



FEMA

# Public Assistance Guidance on Inundated and Submerged Roads

## FEMA Policy FP 104-009-13

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### BACKGROUND

Section 1228 of the Disaster Recovery Reform Act (DRRA) of 2018<sup>1</sup> directs the Federal Emergency Management Agency (FEMA), in coordination with the Federal Highway Administration (FHWA), to develop guidance regarding federal assistance through the FEMA Public Assistance (PA) grant program for the restoration of inundated and submerged roads damaged or destroyed by a declared major disaster. Section 1228 of the DRRA is provided below:

*The Administrator of the Federal Emergency Management Agency, in coordination with the Administrator of the Federal Highway Administration, shall develop and issue guidance for State, local, and Indian tribal governments regarding repair, restoration, and replacement of inundated and submerged roads damaged or destroyed by a major disaster, and for associated expenses incurred by the Government, with respect to roads eligible for assistance under section 406 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. § 5172).*

FEMA developed this policy in coordination with FHWA. The policy is consistent with the Robert T. Stafford Disaster Relief and Emergency Act<sup>2</sup> (Stafford Act); FHWA's Emergency Relief Program under 23 U.S.C. 125; Part 668 of Title 23 of the Code of Federal Regulations; and the FHWA Emergency Relief Manual.<sup>3</sup>

### PURPOSE

The purpose of this policy is to clarify the eligibility of funding for public roads inundated by flood waters directly related to a major disaster declared under the Stafford Act. This policy is in effect for all major disasters declared on or after January 1, 2016.<sup>4</sup> More information on the eligibility of roads as part of the PA program is available in the Public Assistance Program and Policy Guide (PAPPG).<sup>5</sup>

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<sup>1</sup> Div. D of P.L. 115-254.

<sup>2</sup> P.L. 93-288, as amended, 42 U.S.C. § 5121 *et seq.*

<sup>3</sup> [www.fhwa.dot.gov/reports/erm/er.pdf](http://www.fhwa.dot.gov/reports/erm/er.pdf).

<sup>4</sup> Except for amendments to the Stafford Act, DRRA provisions are retroactive to major disasters and emergencies declared on or after January 1, 2016 per § 1202(b). Note that only new claims of damage and projects still in formulation are impacted by this policy. Projects that are closed or have already been obligated are not subject to this policy.

<sup>5</sup> The current version of the PAPPG (V4) is available at [www.fema.gov/media-library/assets/documents/111781](http://www.fema.gov/media-library/assets/documents/111781).



## PRINCIPLES

- A. Provide clear guidance on the eligibility of funding for roads for which disaster damage is claimed due to flood water inundation as a direct result of a federally declared major disaster.
- B. Provide additional guidance for reporting road flood water inundation damage and outline the required documentation to support claimed damage.

## REQUIREMENTS

### A. APPLICABILITY

Outcome: To establish the parameters of this policy and ensure it is implemented consistent with program authorities.

#### 1. Recipients and Subrecipients.

This guidance is applicable to Recipients and Subrecipients that are legally responsible for the maintenance and restoration of public roads damaged due to flood water inundation by a federally declared major disaster.

#### 2. Public Roads.

This guidance is only applicable to public roads as defined in the **Definitions** section at the end of this policy. Private roads, including homeowners association roads, are not eligible.<sup>6</sup> Some private non-profit Applicants may have eligible roads and sidewalks, such as on a school campus; in those cases, their roads are subject to this policy.

### B. GENERAL WORK ELIGIBILITY

Outcome: To define the overarching framework for eligible work related to inundated and submerged roads. All other PA eligibility requirements apply.<sup>7</sup>

#### 1. Roads with Visible Damage.

Work to repair roads that have experienced surface damage, including flood water inundation damage identified once flood waters have receded, that is visible and quantifiable during inspection and directly attributed to the declared major disaster event is eligible for PA funding.

Examples of major visible and quantifiable surface damage caused by the declared major disaster event includes, but is not limited to, washouts, collapses, and slips. Minor surface damage to roads caused by the declared major disaster event is often similar to damage that may occur over time from other causes, such as the age of the road, traffic volume, and frequent rain. Distinguishing between pre-existing damage and minor damage caused by the declared major disaster event is covered in **Section D.2. Maintenance Records Requirement** of this policy. Distress evident on the surface, such as potholes or fatigue

<sup>6</sup> See *Chapter 8:IX.A. Roads and Bridges (Category C)* of the PAPPG (V4).

<sup>7</sup> See Title 44 of the Code of Federal Regulations (44 C.F.R.) Part 206, Subpart H; and PAPPG (V4).



cracking is generally ineligible for repair as this type of damage is rarely caused directly by one incident.<sup>8</sup>

Restoration of sections of road with disaster-related surface damage will follow PA guidance for work performed under Category C: Roads and Bridges.<sup>9</sup>

## 2. Roads without Visible Damage.

### a. Submerged Roads without Visible Surface Damage.

Restoration work for roads that have experienced inundation by flood waters as a direct result of a major disaster event where surface damage is not visible and quantifiable during an inspection of the claimed section(s) of road after the flood waters have receded is not eligible for PA Program funding. Claims of subsurface damage based on the findings of an inspection<sup>10</sup> for sections of road without visible and quantifiable surface damage will not be considered eligible for assistance from the PA Program. Accordingly, costs associated with methods of inspection on sections of road without visible and quantifiable surface damage are not eligible for PA reimbursement.

### b. Projected Loss of Useful Service Life.

Restoration work based on a projected loss of useful service life (i.e., the potential reduction in the road's remaining service life) is ineligible because it is not damage caused by the major disaster event and service life is part of the design of roadways. Loss of useful service life is based on aging and use of the roadway.<sup>11</sup> For example, if an Applicant is claiming subsurface deterioration of a section of road that has experienced inundation based on the findings of an inspection, this alone does not constitute disaster-related damage eligible for PA funding since such deterioration is not caused by a single incident but is the result of the use of the road and normal weather conditions over time.

## 3. Traffic-Induced Surface Damage Resulting from Reopening Road Prematurely.

To help avoid damage to roads that have been inundated, Applicants should allow time for saturated soil to dry out prior to reopening roads to normal traffic to prevent surface damage caused by reopening roads prematurely. Such damage is traffic-induced, not disaster-related, and should be expected on a saturated roadbed. In addition to not being a result of the declared disaster, surface damage from reopening roads to normal traffic prematurely may constitute negligence and, therefore, may not be eligible for repair assistance from PA.<sup>12</sup> Exceptions include surface damage caused by emergency vehicles performing eligible debris removal or other emergency work under PA necessary as a result of the declared event,<sup>13</sup> or single-access roads that the Applicant determined were

<sup>8</sup> See *Chapter 8:IX.A. Roads and Bridges (Category C)* of the PAPPG (V4).

<sup>9</sup> *Id.*

<sup>10</sup> Including destructive and non-destructive methods of inspection such as Ground-Penetrating Radar, Core Sampling, Soil Boring, and Falling Weight Deflectometers.

<sup>11</sup> See *Chapter 6:XXI.B. Loss of Useful Service Life* of the PAPPG (V4).

<sup>12</sup> See 44 C.F.R. §§206.223(a)(1) and (e).

<sup>13</sup> See *Chapter 7:III. Damage Caused During Performance of Emergency Work* of the PAPPG (V4).



required to be reopened for emergency response purposes due to lack of detour/alternate routes. In such cases, the Applicant must provide documentation to justify reopening the road prematurely as described in **Section E. Documentation to Support Claimed Damage** of this policy.

#### 4. Closed Basin Flooding.<sup>14</sup>

Closed basin flooding can result in roads that remain submerged indefinitely as water is not able to drain from closed basin areas. In such cases, it may not be feasible to wait until flood waters recede to safely and effectively assess potential damage and provide any time extensions. PA funding may be used to raise the grades of eligible sections of road faced with long-term loss of use due to an unprecedented rise in closed basin water level when closed basin flooding is directly attributed to the declared major disaster event.

Permanent work, including grade raises, related to closed basin flooding is only eligible if the Applicant can demonstrate all of the following:

- The submerged section of road is in a closed basin flooding area;
- The closed basin flooding is directly attributed to the declared major disaster event rather than the culmination of multiple meteorological events that have caused excessive run-off into the closed basin area over an extended period of time; and
- The closed basin flooding results in long-term loss of use of critical routes.

PA funding will generally be limited to grade raises of highways and bridges of critical routes projected to experience long-term loss of use due to closed basin flooding, as demonstrated by the Applicant. Only those routes that are critical to restoring traffic service are eligible for grade raises. Factors to evaluate whether individual routes are critical include functional classification; provision of essential community services, such as access for emergency response, schools, and mail/delivery vehicles; and availability of alternate routes and/or detours. FEMA, in coordination with the Recipient and Applicant, will determine if the claimed roadway is a critical route and eligible for grade raises based on the Applicant's request for grade raises of impacted sections of roads in closed basin flooding areas. It is not the intent of the PA program to raise the grades in dips or other low spots along roadways that suffer inundation from chronic flooding problems.

If requested by the Applicant, FEMA will also consider permanent reroutes to move roadways outside of closed basin flooding areas instead of grade raises if the Applicant can demonstrate that a permanent reroute is more cost effective than grade raises. Reroutes are subject to relocation requirements at 44 C.F.R. § 206.226(g) as well as environmental and historic preservation (EHP) review and approval to ensure the reroute does not have adverse EHP impacts.

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<sup>14</sup> See also *Chapter II:B.6.b. Basin Flooding* of the FHWA Emergency Relief Manual.



## 5. Gravel Roads.

Additional considerations specific to submerged gravel roads are as follows:

- a. Gravel surface loss from inundation is not assumed and cannot be based on projected or estimated loss. The Applicant must be able to demonstrate actual gravel surface loss. If the Applicant chooses to lay gravel on a longer section of the road, FEMA only pays for the portion of the road that was disaster damaged. Gravel laid on non-disaster damaged sections of the road are not eligible.
- b. Rutting of submerged sections of gravel roads that have been prematurely reopened to normal traffic flow is typically not eligible. Rutting is traffic-induced damage and is to be expected on a saturated roadbed. Exceptions include rutting caused by emergency vehicles performing eligible debris removal or other emergency work or single-access roads that were required to be reopened due to lack of detour/alternate routes. In such cases, the Applicant must provide documentation to justify reopening the road prematurely as described in **Section E. Documentation to Support Claimed Damage** of this policy.
- c. Corrugation of gravel roads is not eligible for repair or restoration. Corrugation (or “washboarding”) is associated with traffic in dry conditions and not attributable to inundation.

## C. TIMEFRAMES FOR REPORTING DAMAGE

Outcome: This section provides timelines for reporting damage associated with sections of road inundated by flood waters as a direct result of the declared event.

### 1. Deadline for Reporting Disaster-Related Damage.

Road surface damage resulting from inundation as a direct result of a major disaster must be identified and reported to FEMA within 60 days of the Recovery Scoping Meeting (RSM).<sup>15</sup> The deadline for reporting disaster damage is applicable to all major disasters, including those declared prior to the publication of this policy. Inundated and submerged roads should not be assessed until flood waters have receded to ensure the safety of damage assessment staff and to allow time for saturated soil to dry out. Allowing adequate time for saturated soil to dry out is necessary to effectively determine if eligible surface damage has occurred.

### 2. Road Inundation Beyond the Deadline for Reporting Disaster-Related Damage.

In some cases, roads may remain submerged beyond the deadline for reporting disaster-related damage. In such cases, FEMA may extend the deadline for identifying and reporting damage if the Recipient submits a request in writing with justification for the extension based on extenuating circumstances beyond the Recipient’s or Subrecipient’s control.<sup>16</sup> For example, if a site is inaccessible, as in the case of submerged roads, FEMA may extend the deadline for those sections of road until such time as the sites can safely be accessed for inspection.

<sup>15</sup> See 44 C.F.R. § 206.202(d)(ii) and *Chapter 5:1. List of Impacts of the PAPPG (V4)*.

<sup>16</sup> See 44 C.F.R. § 206.202(f)(2) and *Chapter 5:1. List of Impacts of the PAPPG (V4)*.



Roadways that experience inundation from closed basin flooding may be submerged indefinitely as water is not able to drain from closed basin areas. In such cases, impacted sections of road may be eligible for grade raises or permanent reroutes, if more cost effective, to address the prolonged inundation and loss of use as described in **Section B.4. Closed Basin Flooding** of this policy.

## D. DEMONSTRATING DISASTER-RELATED DAMAGE

Outcome: Applicants must demonstrate that surface damage to roadways was caused directly by the declared event.

### 1. Surface Damage as a Direct Result of Disaster-Related Flood Water Inundation.

Visible surface damage to roads caused by flood water inundation may become apparent once flood waters have receded. For example, voids may result from soil erosion, which can cause a collapse or slip along sections of submerged roads. Therefore, it is important to assess submerged roads *after* flood waters have receded to determine if the inundation from the declared event resulted in visible and quantifiable surface damage.

The Applicant must substantiate claimed surface damage with supporting documentation consistent with **Section E. Documentation to Support Claimed Damage** of this policy. FEMA will not accept a damage report simply based on a claim that a section of road has experienced inundation or based on documentation that indicates inundation has occurred without demonstrating any resulting surface damage. Similarly, there should be no presumption of eligible disaster-related damage to an inundated or submerged road for inclusion of the estimated repair costs in a joint preliminary damage assessment.

### 2. Maintenance Records Requirement.

When evaluating eligibility of reported road damage, including how the incident caused the damage, FEMA reviews maintenance records or other documentation establishing that the Applicant has a routine maintenance program. In the absence of maintenance records, FEMA will review whatever documentation is available to assist in making an informed decision on the condition of the road at the time the disaster occurred.

FEMA does not provide PA funding for repair of damage caused by deterioration, deferred maintenance, the Applicant's failure to take measures to protect a facility from further damage, or negligence.<sup>17</sup> Normal maintenance, such as work to repair potholes or fatigue cracking, is generally ineligible as this type of damage is rarely caused directly by one incident.<sup>18</sup>

## E. DOCUMENTATION TO SUPPORT CLAIMED DAMAGE

Outcome: This section describes what documentation is needed to support claimed surface damage to roads due to inundation by flood waters as a direct result of the declared event.

<sup>17</sup> See 44 C.F.R. §§ 206.223(a)(1) and (e); *Chapter 4:I.B.1. Result of Declared Incident of the PAPPG (V4)*.

<sup>18</sup> See *Chapter 8:IX.A. Roads and Bridges (Category C) of the PAPPG (V4)*.



## **1. Minimum Documentation to Support Claimed Damage.**

- a. Pre-event (if available) and post-event photos or videos of impacted sections of road, or other documentation to indicate pre- and post-event surface condition;
- b. Maintenance records including, if applicable, documentation of a pavement evaluation program or pavement management system (e.g., a regular documented pavement inspection using standards found in Distress Identification Manual for the Long-Term Pavement Performance Program (June 2003, FHWA-RD-03-031)); and
- c. Documentation of any repairs following pre-disaster assessments, specific to each section of road claimed and/or documentation of any post-disaster repair work already completed, specific to each section of road claimed.

## **2. Traffic-Induced Surface Damage Resulting from Reopening Road Prematurely.**

- a. An explanation/justification for reopening the road prior to allowing saturated soil to dry (e.g., emergency response, the performance of eligible PA emergency work, emergency access, etc.).
- b. For emergency response traffic, documentation of emergency call logs and a map showing the route taken by the emergency vehicle(s).
- c. If claiming surface damage from normal traffic loads due to reopening a single-access road immediately following the declared event or once flood waters have receded, documentation to support that no detour or alternate route was available and the road was required to reopen for emergency access.

## **3. Closed Basin Flooding.**

- a. Information to support the closed basin flooding was directly attributed to the declared major disaster event and the long-term loss of use of critical routes.
- b. For closed basin flooding as a direct result of the declared major disaster event: Information showing that the water elevation in the closed basin has reached historically high levels; that the rise in the water level occurred during the designated incident period; historic water level elevation and rainfall intensity records; and/or maintenance reports or other information that provides some historical perspective on events and water levels within the closed basin.
- c. For long-term loss of use of critical routes: Information demonstrating the length of time the roadway has been closed to traffic and is projected to remain closed to traffic based on the basin water level elevations that occurred as a direct result of the declared major disaster event.

## **4. Gravel Roads – Gravel Loss.**

- a. Documentation indicating gravel loss directly attributed to the declared event (e.g., work logs and material invoices quantifying the amount of aggregate gravel placed in the damaged section within 12 months of the start of the incident period).
- b. Photographs or video of the field of displaced gravel.



**5. Gravel Roads – Rutting.**

- a. For emergency response traffic, documentation of emergency call logs and a map showing the route taken by the emergency vehicle(s).
- b. If claiming rutting from normal traffic loads due to reopening a single-access road immediately following the declared event or once flood waters have receded, documentation, such as a work log indicating that the rutted section of road was graded and surface aggregate applied prior to the event.

**RESPONSIBLE OFFICE**

Office of Response and Recovery  
Recovery Directorate  
Public Assistance Division

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April 8, 2021  
Date



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## ADDITIONAL INFORMATION

### REVIEW CYCLE

This policy will be reviewed no later than four years from the date of publication, or earlier if needed, and may be incorporated into future versions of the PAPPG, at which point this policy will be superseded and archived.

### AUTHORITIES and REFERENCES

#### Authorities

- Robert T. Stafford Disaster Relief and Emergency Assistance Act, 42 U.S.C. 5121-5207, as amended
- Title 44 of the Code of Federal Regulations, Part 206, Subpart H

Note: Policies do not have the force and effect of law, except as authorized by law or as incorporated into a contract.

#### References

- Public Assistance Program and Policy Guide, Version 4 (emergencies and major disasters declared prior to June 1, 2020 are subject to the version of the PAPPG applicable to the date of declaration)

### DEFINITIONS

To establish consistent terminology for purposes of implementing this policy, the following definitions are provided below. These definitions are specific to this policy and may differ from definitions prescribed for the same or similar terms in other policies.

A **Public Road** is any publicly owned non-federal aid street, road, or highway for which an eligible Applicant has legal responsibility. Federal-aid routes are not eligible for Stafford Act permanent work under the PA Program. Bureau of Indian Affairs (BIA) roads may be eligible provided the tribal government does not receive funding from BIA or FHWA for the same work.

A **Federal-Aid Route** includes highways on the federal-aid highway program and all other public roads under the authority of FHWA not classified as local roads or rural minor collectors.

**Disaster Damage** means damage directly caused by a major disaster declared by the President under the Stafford Act within a designated disaster area.

**Projected Loss of Useful Service Life** means the claimed reduction of the remaining service life of a facility due to impacts caused by a major disaster declared under the Stafford Act. Claims for projected loss of useful service life typically involve non-visible disaster damage claims.



**Submerged or Inundated Road** means a section of road that is covered by flood waters for any period of time. For purposes of this policy, the inundation must have occurred as a direct result of a federally declared major disaster.

A **Void** is an area under concrete or other paved surface, within the subsurface, caused by eroded ground support created by soil erosion over time. Voids may contribute to visible and quantifiable surface damages that may or may not be disaster related.

A **Collapse** can occur on a section of road that experiences a void due to soil erosion, making the collapsed section of road incapable of supporting traffic and requiring repair or replacement of the collapsed section(s).

A **Slip** occurs when soil erosion causes part of or all of a section of road to collapse and slide downhill when located in elevated areas.

A **Basin** is a large depression in the land with no natural drainage outlet such that the water level decreases only due to infiltration or evaporation.

**Rutting** of a roadway is a depression or groove worn into the surface of the road due to heavy traffic loads or wear over time. For gravel roads, rutting is generally removed by re-grading the road surface.

**Corrugation** or “**Washboarding**,” comprises a series of ripples which occur with the passage of wheels rolling over unpaved roads at speeds sufficient to cause bouncing of the wheel on the initially unrippled surface.

## MONITORING AND EVALUATION

FEMA will closely monitor the implementation of this policy through close coordination with regional and field staff, as appropriate, as well as FHWA and SLTT stakeholders.

## QUESTIONS

Direct questions to the Office of Response and Recovery, Recovery Directorate, Public Assistance Division at [FEMA-Recovery-PA-Policy@fema.dhs.gov](mailto:FEMA-Recovery-PA-Policy@fema.dhs.gov).