



FEMA

January 6, 2025

MEMORANDUM FOR: FEMA Regional Administrators
Regions I – X

ATTENTION: Regional Administrators
Regional Recovery Division Directors

FROM: William C. Hagmaier
Assistant Administrator
Recovery Directorate

SUBJECT: Expansion of Cost-Effective Hazard Mitigation Measures and
Applicability to Current Disasters

In this environment of increased peril and disaster activity, it is critical that we support communities in building resilience to future risk while they recover from past disasters. Recovery is committed to providing you with the tools and resources necessary to support these communities as you work side-by-side with them. It is this commitment that beget [*Resilient Recovery: A National Strategy for Maximizing Mitigation.*](#)

Today, we released Version 5.0 of the Public Assistance Program and Policy Guide (PAPPG); effective for Stafford Act major disasters declared on or after this date. One of the most important improvements in Version 5.0 is a significant expansion of Appendix J. Appendix J is a primary tool in our strategy for *making recovery more resilient* by providing a list of common hazard mitigation measures that FEMA has found to be cost-effective if the measures do not exceed 100 percent of the eligible repair cost of the project (prior to any insurance deductions). Appendix J increases the accessibility of mitigation for Public Assistance applicants by avoiding the need to complete a separate benefit-cost analysis (BCA) to establish cost effectiveness for common measures.

New and expanded mitigation measures found in Appendix J include:

- **Flood Barriers.*** Elevate, wet floodproof, or dry floodproof buildings. *Dry floodproofing may include installing flood barriers. Wet or dry floodproofing may include nature-based solutions such as rain gardens, bioswales, constructed or restored wetlands that reduce flood risk. Nature-based solutions used alone however do not provide wet or dry floodproofing.*
- **Upgrade Roofing Materials.*** For low slope roofs, replace *and upgrade* materials for entire roof covering with a fully adhered roof covering, such as a modified bitumen membrane roof. Note that FEMA does not provide Public Assistance mitigation funding for loose laid insulation or membranes as punctures can cause large amounts of water intrusion. Additionally, FEMA does not provide Public Assistance mitigation funding for loose laid

*Denotes existing Appendix J mitigation measure that has been expanded for PAPPG Version 5 based on language in italics.

roof membranes with loose ballast stones as the stones can become projectiles in high winds and cause damage. For gable roofs, replace *and upgrade* materials for the gable-end framing with hipped roof framing to reduce wind forces (lower edge pressure; reduced projected wind area) and strengthen the roof framing.

- **Defensible Space.** For buildings and structures outside of the wildland-urban interface (where FEMA building code policy already requires these mitigation measures), create defensible space around facilities or structures with wildfire risk by removing or reducing the volume of flammable vegetation. The volume of vegetation should be minimized (e.g., hardscaping) by thinning or replacing flammable vegetation with less flammable, non-invasive species. Less flammable vegetation includes high-moisture plants, trees with low sap or resin content, plants with thick leaves, and drought tolerant vegetation. Native species are preferable as non-native options are less likely to withstand weather conditions, creating a fire risk.
- **Non-Combustible Construction Materials.** For buildings and structures outside of the wildland-urban interface (where FEMA building code policy already requires these mitigation measures), non-combustible construction materials: Replace and upgrade construction materials with non-combustible alternatives for facilities with wildfire risk.
- **Permeable Pavement.** Replace impervious paved surfaces with permeable pavement alternatives. Alternatives include permeable concrete, porous asphalt, permeable interlocking pavers, plastic grid pavers, or other systems that enable water infiltration while maintaining structural integrity. Permeable pavement projects should include aggregate and geotextile fabric layers to meet project-specific requirements such as desired storage capacity, pavement strength, or subgrade composition.¹
- **Safe Rooms.** Construct new or install pre-fabricated tornado or hurricane safe room. Safe rooms must be part of the footprint of the facility that is being repaired due to damage caused by the declared incident. Safe Rooms should provide life safety protection and be designed to meet the design and construction criteria in *Safe Rooms for Tornadoes and Hurricanes* (FEMA P-361).²

All mitigation measures are subject to general Public Assistance eligibility requirements, as well as standard hazard mitigation eligibility requirements, including being technically feasible and directly reducing the potential of future damage to the damaged portion(s) of the facility.

Although PAPPG Version 5.0 applies prospectively to major disasters declared on or after this date, to ensure FEMA is taking all actions within our abilities and authorities to support communities in reducing their future disaster risk, **I am authorizing the use of the expanded Appendix J in PAPPG Version 5.0 for:**

- **all unobligated projects under any open major disaster regardless of the date of declaration, and**

¹ For more information, refer to: [Stormwater Best Management Practice, Permeable Pavements | epa.gov](#).

² For more information, refer to: [Safe Rooms for Tornadoes and Hurricanes \(FEMA P-361\)](#).

- **all obligated projects under any open major disaster regardless of the date of declaration if the project does not yet have an approved hazard mitigation proposal as of the date of this memorandum.**

For all projects in the above categories, I am also waiving the restriction found in the PAPPG prior to Version 4.0 that limited hazard mitigation proposals to the incident type associated with the major disaster declaration. **For the above categories of projects, any hazard mitigation proposal, whether it is a mitigation activity covered by Appendix J or its own cost-benefit analysis, may be included regardless of the type of hazard it is mitigating.**

Please share this important information with our State, Tribal, Territorial, and local partners, along with any other interested party who can help us continue to build resilience through the Public Assistance Program. Thank you for your ongoing commitment to *resilient recovery*.

If you have questions about the updates to Appendix J, please contact Robert M. Pesapane, Director, Public Assistance Division, at robert.pesapane@fema.dhs.gov.

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