Actuals	FY 2011 Actuals	FY2012 Actuals	FY 2013 Actuals	2014 Spend Plan	FY 2015 Request
Flood Map Modernization Fund	\$4,018,201	\$6,176,000	\$5,692,036	\$4,256,943	\$5,365,576	\$6,186,000	\$6,170,000
Flood Hazard Mapping and Risk Analysis Program	\$243,716,660	\$217,586,688	\$198,439,310	\$95,228,663	\$88,671,946	\$89,016,000	\$78,233,000
Total Flood Hazard Mapping and Risk Analysis Program (Fund 44)	\$247,734,861	\$223,762,688	\$204,131,346	\$99,485,606	\$94,037,522	\$95,202,000	\$84,403,000
Total Floodmapping Budgetary Resources (Flood Mapping/Flood Hazard Mapping and Risk Analysis)	\$342,942,624	\$321,355,839	\$331,204,747	\$225,703,760	\$215,616,358	\$215,802,000	\$205,674,000

FEMA is implementing the Biggert-Waters Flood Insurance Reform Act of 2012, as amended, and we have requested an increase in our base budget in FY2015 to support reform efforts moving forward. The 2015 President's Request was completed prior to the passing of the Homeowners Flood Insurance Affordability Act and FEMA is rapidly evaluating the impact of the recently enacted legislation on current and planned operations and resources to determine if adjustments to staffing and resources will be required.

- FEMA has stated that there is no "one size fits all" approach to mapping Coastal Levees and that LAMP has been intentionally designed such that no alternative method of analysis that could improve the accuracy of flood maps is off the table, but the existing LAMP process is designed around riverine, not Coastal, flood events. From the direction of the winds to the source of flooding, significant differences exist that need to be accurately reflected in the new flood maps or we won't be any better off than we are today. At the end of the day, we all agree that we need flood maps that accurately reflect real risk. Will you provide a clear directive to your Regional Offices and contractors that in mapping Coastal Levee Systems they have the flexibility to use alternative methods of analysis and to draw upon the history and experience of the local stakeholders?

Response: It is correct that there is no "one size fits all" approach to mapping the flood hazards associated with levees. This is true whether the levees are impacted by coastal or inland flood hazards. Accordingly, the levee analysis and mapping approach (LAMP) was designed to ensure greater flexibility via multiple technical procedures that can be applied to levee systems based upon certain design, structural, operational, and maintenance criteria, not necessarily the type of flood hazard. The multiple technical procedures now available for the levee analysis and mapping approach are applicable for

levees and floodwalls that reduce the risk of flooding from inland or coastal flooding sources.

As you are aware, prior to the levee analysis and mapping approach if a levee did not meet all of the structural criteria it was mapped as though the levee had no effect in reducing flood risk. This left no flexibility to simulate how flood waters would interact with the levee during a flood. By treating levees consistently with respect to structural design criteria and the forces of various flood hazard types, the levee analysis and mapping approach has introduced greater flexibility in determining the risk reduction capabilities of a specific levee and mapping the associated flood hazards.

After establishing criteria to inform the appropriate technical procedure, FEMA was very cautious in the design of the levee analysis and mapping approach to not over-prescribe coastal or inland flood modeling solutions. Doing so would have restricted the ability of communities, levee owners, FEMA regional engineers and mapping partners to develop project specific mapping solutions that account for community or project specific variables, particularly in coastal areas. When developing these solutions Regional Offices are encouraged to work collaboratively with local stakeholders to account for the unique flooding and local characteristics of the levee to determine the appropriate flood modeling and mapping solution that is consistent with FEMA coastal and inland flood mapping standards for the NFIP

Thus, FEMA will re-emphasize that the levee analysis and mapping approach is designed to ensure that they can draw upon the history and experience of local stakeholders to determine the appropriate methods of simulating and mapping coastal flood hazards associated with non-accredited levees.

4. In your testimony, you listed improved integration of Public Assistance and Hazard Mitigation Programs as a focus area that would increase our ability to reduce risk nationwide. While I share your goal, I do not believe that that in and of itself will solve the problem, and I believe that the National Flood Insurance Program also needs to be included in that discussion.

EXAMPLE: The New Orleans Lakefront Airport was rebuilt with \$80 million in federal funding after being inundated in Hurricane Katrina. Because the facility is located in a V Zone outside the levee system, they- rightfully so- had to incorporate a number of mitigation elements into rebuilding process, and now they are struggling to get credit for them in the National Flood Insurance Program.

What can you do to better align Public Assistance, Hazard Mitigation Assistance and the National Flood Insurance Program to minimize duplication of efforts and improve the efficiency of these separate, but related programs?

Response: FEMA is committed to maximizing mitigation for critical facilities and providing resources to assist states and communities as they implement mitigation actions into their recovery decisions. FEMA can assist applicants in identifying appropriate mitigation actions for high value infrastructure. This may include potential mitigation that may be eligible under Public Assistance Mitigation funding authorities (406 Mitigation), HMGP projects or funds from other sources that can be leveraged to achieve holistic mitigation that addresses root cause, particularly for facilities that sustain recurring damage from similar events. Applicants must consider the impact their proposed mitigation will have on insurance rates as they formulate priorities and make recovery decisions. States also must commit to early discussions and decisions for how Hazard Mitigation Grant Program (HMGP) funds will be assigned for public facilities and infrastructure. State decisions for cost share strategies can also impact potential mitigation efforts.

FEMA introduced a requirement that all HMA grants, including Pre-disaster Mitigation and Flood Mitigation Assistance grants, must comply with ASCE-24 as minimum standards. Building to these higher standards can result in reduced premiums and is one example of coordinated effort across FEMA's Floodplain Management, Building Sciences and grants branches.

FEMA encourages applicants to consider comprehensive mitigation public facilities during their plan developments; and to submit Hazard Mitigation Grant Program (HMGP) projects that complement repair and mitigation work funded by Public Assistance. Addressing insurance implications during planning and early in recovery will help states prioritize limited HMGP funds while ensuring that public interests are mitigated to a level of protection that can favorably impact insurance rates.

**Post-Hearing Questions for the Record
Submitted to Mr. Christopher Currie
From Senator Mary Landrieu**

**“The Role of Mitigation in Reducing Federal Expenditures for Disaster Response”
Wednesday, May 14, 2014**

1. One of the biggest challenges we face as elected officials advocating for mitigation programs is quantifying the cost savings that are realized from these investments. Administrator Miller cited an annual \$1.7 billion savings from the federal floodplain management efforts. The Multihazard Mitigation Council estimated \$4 dollars were saved for every dollar invested in mitigation. A separate Congressional Budget Office (CBO) report pegged the return on investment at 3-to-1. While these statistics are helpful, they are not concrete enough to be terribly useful. Can you quantify the return on investment by individual programs (NFIP, Hazard Mitigation, etc.) or policies to better inform our debate about where limited resources should be invested?

Response: Gathering comprehensive and reliable data to make decisions about cost-benefit tradeoffs and return on investment of mitigation activities by individual programs is difficult. Hazard mitigation describes the capabilities necessary to reduce loss of life and property by lessening the impact of disasters. Therefore, by definition, federal investments in hazard mitigation measures should reduce the cost of damages that otherwise would have occurred. However, measuring the return on investment precisely and accurately presents formidable challenges. First, collecting concrete data on the effect of investments in hazard mitigation requires knowledge of damage incurred with and without mitigation as a result of the same or similar disaster conditions—for example, it might be possible to collect concrete data on the effects of hazard mitigation for a limited set of repetitive loss properties. However, for the most part, it is impossible to measure the losses that would have been incurred without mitigation in precise, concrete terms.

The Federal Emergency Management Agency (FEMA) has developed a modeling methodology to assess the performance of flood mitigation projects—loss avoidance studies—drawing on a decade of experience with flood programs in actual post-project hazard events. However, in many circumstances, modeling the difference between losses with and without hazard mitigation measures presents challenges, in part because of the lack of concrete data to inform assumptions that underpin the models. Another challenge is that savings depend on two highly uncertain variables—(1) the frequency and severity of future disasters affecting the property or facility in which federal investments are made, and (2) the extent to which the federal government will bear the costs to recover from those disasters.

The return on investment of mitigation also depends on the nature of the specific mitigation activities and their impact on the affected property and thus, varies on a project-by-project basis.

For example, the 2005 Multihazard Mitigation Council (MMC) study that you cited attempted to quantify the future savings (in terms of losses avoided) from hazard mitigation activities related to earthquake, wind and flood funded through three major FEMA natural hazard mitigation grant programs—the Hazard Grant Mitigation Program, Project Impact, and the Flood Mitigation Assistance Program. The study results indicated that the natural hazard mitigation activities funded by the three FEMA grant programs between 1993 and 2003 were cost-effective and reduced future losses from earthquake, wind, and flood events by the often quoted four dollars for every dollar of investment. Other organizations have conducted even more narrowly scoped studies, using specific sets of available data and focused on specific hazard mitigation goals. For example, a Brookings Institution study found that implementing certain mitigation alternatives, including reforming the National Flood Insurance Program, could save the federal government \$40 billion over 10 years. In addition, the U.S. Army Corps of Engineers conducted a study to show that its projects to limit river and coastal flood damage have saved an estimated \$706 billion—approximately \$6 for every dollar spent. However, GAO has not assessed the reliability of these studies.

Designing a comprehensive study to assess the cost-benefit tradeoffs and return on investment of mitigation activities would require substantial investment and expertise. Furthermore, the extent to which reliable data necessary to conduct such a study would be available is not clear. Finally, results of such a study would be subject to a degree of uncertainty given the uncertain and variable conditions being studied.