UNITED STATES
CIVILIAN BOARD OF CONTRACT APPEALS

March 18, 2020

CBCA 6651-FEMA

In the Matter of BOSSIER PARISH POLICE JURY

John B. Dunlap III, Jennifer A. Fiore, Hunter R. Bertrand, and Erin G. Fonacier of Dunlap Fiore, LLC, Baton Rouge, LA, counsel for Applicant.

Lynne Browning, Assistant Deputy Director, and Jaron Herd, Appeals Manager, Governor's Office of Homeland Security and Emergency Preparedness, Baton Rouge, LA, appearing for Grantee.

Charles Schexnaildre and John Dimos, Office of Chief Counsel, Federal Emergency Management Agency, Department of Homeland Security, Baton Rouge, LA; and Ramoncito J. deBorja, Office of Chief Counsel, Federal Emergency Management Agency, Department of Homeland Security, Washington, DC, counsel for Federal Emergency Management Agency.

Before the Arbitration Panel consisting of Board Judges **SOMERS** (Chair), **SULLIVAN**, and **RUSSELL**.

Applicant, Bossier Parish Police Jury (Parish), seeks arbitration over the Federal Emergency Management Agency's (FEMA's) denial of the Parish's request for public assistance (PA) funding in the amount of approximately $25 million for the repair of forty-seven roads which Bossier Parish argued were damaged by flooding in March 2016. FEMA denied the Parish's request, concluding that the Parish failed to show that the claimed damage was caused by the disaster. FEMA additionally determined that the Parish's claim was essentially one for loss of useful life of its roads, which is ineligible for funding.

The panel decides this matter pursuant to the authority set forth in 42 U.S.C. § 5189a(d). The panel conducted the arbitration in accordance with Board Rule 611 (48 CFR

6106.611 (2019)). The issue before the panel is whether the March 2016 flood event caused damage to the Parish roads. For the foregoing reasons, we conclude that the flood did cause damage to the roads.

Background

I. The Parish's Request for Public Assistance

During March 2016, severe storms struck, resulting in significant rainfall and flooding in certain parts of Louisiana. On March 13, 2016, the President issued a major disaster declaration for thirty-six parishes in Louisiana which FEMA docketed as FEMA-4263-DR. The disaster declaration included Bossier Parish. Rainfall amounts of over thirty inches were recorded in the Parish during a five-day period and, in some areas, certain Parish roads were under water for as long as fourteen days.

The Parish submitted a request for PA funding to FEMA for approximately $25 million to repair and restore damaged roads to their pre-storm condition. The Parish was not seeking PA for any surface pavement damage to these roads. Instead, the Parish sought assistance to repair damage to the base layer beneath the roads. The Parish asserted that the base material of the roads was softened by the flood waters to the point that the roadways were no longer being supported.

The Parish categorized the roads for which it seeks PA funding into two different phases. Phase I includes four heavily-traveled roads constructed with cement-treated bases. The estimated cost to repair these roads is $13,766,548. Phase II includes forty-three, mostly secondary roads consisting of soil, aggregate, or cement-treated bases. The estimated cost to repair these roads is $10,710,788.

For expert analysis, the Parish retained APTIM Environmental and Infrastructure, LLC ("APTIM") in or around June 2016. APTIM, as part of its efforts, took a considerable number of photographs of Parish roadway conditions, including in 2016 of phase I roads, in 2017 of phase II roads, and in 2019 to document the progressive nature of road damage. APTIM also relied on photographs taken in 2015 by Fugro, a consultant hired by the Louisiana Department of Transportation and Development (LADOTD) to evaluate and videolog the condition of Louisiana's roadways. Thus, APTIM reviewed photographs of Parish roads over multiple years, including the Fugro photographs taken a relatively short time before the declared disaster in 2016.

Based on its analysis which included not only review of the photographs but also review of scientific studies; road core sample testing done by a third party technical firm; and

the Parish's maintenance, inspection, and construction records, APTIM concluded that the Parish roadways suffered damage to their base caused by the ingress of flood water, which in turn led to structural damage to the roads. All variables considered, APTIM concluded that the damage was a result of the declared disaster.

II. FEMA's Denial of the Parish's Request

FEMA denied the Parish's request for PA funding, stating that the Parish failed to provide sufficient evidence to demonstrate that the roads were damaged as a result of the 2016 storm. FEMA concluded that the Parish had not provided evidence demonstrating the base layers underneath any of the roads were directly damaged by the declared event as opposed to damage from some other pre-existing condition or variable. FEMA also construed the Parish's funding request as one for the projected loss of useful life of a facility, which is ineligible for PA funding.

Following FEMA's decision, the Parish filed this request for arbitration with the Board.

Discussion

I. FEMA's Public Assistance Policy

To be eligible for PA funds, the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act), 42 U.S.C. §§ 5121-5207 (2012), and FEMA's implementing regulations require than an eligible facility must have been damaged or destroyed by a major disaster. 42 U.S.C. § 5172, 44 CFR 206.223(a)(1) (2017).

The Stafford Act and FEMA regulations define "public facility" nearly identically in 42 U.S.C. § 5122(10)(C) and 44 CFR 206.221, as follows:

> Public facility means the following facilities owned by a State or local government: any flood control, navigation, irrigation, reclamation, public power, sewage treatment and collection, water supply and distribution, watershed development, or airport facility; any non-Federal-aid street, road, or highway; and any other public building, structure, or system, including those used for educational, recreational, or cultural purposes; or any park.

Additionally, FEMA's Public Assistance Program and Policy Guide (PAPPG) provides that FEMA does not provide PA funding for repair of damage caused by

deterioration, deferred maintenance, failure to protect the facility from further damage, or negligence. PAPPG at 19 (Jan. 1, 2016). The PAPPG also states:

> [An] incident may cause minor damage to roads that result in damage similar to that which may occur over time from other causes, such as the age of the road, traffic flow, and frequent rain. Therefore, distinguishing between pre-existing damage and damage caused by the incident is often difficult. For the repair of this type of damage to be eligible, the Applicant must demonstrate that the damage was directly caused by the incident.
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> When evaluating eligibility of reported road damage, in addition to evaluating how the incident caused the damage, FEMA reviews maintenance records or documentation establishing that the Applicant has a routine maintenance program. In the absence of maintenance records, FEMA reviews material purchase invoices and activity logs and inspects other sections of the Applicant's road system to confirm the performance of normal maintenance activities.

Id. at 116.

The applicant has the burden to demonstrate that damage was directly caused by a declared incident.[1] PAPPG at 116.

II. Record Evidences Disaster-Related Road Damage

A. Loss of Useful Life of Roads

An eligible facility for PA funding pursuant to the Stafford Act includes non-federal-aid streets, roads, and highways owned by a State or local government. 42 U.S.C. § 5122(10)(C) and 44 CFR 206.221. Mark Brewer, FEMA's technical consultant who

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[1] In its decision denying the Parish's request, FEMA relied on a September 2017 memorandum stating that road damage must be "visible and quantifiable from a site inspection" to qualify for public assistance. However, during the arbitration hearing, Lynne Browning, Assistant Deputy Director of Public Assistance with the grantee, the Governor's Office of Homeland Security and Emergency Preparedness (GOHSEP) in Louisiana, provided testimony that GOHSEP was not even aware of the memorandum until March 2019. We decline to rely on the memorandum because it post-dates the declared incident. Notably, even FEMA applies the various versions of its PPAPG prospectively, not retroactively. *See* https://www.fema.gov/media-library/assets/documents/186271.

produced a report for FEMA on Parish road conditions in December 2017, provided testimony reiterating that the road surfaces and bases at issue in this arbitration are eligible facilities. Accordingly, there is no dispute that the Parish roads are "eligible" facilities.

However, FEMA argues that the Parish is essentially seeking funding for loss of useful service life of the roads which, under FEMA's PAPPG, is ineligible for public assistance. The PAPPG states:

> FEMA cannot provide PA funding for the projected loss of useful service life of a facility. For example, if a road has been inundated by flood waters for an extended period of time, FEMA cannot provide PA funding for the value of the projected loss of useful life of the road due to the long-term effects the inundation might have on the road.

PAPPG at 42.

Although the PAPPG states that a claim for "projected loss of useful service life" is ineligible for federal assistance, the guide provides no definition for this term, nor explains how ineligible "projected loss of useful service life" is distinguishable from otherwise eligible "damage" caused by a declared incident. Indeed, the term "damage" is not defined in the Stafford Act, and FEMA does not explain, either in its regulations implementing the Act or in the PAPPG, what the term means in the context of the extent or type of eligible road distress. Notably, "[w]hen a term goes undefined in a statute, [tribunals] give the term its ordinary meaning." *Taniguchi v. Kan Pacific Saipan, Ltd.*, 566 U.S. 560, 566 (2012). Random House Webster's Unabridged Dictionary defines "damage" as "injury or harm that reduces value or usefulness." Random House Webster's Unabridged Dictionary 504 (2d ed. 2001). Webster's New World College Dictionary defines "damage" as "injury or harm to a person or thing, resulting in a loss in soundness or value." Webster's New World College Dictionary 373 (5th ed. 2016).

Bossier Parish argues that it is not requesting compensation for projected or future loss of service life of its roads, but for the actual damage to the base of its roads caused by the storm. The manner in which Bossier Parish presented its evidence supports its argument. The Parish's evidence – the pre- and post-storm photographs, the cores from flooded and non-flooded roads, and the immediate, post-storm hiring of and analysis from APTIM – showed the storm's actual and visible impact on the Parish roads. Thus, considering the "ordinary meaning" of the term "damage," we find that the Parish is seeking PA funding, not for projected loss of service life of its roads, but for the demonstrable losses or damage caused by the storm.

B. Damage

During the declared incident in March 2016, Bossier Parish experienced rainfall amounts of up to thirty inches, with certain of its roads under water for as long as fourteen days. The Parish asserts that the resulting damage to its roads is visible, permanent, and quantifiable and seeks public assistance to repair the damage and restore the roads to their pre-disaster condition. FEMA denied that the Parish is entitled to PA funding, arguing that the Parish has failed to show that the claimed damage was a direct result of the declared disaster and was not related to pre-disaster conditions of the roads.

We find that evidence presented by the Parish in support of its request for PA funding is substantial in amount and credible. The Parish relies on scholarly studies, photographs, expert analysis, engineering testing, maintenance, and other records that show that the declared incident caused damage to the roads at issue in this arbitration.

1. Flooding's Impact on Roadways

The Parish started its damage assessment soon after the declared incident in March 2016. In or around June 2016, the Parish hired APTIM to document road damage caused by the storm and complete repair cost estimates. The APTIM team included two civil engineers, two geotechnical engineers, and a structural engineer. Three members of this team also served as experts and provided testimony for the Parish in this arbitration – Dishili Young, P.E.; Firouz Rosti, Ph.D., P.E.; and R. Graham Forsythe, M.Eng., P.E. Both Dr. Rosti and Mr. Forsythe are geotechnical engineers.

Dr. Rosti and Mr. Forsythe provided both written and oral testimony on the impact of flooding on road conditions. Dr. Rosti referenced the substantial literature on flood-related damage to roads. The literature uniformly concludes that road submergence can cause significant failure of road structure, including to asphalt, base, and sub-grade levels. Mr. Forsythe provided testimony that it is possible to differentiate typical wear and tear of a roadway from damage due to flooding. He explained that the speed at which roads deteriorate is a major indicator. While deterioration of roads is typical, severe deterioration within a short period of time is not due to otherwise typical wear and tear. Mr. Forsythe added that this is especially true in the case of roads that have low traffic, such as certain of the phase II roads at issue in this arbitration.

To explain further the impact that flood damage can have on roads, the Parish proffered a report from the Louisiana Transportation Research Center (LTRC) entitled "Best Practices for Assessing Roadway Damages Caused by Flooding." After Hurricane Katrina and Rita and the resulting catastrophic flooding, the LTRC began researching the effect that

water has on roadways. In its report, the LTRC addressed damage to pavement structures that remain visually intact (i.e., are not washed out) during a flooding event, and concluded that flooding results in deterioration or weakening of pavement layers and such damage may not be visible on the surface. The report confirmed that flooding damages the underlying unbound granular layers, such as granular base, granular sub-base, and subgrade soils, which reduces the strength and stiffness in these layers. According to the LTRC, this damage may result in rutting, cracking, or even local structural failure of a roadway.

2. Road-Specific Damage

To assess specific damage, the Parish categorized roads as either phase I, roadways designed for heavy traffic, or phase II, primarily secondary roads designed for light traffic.

a. Phase I Roads

i. Atkins Clark

For Atkins Clark, a five-mile roadway, the Parish submitted two claims and provided photographs to show pre- and post-storm conditions of the road. FEMA found the photographs unpersuasive, asserting that they were not clear or showed pre-existing damage to the road. Mr. Forsythe rebutted FEMA's assessment, relying on photographs taken over a four-year period. Photographs taken in 2015, prior to the disaster-related event, showed that Atkins Clark Road was in good condition with no signs of distress or excessive wear. Mr. Forsythe noted that, during the 2016 flooding event, Atkins Clark was submerged under several feet of water for twelve days. In photographs taken later that same year, he showed that severe differential longitudinal cracking and potholing were starting to occur. Mr. Forsythe also referenced photographs taken in 2017 and in 2019, showing severe rutting and differential cracking in the same areas of this road that three years earlier showed no visible signs of distress.

FEMA also argued that Atkins Clark Road had been damaged in a previous disaster in 2015 for which assistance was provided, suggesting that the claimed damage was not due to the declared disaster in 2016. However, Ms. Young testified that the photographs that she took of Atkins Clark Road showing flooding in 2016 were taken in areas that were not flooded in 2015. She also compared the Global Positioning System (GPS) coordinates associated with her photographs to coordinates for the geographic limits of the 2015 flooding. Additionally, as part of this arbitration, the Parish provided a map of Atkins Clark Road with a legend clearly distinguishing the flood waters from the 2015 and 2016 events. The map illustrates that the Parish is seeking PA funding for damage to roads from the 2016 declared disaster, not from the 2015 storm. Thus, we find the Parish's evidence shows that

the 2016 storm caused damage to Atkins Clark Road, and that the Parish is seeking funds to repair that damage as oposed to damage for conditions existing before the 2016 storm.

ii. Caplis Sligo Road

For Caplis Sligo Road, FEMA asserted that the pre-disaster photographs provided by the Parish showed cracking within the roadway, indicating a pre-existing condition. However, during the arbitration hearing, Mr. Forsythe noted that photographs taken in 2015 show that Caplis Sligo was in good condition, with no signs of distress or excessive wear. He testified that, during the 2016 flooding event, the road was submerged under several feet of water for ten days and that photographs taken three months after the event showed minor rutting and cracking starting to occur. Further, photographs taken in 2017 showed deeper rutting and differential longitudinal cracking in the same areas that three years earlier showed no visible signs of distress. Ms. Young compared the 2016 (post flood) photographs with those taken by Fugro in 2015 (pre-flood), which confirmed that the claimed damage was not pre-existing. Based upon Mr. Forsythe and Ms. Young's testimony, and supporting photographic evidence, we find that the 2016 storm caused damage to Caplis Sligo Road.

iii. Poole Road

According to Mr. Joe E. Ford, Jr., the Parish's engineer, Poole Road was the most inundated by the declared disaster, with four feet of water covering the road for approximately fourteen days. FEMA concluded that the Parish had not demonstrated that the damage to Poole Road was directly related to the 2016 disaster because it found pre-disaster photographs that showed cracking in the middle of the roadbed, an indication of a pre-existing condition. FEMA noted that Poole Road was damaged in the disaster occurring in 2015, and was previously determined ineligible for assistance based on pre-disaster conditions. FEMA added that the Parish has not provided documentation showing that Poole Road was repaired from the 2015 disaster and that, absent such documentation, FEMA could not differentiate damage sustained in 2015 from that sustained in 2016.

Mr. Ford testified that, prior to the 2016 storm, ninety percent of Poole Road was intact and in good condition, but after the storm, the road had suffered significant failure, with the base essentially gone. As for FEMA's argument that the damage to the road was caused by the 2015 incident, not the one in 2016, Mr. Ford showed sections of Poole Road that were not damaged in the 2015 flood but were damaged in 2016. Ms. Young also noted that photographs of the road that she took in June 2016 showing damage were of sections of the road that did not flood in 2015.

Based upon Mr. Ford and Ms. Young's testimony, we find that the 2016 storm caused damage to Poole Road.

iv. Smith Road

In the 2016 flooding event, Smith Road was submerged under several feet of water for twelve days. In denying funding for the road, FEMA averred that it found indications of cracking in the road prior to the declared event.

The Parish, through Mr. Forsythe's testimony, conceded that photographs taken of Smith Road in 2015, prior to the declared incident, show cracking. According to Mr. Forsythe, such cracking is primarily due to temperature cycles which tend to cause shrinkage of the base core. However, the Parish's maintenance records reflect that Smith Road was maintained by patching with hot mix, culvert work, and dirt in November and December 2015, just prior to the declared event. Further, Mr. Forsythe testified about photographs taken of Smith Road in 2017 which showed extensive damage to the road in the form of rutting and severe differential cracking. Given the photographs and maintenance record, we find the Parish's evidence convincing that the declared storm event caused damage to Smith Road.

b. Phase II Roads

FEMA found that, in pre-disaster photographs from 2015, the majority of the phase II roads exhibited substandard conditions such as alligator, longitudinal, and transverse cracking. FEMA argued that the presence of such cracking is indicative of a pre-existing condition which should have been addressed under the Parish's maintenance program. Further, for certain of the roads included in phase II, FEMA found that the Parish did not provide a pre-disaster photograph, provided a poor quality photograph, or provided a photograph taken well in advance of the event.

Dr. Rosti testified that he personally inspected each of the phase II roads after the 2016 storm. Upon inspection, he observed excessive asphalt and surface layer damage, including different types of cracking, road base, and subgrade damage. Additionally, APTIM provided a detailed, road-by-road analysis in one of its reports on the phase II roadways. The report included discussions of pre- and post-flood photographs, and analysis of testing of the materials used to construct the phase II roads. APTIM determined that the roads sustained permanent damage from the 2016 storm to the layer of cement or to the compacted aggregate base beneath the paved roads. APTIM noted that the primary cause of damage was the ingress of water into the roadways, which reduced the strength and stiffness of the bases. APTIM concluded that this weakening of the pavement structure from the storm in 2016

resulted in rutting, cracking, or local structural failure of the roadway. Based on the expert testimony and detailed expert reports, as well as the photographs, we find that the Parish has presented sufficient evidence that the 2016 storm caused damage to the phase II roads.

c. The Parish's Additional Evidence

i. Maintenance Records

FEMA's policies recognize that distinguishing between pre-existing damage and damage caused by a disaster-related incident is often difficult. Nevertheless, where there is pre-existing damage to a facility, an applicant must distinguish the disaster-related damage for which its seeks PA funding from pre-existing damage. This can be accomplished by the applicant presenting documentation, primarily in the form of pre- and post-disaster maintenance-related records, evidencing that the damage claimed was a result of the disaster and not deterioration or deferred maintenance.

Mr. Ford described the Parish's maintenance program. The Parish maintains approximately 750 miles of roads, and the roads are built to standards established by the LADOTD. The Parish has a highway department staff of sixty-five to seventy people, with crews dispatched to repair roads per LADOTD standards. The Parish has a three-year-cycle road program, and Mr. Ford travels Parish roads annually with elected officials to determine which roads require repair based on the condition and age of the road, as well as the traffic on the road. The Parish lays about $2 million worth of asphalt a year on about fifteen to twenty miles of roadway. Additionally, since around 2008, the Parish has had a three-person commercial vehicle enforcement unit crew that ensures that trucks traveling Parish roads have necessary permits and the correct number of axles to reduce impact on roads and subgrades.

To support its PA request, the Parish also provided road-by-road documentation on maintenance activities completed as far back as 2006. Both Dr. Rosti and Mr. Forsythe reviewed these records and testified that Parish roads were properly constructed and well-maintained prior to the storm. Dr. Allen Cooley, Jr., FEMA's expert, admitted that his review of the Parish's maintenance records was cursory and not comprehensive. Thus, we find that the Parish has presented sufficient evidence establishing that it has a routine road maintenance program to both repair and minimize damaging effects to its roads. The program, along with the other evidence presented by the Parish, overcomes FEMA's assertion that deferred maintenance may have been the cause of damage to the Parish's roads.

ii. Coring

The PAPPG does not mention the use of coring of roadways as a means or suggested process to prove road damage from a declared incident. Nevertheless, adding to already considerable evidence, the Parish obtained core samples of its road to visually show the impact of the declared disaster to the road bases. The Parish provided photographs of the core samples, as well as expert reports analyzing the samples. The Parish showed samples of cores from both non-flooded and flooded roads to the panel at the arbitration hearing.

Ms. Young explained that core sampling is an effective method of showing the layers underneath pavement. She further testified that comparing cores from a flooded section of a roadway to cores taken at the same time of a non-flooded section of either the same roadway or similarly situated roadway (in terms of construction, age, maintenance, location, and traffic) is an acceptable way to determine if a single event like a flood caused damage to the flooded section. Notably, FEMA's experts concur with this opinion.

Mr. Forsythe, in his testimony, explained that a visual observation of the core samples showed obvious, significant damage to the cement-treated base roads. Specifically, as for the phase I roads, the core samples for Atkins Clark Road show degradation of the cement-treated base into soft soil. Most of the samples from Poole Road show the cement-treated base had completely disintegrated. The samples indicate that there is actually soft soil where cement-treated base was originally constructed. Similarly, the core samples from Smith Road indicate that the cement-treated base had degraded to moist soil. For Caplis Sligo Road, the loss in stiffness to its cement-treated base was so great that the coring sample could only be stored in plastic bags. Coring samples from the phase II roads showed fracturing to the cement-treated bases. In contrast to the roads for which the Parish is seeking funding, the core samples from the comparison roadways (i.e., those which did not flood in 2016) showed cement-treated bases that were intact. Core testing on phase II aggregate base roads also evidenced damage, including degradation of subgrade soil, intrusion of base and subgrade material into each other, or decrease in size of the actual base.

FEMA's response to the Parish's physical evidence was limited or primarily theoretical. Dr. Cooley testified that a properly-constructed, cement-treated road has a high density and typically does not absorb water. Thus, he concluded that it is unlikely that cement-treated roads can be damaged by flood. However, he conceded that, for the roads at issue in this arbitration, he performed no analysis on the density of the cement-treated base layers, nor did he inspect the Parish's core samples. He also did not contact the Parish to ask questions about the cores or the processes used to obtain the core samples. As far as other potential variables that could have caused the damage to the Parish's roads, Dr. Cooley testified that he did not perform assessments of those potential variables (e.g., design life of

road or drainage of pavement structure) because he did not have sufficient information. Dr. R.C. Ahlrich, FEMA's other expert, provided testimony that, based on his review, he could not say that the damage to the roads was only due to flooding. Thus, he did not definitively rule out the declared disaster as a cause of the damage to the Parish roads.[2]

Decision

The panel determines that Bossier Parish has proven that the declared disaster of 2016 caused damage to the roads at issue in this arbitration.

Beverly M. Russell
BEVERLY M. RUSSELL
Board Judge

Jeri Kaylene Somers
Jeri Kaylene Somers
Board Judge

Marian E. Sullivan
Marian E. Sullivan
Board Judge

[2] We note that FEMA's experts were limited in what they could do as both were hired in or around December 2019, within about a month of the January 2020 arbitration hearing. Thus, the time to undertake an investigation and analysis of data comparable to the multi-year efforts of the Parish's experts was lacking.