UNITED STATES
CIVILIAN BOARD OF CONTRACT APPEALS

May 18, 2023

CBCA 7611-FEMA

In the Matter of TOWN OF TOPSAIL BEACH, NORTH CAROLINA

Erin Greten of Baker, Donelson, Bearman, Caldwell & Berkowitz, PC, Washington, DC; Katelyn Dodd of Baker, Donelson, Bearman, Caldwell & Berkowitz, PC, Birmingham, AL; and Stephen D. Coggins of Rountree Losee, LLP, Wilmington, NC, counsel for Applicant.

William M. Polk and Jonathan Ekblad, North Carolina Department of Public Safety, Raleigh, NC, counsel for Grantee.

Christiana Cooley, 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 **LESTER**, **GOODMAN**, and **CHADWICK**.

GOODMAN, Board Judge, writing for the panel.

Background

The applicant, the Town of Topsail Beach, North Carolina, sought arbitration of a dispute with the Federal Emergency Management Agency (FEMA) about how to measure the amount of sand needed to repair beach damage caused by Hurricane Isaias in 2020. We agree with the methodology described by FEMA in the arbitration hearing.

Discussion

The parties disagree as to how to measure the quantity of sand eligible for replacement at the applicant's engineered beach. The panel conducted a hearing on April 19, 2023.[1]

The purpose of the applicant's engineered beach is to serve as a storm barrier. FEMA's policy for renourishment of an engineered beach is discussed in FEMA's Public Assistance Program and Policy Guide (PAPPG) (June 2020), which defines the amount of sand eligible for replacement as follows:

> The amount of sand eligible for replacement is limited to the amount lost due to the incident. The Applicant needs to substantiate the amount of sand claimed with pre-and post-incident profiles that extend at least to the seaward edge of the sub-aqueous nearshore zone (Depth of Closure) (see Figure 16, Typical Beach Profile). If pre-storm profiles are not available, documentation may include design documents and renourishment history. The Applicant needs to adjust quantities to account for any erosion that occurred between the pre- and post-incident profiles.

Id. at 181.

FEMA applies the following definition from its guidance document[2] titled "Guidance for Flood Risk Analysis and Mapping: Coastal Notation, Acronyms, and Glossary or Terms (May 2016)" (guidance document) to explain the term "Depth of Closure" in the PAPPG provision quoted above:

> Closure depth - The water depth beyond which repetitive profile surveys (collected over several years) do not detect vertical sea bed changes, generally considered to be the seaward limit of littoral transport. The depth can be determined from repeated cross-shore profile surveys or estimated using

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[1] After the hearing, the applicant moved to supplement the record with additional data, stating: "[U]nderstanding FEMA has previously consistently stated its preference for additional data, the Applicant believes providing such data and average calculations may be a rational resolution to this dispute." This decision did not require the panel to perform calculations based on data previously submitted, and we do not include in the record the additional information offered by the applicant. Accordingly, we deny the motion to supplement the record as moot.

[2] Available at https://www.fema.gov/sites/default/files/2020-02/Coastal_Notation_Acronyms_Glossary_May_2016.pdf.

> formulas based on wave statistics. Note that this does not imply the lack of sediment motion beyond this depth.

Id. at 15.

The applicant characterized the dispute in its request for arbitration as follows:

> This dispute is over the Depth of Closure (DOC) of the Town's engineered beach. FEMA uses the DOC to calculate sand loss on engineered beaches after a storm. [Footnote omitted]. The DOC location is critical to FEMA reimbursement because (a) FEMA reimburses only for engineered beach sand lost to a FEMA-declared disaster which natural ocean dynamics will not return to the beach, (b) natural ocean dynamics cannot return sand moved seaward of the sub-aqueous nearshore zone and, therefore, (c) FEMA only reimburses for sand the disaster moves seaward of the sub-aqueous nearshore zone.
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> The problem is that the point that marks the end of the sub-aqueous nearshore zone is called the Inner DOC. There is also an Outer DOC, which marks the seaward end of the Shoal Zone where, even in a large storm, the surface wave energy is not strong enough to reach the bottom and cause sand movement.[3] FEMA policy uses only the single term "Depth of Closure" but does so in a way that must only mean the Inner DOC. Meanwhile, the agency has applied the Outer DOC for this event to Topsail Beach—an action that by its nature will always result in a determination that sand was not lost by a disaster because the Outer DOC is set at the point at which sand does not move even in a storm.[4]

Applicant's Request for Arbitration at 1.

The parties differ in their interpretations of the term "Depth of Closure," or "DOC," which is defined in the PAPPG as "the seaward edge of the sub-aqueous nearshore zone." During the hearing, the parties agreed that the issue to be resolved in the arbitration was a determination of the seaward boundary of the area within which the sand remaining would still protect the beach.[5]

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[3] The applicant uses formulas with the concepts of inner and outer DOC.

[4] FEMA rebuts this allegation, emphasizing that FEMA has replaced sand on many engineered beaches.

[5] The discussion during the hearing referred to this area as "the sandbox."

The applicant and grantee presented witnesses who testified in support of the applicant's determination that the seaward boundary at issue would be at what it refers to as the inner DOC, which it calculates as a depth of thirteen feet. FEMA's witness was a FEMA employee who specializes in beach projects. He testified that FEMA does not use the terms inner or outer DOC, or the formulas used by the applicant containing these terms, to calculate the seaward boundary at issue. Rather, according to FEMA, the seaward boundary at issue is determined by the provision of the PAPPG quoted above and the definition of "closure depth" in the guidance document and is that depth beyond which vertical movement of sand ceases. FEMA asserts that the quantity of sand that remains up to the seaward boundary at issue is not "lost due to the incident" and need not be replenished for the engineered beach to continue to serve as a barrier against erosion.

FEMA's witness testified that based upon beach profiles supplied by the applicant, vertical bottom movement of sand continued seaward and did not cease until an average depth of twenty-five feet, and therefore the seaward boundary at issue was at a depth of twenty-five feet. Contrary to the applicant's position, FEMA maintains that the sand that was moved by the incident seaward between a depth of thirteen and twenty-five feet still protects the beach and that quantity of sand should not be included in the calculation of additional sand needed to replenish the beach.

We find FEMA's determination of the seaward boundary at issue persuasive, as it comports with the definition of DOC in the PAPPG and the definition of "closure depth" in the guidance document. FEMA recognizes that there may have been sand lost due to the incident which, pursuant to the PAPPG, must be substantiated and replenished. To calculate this amount, the parties must first apply FEMA's determination of the seaward boundary of the area within which the sand remaining would still protect the beach as a depth of twenty-five feet and calculate the quantity of the sand that remains in that area. By FEMA's definition, this amount of sand still protects the beach and need not be included in the quantity to be replenished.

Decision

The amount of sand eligible for replacement, if any, shall be calculated by applying FEMA's determination of the seaward boundary at issue as a depth of twenty-five feet.

Allan H. Goodman

ALLAN H. GOODMAN
Board Judge

Harold D. Lester, Jr.
HAROLD D. LESTER, JR.
Board Judge

Kyle Chadwick
KYLE CHADWICK
Board Judge