



April 12, 2017

Robert J. Fenton, Jr.
Acting Administrator
Federal Emergency Management Agency
500 C Street S.W.
Washington, D.C. 20472

Regulatory Affairs Division,
Office of Chief Counsel, Federal Emergency Management Agency,
8NE, 500 C Street, SW, Washington, DC 20472-3100

Docket ID FEMA-2016-0003

Comments re: Supplemental Advance Notice of Proposed Rulemaking for Establishing a Deductible for FEMA's Public Assistance Program

Dear Acting Administrator Fenton,

On behalf of the Union of Concerned Scientist's 500,000 members and supporters, we are writing to provide comments on the Federal Emergency Management Agency's (FEMA's) Supplemental Advance Notice of Proposed Rulemaking (SANPRM) for Establishing a Deductible for FEMA's Public Assistance (PA) Program. We appreciate the opportunity to provide input on the model and the credit structure outlined in the SANPRM. Our comments here build upon earlier comments we submitted on the related Advance Notice of Proposed Rulemaking (ANPRM).¹

UCS supports the concept of a well-designed deductible for the PA program. We believe that establishing a disaster deductible could be an effective way of addressing a number of priorities for reform previously identified by the Government Accountability Office, the DHS OIG, Congress, and indeed by FEMA itself. Rather than use blunt, inequitable methods that just transfer costs from the federal government to state, local and tribal governments, we are encouraged that FEMA is exploring ways to help lower the costs of disasters through hazard mitigation measures. The PA deductible could help encourage states to take pre-disaster protective actions to make communities more resilient to disasters. With careful attention to the details of such a proposal,

¹ See the Union of Concerned Scientists March 21, 2016 comments on the Advance Notice of Proposed Rulemaking for Establishing a Deductible for FEMA's Public Assistance Program <https://www.regulations.gov/document?D=FEMA-2016-0003-0111>

this type of concept could help advance community resilience and ensure that taxpayer dollars are wisely invested. Our comments include recommendations to improve the proposed design of the PA deductible to help limit inequitable or risky outcomes.

At the outset, as FEMA undertakes to reform the way the Public Assistance Program is administered, we urge the agency to ensure that these reforms:

- (i) Provide a strong incentive for states to invest more in pre-disaster preparedness measures that would help limit harm to people, property, and natural functions of ecosystems over the long-term and ensure that taxpayer dollars are spent wisely;
- (ii) Are administered in an equitable way to help protect the most vulnerable communities, especially low-income and minority communities;
- (iii) Take into account the best available science on growing climate risks including: flooding worsened by sea level rise and more frequent and heavy downpours; droughts; wildfires; and other types of impacts related to climate change; and
- (iv) Fairly take into account the specific circumstances of states, so that they are able to access the much-needed aid and recovery resources that are their due in the wake of major disasters, in line with the provisions of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act).

A science-based, equitable approach to building resilience to disasters will go a long way toward protecting people and property, while ensuring the best use of taxpayer dollars and the functions of our natural ecosystems. UCS has developed a set of principles that can help inform this type of approach, *Toward Climate Resilience: A Framework and Principles for Science-Based Adaptation*.²

Studies show that investments in pre-disaster risk reduction measures have a payback of at least 4:1 and estimates of the benefits of investments in flood mitigation are higher at 5:1.^{3,4,5} Yet our nation continues to under-invest in sensible pre-disaster hazard mitigation measures even as more American lives are lost and the costs of weather and climate disasters grow.⁶

Below we offer comments on design principles for a PA deductible, building on provisions highlighted in the SANPRM:

² Spanger-Siegfried, E., J. Funk, R. Cleetus, M. Deas, and J. Christian-Smith. 2016. *Toward Climate Resilience: A Framework and Principles for Science-Based Adaptation*. Online at <http://www.ucusa.org/sites/default/files/attach/2016/06/climate-resilience-framework-and-principles.pdf>

³ For example, studies from the Wharton School at the University of Pennsylvania and the insurance giant Swiss Re indicate that higher design standards have a high payback. See

<https://www.planning.org/research/postdisaster/briefingpapers/pdf/hazardmitigation.pdf>

⁴ Multihazard Mitigation Council (MMC). 2005. *Natural hazard mitigation saves: An independent study to assess the future savings from mitigation activities*. Washington, DC: National Institute of Building Science. Online at https://c.ymcdn.com/sites/www.nibs.org/resource/resmgr/MMC/hms_vol1.pdf.

⁵ Rose, A., K. Porter, N. Dash, J. Bouabid, C. Huyck, J. Whitehead, D. Shaw, R. Eguchi, C. Taylor, T. McLane, L.T. Tobin, P.T. Ganderton, D. Godschalk, A.S. Kiremidjian, K. Tierney, and C.T. West. 2007. Benefit-cost analysis of FEMA hazard mitigation grants. *Natural Hazards Review* 8(4):97–111. Online at http://research.create.usc.edu/cgi/viewcontent.cgi?article=1014&context=published_papers.

⁶ See NOAA 2017. *Billion-Dollar Weather and Climate Disasters: Overview* at <https://www.ncdc.noaa.gov/billions/>

1. **UCS strongly supports the overall proposal for a PA deductible along the lines FEMA has proposed.** We offer recommendations to improve on the policy design below. In general, we agree that FEMA has taken a thorough and thoughtful approach to designing the deductible in a way that is effective and fair. The four-step process that FEMA has outlined to calculate the deductible is clear and transparent. We support an approach like this, with certain improvements as outlined in our comments. We encourage FEMA to further refine the thinking around the calculation and updating of the base deductible. As currently formulated it is backward looking and there may be ways to improve it by including forward-looking elements.
2. **UCS strongly recommends that the PA deductible is designed in a way that appropriately incorporates climate projections and future risks.** FEMA’s proposal to use information from Hazus to create a risk index for states has some drawbacks. While we support the use of a publically accessible data source, Hazus as currently configured does not explicitly include projections of future conditions in its estimates of potential losses. If FEMA chooses to use HAZUS, the platform must be updated to include the best available scientific projections of future conditions, including projections for future population and future riverine hydrology, as well as of sea level rise and other climate impacts that exacerbate disaster risks. Furthermore, any tools or data used must be made more user-friendly and accessible so that local decision makers, experts and the public can be better informed and engage more fully in risk assessments and solutions.

Below we outline recent science and UCS research relevant for assessing future risks and developing the PA deductible.

Warming climate, rising seas, extreme precipitation and development in floodplains contribute to growing flood risks

Climate change is already contributing to sea level rise and increased risk of heavy downpours—both of which increase the risk of flooding—and scientific projections show that these impacts will worsen as temperatures rise. Taking account of climate risks today will help ensure that our communities and critical infrastructure are more resilient in a climate-altered future.

According to the 2014 Third National Climate Assessment, climate change and other factors may increase the risks of flooding in many U.S. regions.⁷ For example, the report says that “The risks from future floods are significant, given expanded development in coastal areas and floodplains, unabated urbanization, land-use changes, and human-induced climate change.” And “...human-induced warming increases heavy downpours, causes more extensive storm surges due to sea level rise, and leads to more rapid spring snowmelt.”

⁷ Melillo, J.M., T.C. Richmond, and G.W. Yohe (eds.) 2014. Climate change impacts in the United States: The Third National Climate Assessment. Washington, DC: U.S. Global Change Research Program. Online at <http://nca2014.globalchange.gov/>

Global sea level rose roughly eight inches from 1880 to 2009, with global warming as the main driver.⁸ Rising air temperatures are causing the oceans to warm and expand, as well as melting glaciers and land-based ice sheets.⁹ Sea level rise is also accelerating, having nearly doubled in recent years.¹⁰ The East and Gulf coasts of the U.S. are experiencing some of the highest and fastest rates of relative sea level rise globally, in part due to additional local factors like land subsidence, groundwater withdrawals and changing ocean currents.¹¹

The Union of Concerned Scientists (UCS) research summarized in our *Encroaching Tides* report shows that flooding during high tides, especially during the Spring and Fall, is already common in some places on the East and Gulf coasts of the U.S.¹² With rising sea levels, tidal flooding is expected to grow to the point that, without major investment, sections of coastal cities will flood so often they'll become unusable in the near future. Most of the 52 coastal towns studied in the report could see a tripling in annual tidal floods in 15 years and a tenfold increase in 30 years.¹³ In places familiar with tidal flooding today, this means they could see more than 100 tidal floods each year in just 15 years' time, and that a portion of those floods would be increasingly large and damaging. The federal government makes substantial investments in many coastal cities, and must do so in light of the science at hand.

Research from NOAA also shows that many locations along the East, Gulf and West coasts of the U.S. will surpass a tipping point of 30 days per year of flooding by 2050.¹⁴ This study introduced the concept of a *tipping point* to describe the point at which “impacts from future coastal inundation when critical elevation thresholds for various public works or coastal ecosystem habitats may become increasingly compromised by increasingly severe tidal flooding.” As one example, the City of Miami Beach is spending \$100 million per year for the next 5 years to provide temporary relief from this problem by installing stormwater pumps and upgrading drainage infrastructure.^{15, 16}

⁸ Church, J.A., and N.J. White. 2011. Sea-level rise from the late 19th to early 21st century. *Surveys in Geophysics* doi:10.1007/s10712-011-9119-1; Church, J.A., N.J. White, L.F. Konikow, C.M. Domingues, J.G. Cogley, E. Rignot, J.M. Gregory, M.R. van den Broeke, A.J. Monaghan, and I. Vिलocogna. 2011. Revisiting the earth's sea-level and energy budgets from 1961 to 2008. *Geophysical Research Letters* 38; doi:10.1029/2011GL048794.

⁹ Cazenave, A., and W. Llovel. 2010. Contemporary sea level rise. *Annual Review of Marine Science* 2:145–173; Lombard, A., A. Cazenave, P.Y. Le Traon, and M. Ishii. 2005. Contribution of thermal expansion to present-day sea level change revisited. *Global and Planetary Change* 47(1):1–16.

¹⁰ Church and White 2011 (*ibid*); Ablain, M., A. Cazenave, G. Valladeau, and S. Guinehut. 2009. A new assessment of the error budget of global mean sea level rate estimated by satellite altimetry over 1993–2008. *Ocean Science* 5:193–201; Leuliette, E.W., R.S. Nerem, and G.T. Mitchum. 2004. Calibration of TOPEX/Poseidon and Jason altimeter data to construct a continuous record of mean sea level change. *Marine Geodesy* 27:79–94; doi:10.1080/01490410490465193.

¹¹ Ezer et al. 2013; Boon 2012; Sallenger, Doran, and Howd 2012.

¹² Spanger-Siegfried E., M. Fitzpatrick and K. Dahl. 2014. *Encroaching Tides: How Sea Level Rise and Tidal Flooding Threaten U.S. East and Gulf Coast Communities over the Next 30 Years*. Online at www.ucusa.org/encroachingtides

¹³ *Ibid*. Spanger-Siegfried E., M. Fitzpatrick and K. Dahl. 2014.

¹⁴ Sweet, W.V. and J. Park. 2015. From the extreme to the mean: Acceleration and tipping points of coastal inundation from sea level rise. Online at <http://onlinelibrary.wiley.com/doi/10.1002/2014EF000272/full>

¹⁵ Flechas, J. 'King tide' will be first test for Miami Beach's new pumps. Online at: <http://www.miamiherald.com/news/local/community/miami-dade/miami-beach/article2541332.html>

UCS' recent *US Military on the Front Lines of Rising Seas* report, highlights the growing flood exposure of military sites due to climate-driven trends including sea level rise, increased tidal flooding and heightened storm surges.¹⁷ Some striking findings from this analysis include:

- By 2050, half of the 18 installations analyzed would experience 270 or more flood events per year—up from just 10 events per year today—under the intermediate sea level rise scenario.
- By 2050, four of the 18 sites—Naval Air Station Key West, Naval Station Mayport, Fort Eustis at Joint Base Langley-Eustis, and Marine Corps Recruit Depot Parris Island—stand to lose one-fifth or more of their land due to daily high-tide flooding under the highest sea level rise scenario.
- By 2070, half of the 18 installations would experience 520 or more flood events annually—the equivalent of more than one flood daily—under the intermediate sea level rise scenario.

Heavy downpours are a leading cause of flooding, including in inland areas. According to the NCA:

“Heavy downpours are increasing nationally, especially over the last three to five decades. The heaviest rainfall events have become heavier and more frequent, and the amount of rain falling on the heaviest rain days has also increased. Since 1991, the amount of rain falling in very heavy precipitation events has been significantly above average. This increase has been greatest in the Northeast, Midwest, and upper Great Plains – more than 30% above the 1901-1960 average. There has also been an increase in flooding events in the Midwest and Northeast, where the largest increases in heavy rain amounts have occurred.”

And: *“The mechanism driving these changes is well understood. Warmer air can contain more water vapor than cooler air. Global analyses show that the amount of water vapor in the atmosphere has in fact increased due to human-caused warming.”*¹⁸

The NCA also notes that although projected changes in overall precipitation are uncertain in many U.S. areas, *“there is a high degree of certainty that the heaviest precipitation events will increase everywhere, and by large amounts.”*¹⁹

¹⁶ Union of Concerned Scientists. 2016. Fact Sheet: Encroaching Tides in Miami-Dade County, Florida: Investing in Preparedness to Manage the Impacts of Rising Seas. <http://www.ucsusa.org/sites/default/files/attach/2016/04/miami-dade-sea-level-rise-tidal-flooding-fact-sheet.pdf>

¹⁷ Spanger-Siegfried, E., K. Dahl, A. and S. Udvardy. 2016. US Military on the Frontlines of Rising Seas.

<http://www.ucsusa.org/global-warming/global-warming-impacts/sea-level-rise-flooding-us-military-bases#.Waf0lvkrJaQ>

¹⁸ Melillo, J.M., T.C. Richmond, and G.W. Yohe (eds.) 2014. Climate change impacts in the United States: The Third National Climate Assessment. Washington, DC: U.S. Global Change Research Program. Online at <http://nca2014.globalchange.gov/>

¹⁹ Melillo, J.M., T.C. Richmond, and G.W. Yohe (eds.) 2014. Climate change impacts in the United States: The Third National Climate Assessment. Washington, DC: U.S. Global Change Research Program. Online at <http://nca2014.globalchange.gov/>

3. **UCS strongly believes that the deductible should be constructed in a way that addresses equity considerations related to preparedness.** FEMA should create incentives for states to invest in protective measures in disadvantaged communities that may be at heightened risk of disasters and face disproportionate impacts from them. A history of underinvestment in these communities, combined with socioeconomic conditions, can perpetuate disaster risks and inequity.²⁰ FEMA should provide much higher credit for measures that take into account socioeconomic equity considerations such as investments that states make in communities that face a disproportionate risk due to socioeconomic factors— for example, measures taken in low-income communities. We recommend a 4:1 credit for these types of measures. We recommend using an equity screening tool to help identify such locations, similar to the climate-equity tool proposed by UCS in a recent study²¹ or using other publicly-available metrics like the Social Vulnerability Index (SoVI).²² Without this type of provision, states might choose to concentrate their hazard mitigation actions in wealthier communities where more economically valuable assets may be concentrated.

4. **UCS supports the \$3.00 in deductible credit for every \$1.00 in State spending on qualifying mitigation activities.** We are also enthusiastically supportive of not capping the potential mitigation credit that may be earned in this model so that it would be possible for a State to fully satisfy its annual deductible by investing at least one-third of its deductible amount in qualifying mitigation activities each year.
“This could not only fully satisfy the State’s deductible well in advance of any declaration activity, thereby eliminating application of the deductible in the State for that year, but could also deliver the State future savings by reducing the severity or consequences of forthcoming disasters. FEMA also seeks comment specifically on whether incentivizing further spending by State governments using credit mechanisms of mitigation expenditure credits and non-Stafford expenditure credits could potentially dampen or crowd out private mitigation expenditures.”

We also recommend that FEMA provide more explicit guidance favoring flood mitigation options that rely on nature-based systems, else they are sometimes relegated to second place consideration. Features like wetlands, dunes and barrier islands can help provide critical defense against waves, coastal storms and flooding.^{23,24} Other riverine

²⁰ Patterson, Jacqui, 2015, Equity in Resilience Building for Climate Adaptation Planning. Washington, D.C.: National Association for the Advancement of Colored People. <http://www.naacp.org/latest/equity-in-resilience-building-for-climate-adaptation-planning/>

²¹ Cleetus, R., R. Bueno, and K. Dahl. Surviving and thriving in the face of rising seas: Building resilience for communities on the front lines of climate change. Online at <http://www.ucsusa.org/sites/default/files/attach/2015/11/surviving-and-thriving-full-report.pdf>

²² See <http://artsandsciences.sc.edu/geog/hvri/sovi%20%AE-0>

²³ Moser, S.C., M.A. Davidson, P. Kirshen, P. Mulvaney, J.F. Murley, J.E. Neumann, L. Petes, and D. Reed. 2014. Coastal zone development and ecosystems. In Climate change impacts in the United States: The Third National Climate Assessment, edited by J.M. Melillo, T.C. Richmond, and G.W. Yohe. Washington, DC: U.S. Global Change Research Program, 670–706.

²⁴ USACE. 2013. Coastal Risk Reduction and Resilience. CWTS 2013-3. U.S. Army Corps of Engineers, Washington, D.C. Online at http://www.corpsclimate.us/docs/USACE_Coastal_Risk_Reduction_final_CWTS_2013-3.pdf

restoration efforts such as levee setbacks, dam removal, reconnecting floodplains, or enlarging culverts help to reduce flood risks while increasing ecosystem services.

On this issue, we urge FEMA to adopt the Army Corps of Engineers (USACE) definition of natural and nature-based features (NNBF) as it is more comprehensive and supports the broader ecosystem beyond just the single feature:

“Natural Features are created and evolve over time through the actions of physical, biological, geologic, and chemical processes operating in nature. Natural coastal features take a variety of forms, including reefs (e.g., coral and oyster), barrier islands, dunes, beaches, wetlands, and maritime forests. The relationships and interactions among the natural and built features comprising the coastal system are important variables determining coastal vulnerability, reliability, risk, and resilience.

Nature-Based Features are those that may mimic characteristics of natural features but are created by human design, engineering, and construction to provide specific services such as coastal risk reduction. The combination of both natural and nature-based features is referred to collectively as NNBF.”²⁵

5. **UCS recommends that FEMA expand the list of state actions that qualify to reduce the PA deductible** to include any robust state-wide measures that help reduce disaster risks. For example, several states have protective freeboard regulations that go above the minimum federal requirements that should get credit. Investments in hazard mitigation (with extra credit for nature-based, green measures such as wetlands and living shorelines and less credit for hardening measures such as levees), enhanced design standards, freeboard standards and building codes, protective zoning standards, statewide flood mapping (e.g. North Carolina²⁶), updated LiDAR datasets, and state-funded strategic plans and incentives for managed retreat from high-risk areas should also qualify.²⁷ State-wide actions that explicitly take into account future risks and conditions should receive higher credit than those that do not.

We specifically urge FEMA to fully credit non-structural and nature based mitigation measures. Approaches like home buyouts and relocation are truly protective, valuable actions because they move people away from high-risk zones once and for all. They should therefore be credited higher than mitigation options like levees, which still leave communities with residual risk.

²⁵ See p 2 of USAC January 2015 report entitled: [Use of Natural and Nature-Based Features \(NNBF\) for Coastal Resilience Final Report](#).

²⁶ See http://www.ncfloodmaps.com/top_sms.htm

²⁷ See *Adaptation: Warming means people will have to move. The question is how* by Erika Bolstad, E&E News reporter Published: Monday, March 27, 2017 at <http://www.eenews.net/climatewire/2017/03/27/stories/1060052112>

If state chooses self insurance to meet the PA deductible, it should get less credit than buying insurance for its PA deductible or buying reinsurance for some reasonable deductible.

Additional state actions that should be credited include:

- A robust statewide mapping program system that includes updated LiDAR data (with latitude-longitude footprints and/or 1st floor elevations for all structures), digitally accessible flood hazard data, models, maps, risk assessments and reports that are data driven and publically available for download and use. Each of these elements should get credit.
- Enhanced State Hazard Mitigation Plans (SHMP) that meet FEMA approval and are regularly updated and implemented in a robust way.
- State funding for hazard mitigation projects as identified in the SHMP.
- Dedicated state funding for emergency response and recovery activities and expenditures for non-Stafford Act response and recovery activities
- Adoption of state building codes that meet or exceed the latest versions of the International Code Council.
- State-specific guidance for integrating climate adaptation or disaster damage risk reduction into local planning
- Establishment of a Disaster Reserve Fund (or similar “rainy day” fund, that includes but is not limited to match funds for FEMA grant programs). However, such funds are vulnerable to diversion and may be more effectively used for the purchase of insurance or risk-pooling and re-insurance.
- Adoption and compliance with statewide hazard disclosure laws for realtors, lenders, etc.

We encourage FEMA to also consider whether and how to provide credit for robust, forward-looking state plans that help reduce disaster risks, such as the Louisiana 2017 Coastal Master Plan.²⁸ With stringent criteria in place, including requiring timely implementation, this could encourage states to take this type of very necessary, yet resource-intensive, step toward building resilience. Other options that FEMA could consider crediting include state measures to ensure high standards of expertise are brought to bear on actions that affect disaster risk—for example requiring that floodplain permits be issued by a Certified Floodplain Manager (CFM). FEMA could also consider credit for an accredited state agency under the Emergency Management Accreditation Program (EMAP) that includes credit for mitigation and long-term recovery.

²⁸ See <http://coastal.la.gov/2017-coastal-master-plan/>

We also agree with ISO, FEMA, architects, IIBHS²⁹, and many others that: *“Model building codes have most clearly addressed the hazards associated with wind, earthquake, and fire. Experts maintain that buildings constructed according to the requirements of model building codes suffer fewer losses from those perils. If municipalities adopt and rigorously enforce up-to-date codes, losses from other risks (including man-made perils) may also decrease.”*

We also fully support FEMA’s proposal: *“This model includes an escalating credit structure that provides moderate incentive to simply participate in ISO’s Building Code Effectiveness Grading Schedule (BCEGS®) program and increasing incentives as States reach higher levels of adoption and enforcement. ISO provides BCEGS® scores for both residential and commercial codes and enforcement, each on an improving scale from 10 to 1. In 2015, over 60 percent of States had BCEGS® scores of 4 or 5 in each category.”*

We also support FEMA’s model credit to States for tax-incentive programs that are designed to encourage preparedness and/or mitigation activities. *“For example, a State may offer an income tax credit for elevating homes or host a sales-tax holiday for personal preparedness supplies. FEMA would defer to the States to decide what types of programs would be most successful and appropriate given each State’s unique considerations and risks, however the program would still need to maintain a clear nexus with preparedness, mitigation, or resilience building.”*

In the context of the PA deductible, we do not support actions by sub-recipients qualifying to meet (or lower) the state deductible. We fully acknowledge that actions at the local level (such as the CRS program) are very valuable, and in fact critical, to help build resilience. However, since the PA deductible is being administered at the state level, we believe that actions that earn credit should also be ones that apply on a state-wide basis. States specifically are the target of the incentives to improve resilience in this context.

6. **We support the use of Insurance Coverage for Public Facilities, Assets, and Infrastructure as a way to encourage pre-disaster financial preparedness** through the deductible program. Qualifying insurance coverage should meet robust standards and must be purchased in a continuous way with no gaps in coverage. *“For purposes of the credit, the policies must provide guaranteed coverage for losses from natural hazards, fires, explosions, floods, or terrorist attacks. For a self-insurance fund or risk pool, FEMA would verify through the State Insurance Commissioner, or similar State official, that the fund or pool is actuarially sound and solvent.”*
7. **UCS does not support simply adjusting the per capita indicator or simply raising the cost share for states as a way to address concerns about rising disaster costs.**

²⁹ See IIBHS Current Building Codes at <https://disastersafety.org/ibhs-public-policy/building-codes/> and *Rating the States 2015* report <http://disastersafety.org/wp-content/uploads/2015/07/rating-the-states-2015-public.pdf>

These types of approaches would simply shift the burden of growing disaster costs from the federal government to state and local governments without creating any true incentive to reduce the risks of disasters. With state budgets already strapped in many cases, it is likely that even more funding would go to disaster aid rather than pre-disaster mitigation actions. It is likely that communities will be worse off under these circumstances.

Further, while adjusting the per capita indicator or increasing the cost share for states may seem to be saving federal taxpayers money, the reality is that it could increase the burden on taxpayers via other federal government programs. Research shows that in the wake of disasters communities often need to access other public assistance programs, such as unemployment assistance and healthcare benefits, in addition to disaster aid (Deryugina, 2016).³⁰ Shortfalls in preparedness or disaster aid funding could mean that there is even greater reliance on social safety net programs post-disaster.

8. **Harmonization with other efforts to improve disaster resilience.** We also recommend that this concept proposal be designed to work effectively together with other existing disaster resilience efforts underway, including the implementation of the Federal Flood Risk Management Standard, the requirement to include climate change in state hazard mitigation plans, the use of up-to-date flood risk maps³¹, incentives in the National Flood Insurance Program’s Community Rating System, and in concert with the overarching guidance for all Federal agencies to incorporate the value of natural, or “green,” infrastructure and ecosystem services into Federal planning and decision making. Criteria for hazard mitigation assistance provided under the PA program must also be coordinated with that of the Hazard Mitigation Assistance Program. One way to do this would be to tie the provisions for reducing the deductible to progress with meeting the goals of these complementary programs and standards. We also recommend that FEMA help ensure that the incentives created through the disaster deductible work in a coherent manner with the efforts of other agencies, such as the U.S. Department of Housing and Urban Development (HUD), the U.S. Army Corps of Engineers (USACE) and the U.S. Department of Agriculture (USDA), that also work in the arena of disaster aid and recovery and building resilience to future risks.³²
9. **Additional Stafford Act opportunities.** We recognize that the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act) is the underlying law that

³⁰ Deryugina, T. 2016. The Fiscal Cost of Hurricanes: Disaster Aid Versus Social Insurance. Online at <http://www.nber.org/papers/w22272>

³¹ Current FEMA flood risk maps do not yet include important risk factors such as the impacts of projected sea level rise. These maps should be updated expeditiously in line with the recommendations of the Technical Mapping Advisory Council. <http://www.fema.gov/technical-mapping-advisory-council>

³² See, for example efforts, from the USACE via the North Atlantic Comprehensive Study Report. Online at: <http://www.nad.usace.army.mil/CompStudy>. Also HUD’s work through the National Disaster Resilience Competition: <https://www.hudexchange.info/programs/cdbg-dr/resilient-recovery/>.

governs the PA program. FEMA has also recently published an updated program guide.³³ As such, we suggest that FEMA take a more proactive role in implementing sections of the Act that could work alongside the disaster deductible concept to improve our nation's resilience to disasters. Specifically:

- (i) Section 201 of the Act authorizes federal technical assistance and grant funding to aid states in preparing disaster preparedness and mitigation plans. FEMA should promote equitable access to this type of assistance.
- (ii) Section 203 lays out a number of criteria that states should use in applying for federal pre-disaster hazard mitigation funds. These include "the extent to which assistance will fund mitigation activities in small impoverished communities." Nevertheless, our research shows that these types of communities continue to face considerable disadvantages in accessing pre-disaster hazard mitigation funding, therefore FEMA should take proactive steps to remedy the situation.
- (iii) Section 406 of the Act authorizes funds for Public Assistance hazard mitigation. FEMA has sole discretion to decide which PA projects are eligible for 406 mitigation funds. We encourage the agency to view hazard mitigation (including nature-based infrastructure) as an essential and cost-effective component of post-disaster reconstruction.
- (iv) Section 428 lays out "Public Assistance Program Alternative Procedures" that FEMA could apply in the wake of major disasters, in coordination with states, tribal and local governments. We recommend that FEMA utilize this part of the statute more assertively to advance more resilient outcomes in the category of 'permanent work' (vs. emergency-type activities), particularly in cases where climate factors may contribute to disaster risk (e.g. worsening risk of flooding due to increased and more frequent heavy rainfall events and/or sea level rise and storm surge in Special Flood Hazard Areas or exacerbated flood impacts after wildfire events or major snow events) and where low income and otherwise vulnerable populations are exposed.

10. **Additional changes required through legislative action:** We also recognize that there are certain changes that are beyond the scope of what FEMA can do under current law, and recommend that legislative action be taken to address them. These include provisions to significantly increase the level of funding available for pre-disaster hazard mitigation programs in light of the growing risk of several types of disasters/extreme weather events due to climate change, funding for enhanced mapping of flood risks, and other types of investments in science-based information to guide better planning and decision making.

Thank you for the opportunity to provide comments on this SANPRM. We look forward to engaging in the stakeholder process as you continue the rulemaking process.

³³ http://www.fema.gov/media-library-data/1456167739485-75a028890345c6921d8d6ae473fbc8b3/PA_Program_and_Policy_Guide_2-21-2016_Fixes.pdf

Sincerely,

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