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Testimony by The Pew Charitable Trusts
Submitted to the House Transportation and Infrastructure Committee
for the Record of the Hearing on
The Cost of Doing Nothing: Why Investing in Our Nation's Infrastructure Cannot Wait

February 7, 2019

The Pew Charitable Trusts (Pew) appreciates the opportunity to submit testimony for the record of this hearing on America's infrastructure needs and the cost of doing nothing. Pew has been engaged for some time in highlighting the need for investment in our country's infrastructure. In particular, Pew has two initiatives of relevance to today's hearing: one to address the maintenance backlog in our national parks, and a second on flood-related issues promoting resilient infrastructure and investments in mitigation.

Pew applies a rigorous, analytical approach to improve public policy, inform the public, and invigorate civic life. We appreciate the opportunity to submit testimony in this first hearing of the House Transportation and Infrastructure Committee and look forward to working with the Committee as it explores these issues in the future.

NATIONAL PARK SYSTEM INFRASTRUCTURE BACKLOG

The National Park Service (NPS) manages more than 400 nationally significant sites in all 50 states and several territories, which encompass natural and historic sites that celebrate and commemorate the remarkable people, heritage, and ongoing story of America. The Restore America's Parks campaign at The Pew Charitable Trusts seeks to conserve the natural and cultural assets of the National Park System by providing common sense, long-term solutions to the infrastructure backlog challenge facing the park service.

NPS maintains 10,000 miles of roads (over 5,000 of which are paved); nearly 1,500 bridges and 60 tunnels; 18,000 miles of trails; more than 24,000 buildings; and over 2,000 sewage systems, as well as former military installations, parking lots, waterfronts, campgrounds, electrical and water systems, interpretive facilities, and iconic monuments and memorials. The NPS has estimated their backlog of infrastructure repair needs at $11.6 billion (based on FY2017 data).

There are multiple costs of doing nothing to address this backlog, including:

- The increased monetary cost of repairs as they are delayed and become more difficult and costly to fix.

- The economic cost to communities resulting from fewer visitors traveling to parks when public access is limited following closures of roads and trails due to maintenance issues.
- The unmeasurable costs to our nation's historic and cultural resources, if NPS lacks adequate funds to protect and maintain the sites and artifacts that document our collective heritage.
- The cost to park visitors who are denied access to the world class recreation, wildlife, and educational opportunities that our National Park Service is known for.

What Is Deferred Maintenance?

National parks often have the same infrastructure as a city or town, and as a result face the same deterioration and maintenance needs. In total, the agency is responsible for protecting and managing over 75,000 assets which include roads and bridges, trails, historic buildings, employee housing, wastewater and electrical systems, military fortifications, monuments and memorials, and seawalls. Maintenance is required at regular intervals to ensure acceptable park facility conditions; when this maintenance is delayed for more than a year, it is considered "deferred."

Why Is There a Deferred Maintenance Backlog?

- Aging infrastructure: many park facilities and systems are 50-70 years old and need updating.
- Record visitation causes wear and tear on resources: our parks received approximately 330 million visitors in 2017.
- Unreliable funding for deferred maintenance.
- A diverse portfolio that includes cultural, natural, and historical resources, many of them exposed to the elements.

The Path Forward

Preventing the escalation of the NPS maintenance backlog is not an insurmountable feat. But Congress and the Administration must pursue multiple approaches to ensure success. Focusing limited resources on priority assets must continue to be part of common sense solutions. To address the maintenance backlog at NPS sites across the country, Pew recommends a multi-pronged approach that includes:

- *Congressional Appropriations*. Reliable annual appropriations for transportation needs and NPS park maintenance are needed, as well as adequate staff capacity to implement projects.
- *Dedicated Annual Federal Funding*. The establishment of a dedicated federal fund that would direct resources each year to priority NPS repairs would help the agency begin to address the most pressing, complex repairs.
- *Infrastructure Package*. Any potential national infrastructure package should include deferred maintenance provisions specific to the parks, recognizing that national park buildings, roads, trails, aging electrical and water systems, and monuments need significant updating.
- *Policy Reforms*. Enacting innovative policy reforms to ensure that deferred maintenance does not escalate. Reforms should consider innovative technologies to drive maintenance costs down and save staff time, as well as opportunities to maximize revenue generation at parks.

Why We Must Address Infrastructure the Backlog of Repairs and Restore Our Parks

Restoring the infrastructure and physical integrity of our national park assets is a common-sense investment:

- *Preservation.* Our national park units document America's history. If our historic and cultural resources are not maintained, pieces of our nation's history will be lost to future generations.
- *Access.* Without safe and reliable roads and facilities, visitors cannot access and enjoy park resources.
- *Economics.* Parks are proven economic engines and must be maintained to ensure positive visitor experience and thriving local communities. Based on FY2017 records, over 330 million park visits translated to $18.2 billion in direct spending in gateway communities, generating approximately $35.8 billion in national economic output and 306,000 jobs.
- *Recreation.* World class recreation opportunities in parks are supported by trails, campgrounds, and water facilities. These amenities need to be safe and updated to ensure a continued high-quality, safe recreation experience.
- *Infrastructure-related jobs.* Fully investing in the park maintenance backlog has the potential to generate over 110,000 additional infrastructure-related jobs, based on a Pew-commissioned analysis: http://www.pewtrusts.org/en/research-and-analysis/blogs/compass-points/2017/12/01/job-creation-potential-if-we-restore-our-parks.
- *Cost-savings.* Proactively addressing park maintenance provide a cost-savings to taxpayers, as postponement of projects can lead to increased deterioration, and more costly and extensive repairs.

Almost 3,000 organizations across the nation recognize these benefits and support directing more resources to restoring our parks. These groups— counties and cities, local officials, businesses, veterans, the hotel and restaurant industry, conservation groups, unions, the recreation industry, infrastructure groups, state tourism societies—can be viewed here: http://www.pewtrusts.org/en/research-and-analysis/articles/2018/04/18/calls-mount-for-congress-to-fix-our-parks.

ENSURING FEDERAL INVESTMENTS IN INFRASTRUCTURE ARE FLOOD-READY

Flooding is the costliest[1] and most common natural disaster[2] in the United States, affecting every region. In addition to homes, these coastal and inland floods damage infrastructure vital to community preparedness and resilience such as roads, bridges, schools and hospitals, costing billions to repair and rebuild. Since 2000, such events have cost the federal government over $800 billion.[3]

Despite rising costs and risks, investments in resilient infrastructure and mitigation activities have historically been insufficient to a point where trillions of dollars in investments are needed just to

[1] National Oceanic and Atmospheric Administration, *Billion-Dollar Weather and Climate Disasters: Summary Stats*, National Centers for Environmental Information, (accessed February 5, 2019) *available at* https://www.ncdc.noaa.gov/billions/summary-stats (considering tropical cyclone to be flood-related disasters).
[2] Federal Emergency Management Agency, *OpenFEMA Dataset: Disaster Declarations Summaries -V1*, (accessed January 22, 2019), *available at* https://www.fema.gov/openfema-dataset-disaster-declarations-summaries-v1.
[3] National Oceanic and Atmospheric Administration, Billion-Dollar Weather and Climate Disasters: Table of Events, National Centers for Environmental Information, (accessed February 5, 2019) *available at* https://www.ncdc.noaa.gov/billions/events/US/1980-2018; Leslie Scism and Erin AIlworth, *Moody's Pegs Florence's Economic Cost at $38 Billion to $50 Billion* The Wall Street Journal (September 21, 2018), *available at https://www.wsj.com/articles/moodys-pegs-florences-economic-cost-at-38-billion-to-50-billion-1537572161*.

improve America's infrastructure to a state of "good" quality.[4] And making investments *before* disasters strike has been mostly ignored even when research shows every $1 invested in mitigation saves society at least $6.[5] Years of underinvesting have left much of America's infrastructure dangerously close to failing, according to a March 2017 report by the American Society of Civil Engineers.[6]

The challenge becomes how do we make much needed investments in infrastructure while ensuring those assets are not washed away by the next major flood? As Congress considers this conundrum, it is critical that stronger flood safeguards and future risks be incorporated into new infrastructure investments. In too many instances, federally-backed projects have been built or rebuilt without serious consideration of future losses, leading to repeat flooding losses and a costly cycle of damage and repair.

The vulnerability of the country's infrastructure to flooding is too great to continue ignoring:

- 930 military sites across 48 states have been impacted by floods over the past 30 years.[7]
- Since 2000, the federal government has provided tens of billions of dollars in assistance for public infrastructure, such as roads, bridges, and public buildings, in response to major flood disasters.[8]
- As of 2016, 18,000 federally owned buildings are in a 100-year floodplain with a total replacement cost of $83 billion.[9]

Without comprehensive policy action to reduce the impact of flood-disasters, the nation will continue to pay to rebuild infrastructure repeatedly after disasters and put assets in harm's way. We simply cannot afford to allow this pattern to continue.

The House Transportation and Infrastructure Committee should consider the following flood-ready solutions.

Update Flood-Ready Standards for Federally-Funded Projects

Building smart, durable infrastructure in the first place is a commonsense practice. Hundreds of localities and numerous states across the nation already have stronger infrastructure flood standards than the Federal government. We also know that it pays to prepare: according to recent analysis by the National

[4] American Society of Civil Engineers, *2017 Infrastructure Report Card*, https://www.infrastructurereportcard.org/.
[5] Laura Lightbody, *Every $1 Invested in Disaster Mitigation Saves $6*, Pew Charitable Trusts, (January 11, 2018) https://www.pewtrusts.org/en/research-and-analysis/articles/2018/01/11/every-$1-invested-in-disaster-mitigation-saves-$6.
[6] American Society of Civil Engineers, *2017 Infrastructure Report Card*, (accessed February 5, 2019) *available at* https://www.infrastructurereportcard.org/.
[7] Department of Defense, *Climate-Related Risk to DoD Infrastructure Initial Vulnerability Assessment Survey (SVLAS) Report)*, (January 2018) https://climateandsecurity.files.wordpress.com/2018/01/tab-b-slvas-report-1-24-2018.pdf.
[8] Federal Emergency Management Agency, *OpenFEMA Dataset: Public Assistance Funded Projects Details – V1*, accessed February 1, 2019, *available at* https://www.fema.gov/openfema-dataset-public-assistance-funded-projects-details-v1.
[9] Laura Lightbody, *3 Reasons the U.S. Needs a Flood-Ready Building Policy*, Pew Charitable Trusts (January 30, 2018) https://www.pewtrusts.org/en/research-and-analysis/articles/2018/01/30/3-reasons-the-us-needs-a-flood-ready-building-policy.

Institute of Building Sciences, flood mitigation projects on infrastructure like roads, rails, and wastewater treatment facilities produced positive benefit-cost ratios.[10]

Building resilient infrastructure enjoys a wide margin of support: A poll released in January 2018 by The Pew Charitable Trusts found that 89 percent of registered voters – across party lines – support requiring that all federally funded infrastructure in flood-prone areas be constructed to better withstand the impacts of flooding.[11] Incorporating future risk into flood safeguards across the federal government will limit damage, reduce the need to rebuild after floods and save taxpayer dollars.

Congress should ensure federal assets located in a floodplain take into consideration current and future flood risks.

Establish a Flood Mitigation State Revolving Loan Fund

As severe weather events have spiked in recent decades, it is clear the federal government must break the cycle of paying to rebuild properties in vulnerable areas that flood repeatedly. It can do so — with a $6-to-$1 return on investment[2] — by increasing support for state disaster preparedness efforts, starting with a new revolving loan fund program.

Current funding levels for mitigation are not sufficient to address the nation's pressing need to prepare for floods. Of the $277.6 billion that the federal government spent on disaster assistance from 2005 to 2014, very little went to mitigation. In fact, spending on Pre-Disaster Mitigation (PDM) grants fell from $157 million in 2005 to $19 million in 2014.[12]

Establishing a flood mitigation state revolving loan fund would enable more communities to take measures to reduce risk to structures and infrastructure, such as elevating buildings, putting vents in the lowest level of structures to reduce pressure on the walls and allow floodwater to pass through, and fund larger-scale projects such as improving stormwater management and building berms or flood walls.

State revolving loan funds have a successful track record:

- Many states and municipalities have experience with revolving loan funds. They have been used to support affordable housing, renewable energy, clean water, energy efficiency, and other community interests.
- The Clean Water State Revolving Fund program, for example, has financed improvements to wastewater infrastructure. From its inception in 1987 through 2016, the program has leveraged $41 billion in federal monies for $118 billion worth of clean water infrastructure.[13]

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[10]Multihazard Mitigation Council, *Natural Hazard Mitigation Saves: 2018 Interim Report*, National Institute of Building Science (December 2018).

[11] Laura Lightbody, *Poll Shows Nationwide Support for Feds to Boost Rebuilding Standards*, Pew Charitable Trusts (February 1, 2018) https://www.pewtrusts.org/en/research-and-analysis/articles/2018/02/01/poll-shows-nationwide-support-for-feds-to-boost-rebuilding-standards.

[12] Government Accountability Office, "Federal Disaster Assistance: Federal Departments and Agencies Obligated at Least $277.6 Billion During Fiscal Years 2005 through 2014" (Sept 2016), http://www.gao.gov/assets/680/679977.pdf.

[13] Environmental Protection Agency, 2017 Annual Report: Clean Water State Revolving Fund Programs (March 2018) https://nepis.epa.gov/Exe/ZyPDF.cgi/P100UAGH.PDF?Dockey=P100UAGH.PDF.

- Established in 1996, the Drinking Water State Revolving Loan Fund has used just over $19 billion in federal assistance to foster more than $32.5 billion in investments through 2016.[14]

Congress should establish and fund a revolving loan fund program for flood mitigation to improve infrastructure resilience.

Establish a Federal-Aid Highway Pre-Disaster Infrastructure Program

Federal-aid highways and roads are the lifeblood of the nation's economy. While accounting for only 25 percent of the nation's highway network, they shoulder 85 percent of total miles travelled each year.[15] Their reliability is not only key for the everyday mobility of Americans and transporting goods from coast to coast, but critical to community vitality during natural disasters. The Federal Highway Administration Emergency Relief (ER) program provides states and localities with access to funding to support disaster recovery efforts, but the reactive approach of the program does not do enough to ensure communities are prepared the next time it floods.

Growing risk to and impacts from flooding to our federal-aid highways are unsustainable:

- More than 60,000 miles of U.S. roads and bridges are in coastal floodplains, threatening supply chains and local economies.[16]
- In 2018, flooding from Hurricane Florence forced the closure of more than 1,200 roads in North Carolina, cutting off the access of numerous communities to emergency responders and critical facilities, like hospitals and shelters.[17]
- Since 2000, flooding and other extreme events have resulted in the FHWA ER program receiving nearly $15 billion in supplemental appropriations. Without investments toward making our transportation infrastructure more resilient to increasingly stronger storms, the FHWA ER program will continue to be overburdened.[18]

Congress should establish a Federal Highway Administration Pre-Disaster Infrastructure program for projects that address federal-aid roads, highways, and bridges.

Prioritize natural areas that benefit communities

Healthy wetlands, salt marshes, dunes, and free-flowing rivers can act as holding basins for floodwaters, decreasing the effects of flooding on people, homes, and businesses in adjacent communities while

[14] Environmental Protection Agency, *20th* Anniversary Drinking Water State Revolving Fund (2017) https://www.epa.gov/sites/production/files/2018-08/documents/20th_anniversary_dwsrf_report_final_508.pdf.
[15] Federal Highway Administration, 2013 Status of the Nation's Highways, Bridges, and Transit: Conditions and Performance https://www.fhwa.dot.gov/policy/2013cpr/es.cfm.
[16] USGCRP, 2018: *Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II* [Reidmiller, D.R., C.W. Avery, D.R. Easterling, K.E. Kunkel, K.L.M. Lewis, T.K. Maycock, and B.C. Stewart (eds.)]. U.S. Global Change Research Program, Washington, DC, USA, 1515 pp. doi: 10.7930/NCA4.2018.
[17] North Carolina Department of Public Safety, *It Takes a Village: Emergency Management Leads Response and Recovery to Hurricane Florence* (Oct. 12, 2018) https://www.ncdps.gov/blog/2018/10/12/it-takes-village-emergency-management-leads-response-and-recovery-hurricane-florence.
[18] Congressional Research Service, *Emergency Relief for Disaster-Damaged Roads and Public Transportation Systems* (August 2018) https://fas.org/sgp/crs/homesec/R45298.pdf.

providing habitat for fish and wildlife. Along the coasts, such natural areas act as the first line of defense to reduce the effects of storm surge.

The use of nature-based solutions—either as alternatives or complements to grey infrastructure—can help achieve resilience to extreme weather while supporting other objectives (i.e., ecosystem restoration, recreational space, etc.). In managing risk to threats like flooding, nature-based solutions can be more effective compared to conventional approaches. Nature-based approaches are, in some cases, more adaptable, easier to scale up, and can become stronger and offer more resilience over time, compared to grey infrastructure, while grey infrastructure tends to become less resilient as it ages.

Research has shown that using nature-based solutions to mitigate the threats posed by severe weather can be both economical and long-lasting:

- Coastal ecosystems mitigate an estimated $23 billion each year in storm damages along the Atlantic and Southern coastlines alone.[19]
- According to the Gund Institute for Environment, wetlands and floodplains protected Middlebury, Vermont from as much as $1.8 million in flood damages during Tropical Storm Irene in 2011 and saved the town an average of $450,000 each year through flood mitigation.[20]
- Resources for the Future found that by not developing roughly 9,000 acres of land but instead preserving the area as state and local parks, the Meramec Greenway in St. Louis County, Missouri, benefits from $7.7 million in avoided flood damages on average each year.[21]

Congress should require the consideration of nature-based solutions as alternatives for grey infrastructure projects that involve investing federal dollars in floodplains.

In summary, The Pew Charitable Trusts thanks the committee for the opportunity to submit this testimony and looks forward to working with the committee on the important task of developing an infrastructure package that addresses the critical issues facing our nation's parks and communities at risk.

[19] Karen Thorne, et al., *U.S. Pacific Coastal Wetland Resilience and Vulnerability to Sea-Level Rise*, Science Advances, Vol 4, no 2 (Feb 2018) http://advances.sciencemag.org/content/4/2/eaao3270.full.
[20] Keri B. Watson, et al., *Quantifying Flood Mitigation Services: The Economic Value of Otter Creek Wetlands and Floodplains to Middlebury, VT*, Ecological Economics Vol 130 (October 2016) https://www.sciencedirect.com/science/article/pii/S092180091630595X.
[21] Carolyn Kousky and Margaret Walls, *Floodplain Conservation as a Flood Mitigation Strategy* Resources for the Future (July 2013) http://www.rff.org/files/sharepoint/WorkImages/Download/RFF-DP-13-22-REV.pdf.