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December 31, 2020

**VIA ELECTRONIC FILING**
ATTN: FEMA Arbitration Administrator
Civilian Board of Contract Appeals
1800 M Street, N.W., Room 6006
Washington, D.C. 20036

Re: **Request for Arbitration**
In Re: FEMA Project Worksheet Number 11 and its First Appeal Decision, and Related Matters
Subrecipient: City of Hattiesburg
FIPS: 035-31020-00
Declaration No.: FEMA-MS–DR 4295 (Severe Storms, Tornados, Straight-line Winds, and flooding, January 20-21, 2017)

Dear FEMA Arbitration Administrator:

Our office represents the City of Hattiesburg, Mississippi. Please accept this letter and attached Memorandum as the formal Request for Arbitration on behalf of the Subrecipient, the City of Hattiesburg, Mississippi, pursuant to the provisions of the Disaster Recovery Reform Act Section 1219, which amended Section 423(d) of the Stafford Act (42 U.S.S. 5189a).

Enclosed with this correspondence are an original and two copies of the "*City of Hattiesburg Request for Arbitration of Project Worksheet 11 and its First Appeal Decision, and Related Matters*" along with the arbitration exhibits submitted in support of this Request for Arbitration.

A copy of this request and the exhibits are being simultaneously sent to both FEMA and the Mississippi Emergency Management Agency.

We respectfully request that the hearing be held by Zoom, in the City of Hattiesburg, Mississippi or in the City of New Orleans, Louisiana.

Thank you in advance for your consideration of this Request for Arbitration.

If you should have any questions that require any additional information or documentation, please do not hesitate to contact our office.

Very truly yours,

Michael G. Gaffney

cc: Mississippi Emergency Management Agency, Mike Siler; msiler@mema.ms.gov

Mississippi Emergency Management Agency, Andy Hood; ahood@mema.ms.gov
Mississippi Emergency Management Agency, Clayton French; cfrence@mema.ms.gov
Gracia B. Szcech, FEMA Regional Administrator, 3005 Chamblee Tucker Road, Atlanta, Georgia 30341; GarciaSzcech@FEMA.dhs.gov
FEMA, Terry Quarles; Terryquarles@FEMA.dhs.gov
FEMA, John Robuck; John.Robuck@FEMA.dhs.gov
City of Hattiesburg, Kermas Eaton; Keaton@hattiesburgms.com
City of Hattiesburg, Ann Jones; ajones@hattiesburgms.com

# REQUEST FOR ARBITRATION

**IN RE: FEMA PROJECT WORKSHEET NUMBER 11 and its FIRST APPEAL DECISION, AND RELATED MATTERS**

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|---|---|
| SUBRECIPIENT: | City of Hattiesburg, Mississippi |
| FACILITY: | Fire Station No. 2 |
| FIPS: | #035-31020-00 |
| FEMA PW NO.: | 11 and its First Appeal Decision dated November 2, 2020 |

**CITY OF HATTIESBURG, MISSISSIPPI**
**REQUEST FOR ARBITRATION**
**OF**
**PROJECT WORKSHEET NUMBER 11**
**and its FIRST APPEAL DECISION, AND RELATED MATTERS**

MAY IT PLEASE THIS HONORABLE ARBITRATION PANEL:

## I. STATEMENT OF SUBJECT MATTER JURISDICTION:

This honorable arbitration panel is granted subject matter jurisdiction over this dispute pursuant to the provisions of the Disaster Recovery Reform Act of 2018 (DRRA) Section 1219 which amended Section 4253d of the Stafford Act (42 U.S. C. 5189a).[1] This arbitration is filed in compliance with the CBCA promulgated rules and the proposed regulations at 48 CFR part 6106.

The dispute arises from DR 4295 (Severe Storms, Tornados, Straight-line Winds, and flooding, January 20-21, 2017, a disaster declared after January 1, 2016. The amount in dispute in this matter exceeds Five Hundred Thousand Dollars ($500,000.00). A First Appeal pursuant to the requirements of 44 CFR 206.206 was timely submitted. A negative First Appeal decision dated November 2, 2020 was first received by the City of Hattiesburg, Mississippi on November 4, 2020.

A Request for Arbitration "must contain a written statement and all documentation supporting the position of the Subrecipient . . . ((206.209(e))." "The Subrecipient/subgrantee may provide supporting documentation not previously included in the project." (Rule 6106.608) The respondent/FEMA has different jurisdictional requirements to simultaneously submit a response

[1] Please see arbitration rules, 44 CFR, Part 206, subpart G.

in support of its position, a copy of the project worksheet(s), and any supporting documentation to the arbitration administrator, the Recipient, and the Subrecipient ((206.209(e)(4)).

In light of the grant of subject matter jurisdiction to this panel, the City of Hattiesburg, Mississippi (hereinafter sometimes referred to as "Subrecipient", "Hattiesburg", or "City") files this Request for Arbitration, pursuant to Disaster Recovery Reform Act of 2018 (DRRA) Section 1219 which amended Section 4253d of the Stafford Act (42 U.S. C. 5189a in lieu of taking a Second Administrative Appeal of Project Worksheet No. 11 and the First Appeal Decision rendered in this matter.

**We respectfully request that the hearing be held by Zoom, in the City of Hattiesburg, or in New Orleans, Louisiana.**

## II. INTRODUCTION:

Pursuant to the provisions of 44 CFR Part 206, the City of Hattiesburg hereby submits this *Request for Arbitration ("RFA")* in connection with Project Worksheet ("PW") No. 11 which was prepared by the Federal Emergency Management Agency ("FEMA") and the First Appeal decision dated November 2, 2020 of which notice was provided to the Subrecipient by FEMA directly. [2]

**This Request for Arbitration submission is made on the following basis:**

Hattiesburg respectfully requests that the panel determine that the Subrecipient is entitled to the relief requested based upon:

(1) the entire administrative record herein, including the City's response to the Request for Information, which administrative record was before FEMA when it drafted this Project Worksheet and the First Appeal Decision;

(2) the additional documentation in the form of the exhibits attached hereto; and

(3) the testimony to be provided at the hearing of this matter.

Accordingly, the City of Hattiesburg requests that this Honorable Panel review the record provided herewith, along with the testimony to be presented at the oral presentation, and determine that the Subrecipient is entitled to:

1. The Replacement pursuant to FEMA's 50% rule of Fire Station No. 2.

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[2] Please see exhibit 1.

2. The FEMA Public Assistance Funding necessary to design and construct the replacement of the damaged Fire Station No. 2 in the amount of $2,231,941.

## III. FACTUAL BACKGROUND:

During the incident period of January 20, 2017 through January 21, 2017, the City of Hattiesburg's Fire Station #2, a one story 3,207 square foot fire station constructed of stack-bond concrete masonry, flat roof bar joist, and tectum panel decking, was struck by tornado force winds and rain causing very significant disaster damage.

The tornado caused tremendous damage as is represented in the following pictures:

A team of FEMA project officers and project specialists along with the Applicant performed site visits and prepared an assessment of the disaster damages to Fire Station #2.

On November 18, 2018, FEMA completed its 50% Repair vs. Replacement Analysis ("50% Rule Analysis") based upon its site inspections which confirmed significant structural damages including but not limited to damages to the roof, interior walls, exterior walls, and interior areas of Fire Station #2, the engine bay doors, facia and soffit, cracked brick, electrical and communications service, windows, heaters, HVAC, trench drain, wall supports, gutter and downspouts, parapets, flashings and counter flashings, gas service, ceilings, insulation, electrical systems, plumbing systems, floors, interior partitions, corridor ceilings, and woodwork.[3]

As a result of this 50% Repair vs. Replacement Analysis, FEMA made and issued a final determination that the estimated cost to repair the fire station was 51.80% of the estimated cost of

[3] Please see exhibit 2.

the replacement. Accordingly, FEMA made a determination that the restoration of the disaster damaged facility was eligible for replacement funding and advised the Applicant of this FEMA decision.[4] The determination that the facility was entitled to PA replacement funding was not contested and became a final determination

Relying upon FEMA's final determination concerning replacement, the City of Hattiesburg properly procured a Project Manager and a Design Team to replace the Fire Station.

The disaster damaged Fire Station not been repaired. The disaster damage to the facility has not been mitigated since it was intended to be torn down. The condition of the building has safe and secure but has deteriorated.

On July 12, 2019, the City submitted to FEMA a proposed floor plan in compliance with all required codes and standards requesting funding for an "In kind, at cost" replacement facility. The proposed replacement building was 5,928.72 square feet.[5]

The City provided justification from its Design Team for the proposed increase in square footage area based upon several general and use specific current codes and standards.[6]

On October 29, 2019, an earlier favorable First Appeal decision approved the additional square footage.[7]

On January 7, 2020, FEMA reversed the decision that it had communicated to Hattiesburg on November 18, 2018 that the disaster damaged Fire Station #2 building was eligible for replacement funding. FEMA now told Hattiesburg that it would NOT fund the replacement facility.[8]

This January 7, 2020 communication reversing the prior replacement decision was the subject of the recent First Appeal. The recent First Appeal refused to revisit the reversal of the decision not to replace the Fire Station No. 2. This recent First Appeal decision denying replacement is now the subject of this arbitration.

The FEMA Public Assistance Funding necessary to replace the damaged Fire Station No. 2 is $2,231,941, plus Project Management cost.[9]

FEMA has now determined that $1,928,376 of the requested $2,231,941 in funding for the replacement of the disaster damaged City of Hattiesburg Fire Station #2 is no longer eligible for FEMA replacement funding.

Accordingly, the amount in dispute in this First Appeal is $1,928,376.00 plus

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4 Please see Appeal exhibit 3 which is part of the administrative record.
5 Please see Appeal exhibit 4 which is part of the administrative record.
6 Please see Appeal exhibit 5 which is part of the administrative record.
7 Please see Appeal exhibit 6 which is part of the administrative record.
8 Please see Appeal exhibit 7 which is part of the administrative record.
9 These costs may need to be updated to reflect conditions due to Covid-19.

Project Management.

## IV. ARBITRATION ISSUES:

The First Appeal and this Request for Arbitration concern the improper application and interpretation by FEMA of the 50% Rule established in 44 CFR 206.226(f).

1. Is the City of Hattiesburg entitled to the FEMA Public Assistance funding for the replacement pursuant to the 50% Rule for Fire Station No. 2.?

## V. LAW AND DISCUSSION OF THE ARBITRATION ISSUES:

ERRORS IN FIRST APPEAL

**Errors in the FEMA First Appeal:**

**1. The First Appeal was incorrect because FEMA used the improper guidance.**

FEMA Appeals relied upon the *FEMA Public Assistance Program and Policy Guide, FP 104-009-2 (January1, 2016)* ("PAPPG"). [10]

The City acknowledges that in general the PAPPG dated January 1, 2016 is the appropriate guidance for disasters, such as DR 4295 which was declared on January 20-21 2017, which is between January 1, 2016 and April 1, 2017.[11]

However, pursuant to the Stafford Act §§323 and 406(e) and 44 CFR §206, Subpart M, **FEMA subsequently issued specific guidance** concerning minimum codes and standards on September 30, 2016. This specific guidance is ***FEMA Policy FP-104-009-4*** was published on September 30, 2016. This specific guidance was not superseded until April 1, 2017, the next version of the PAPPG. A copy of this specific guidance, ***FEMA Policy FP-104-009-4,*** is attached hereto.[12]

This specific guidance on minimum codes and standards applies to the City of Hattiesburg Fire Station pursuant to the provisions at ***FEMA Policy FP-104-009-4,*** [13] a because the facility was "substantially damaged" and "suffered substantial structural damage." The Fire Station was because "substantially damaged" because the cost of restoring equals or exceeds 50% of the market value. Additionally, the Fire Station "suffered substantial structural damage" because there was significant damage to the vertical elements of the lateral force resisting system and also to the

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10 See footnote 13 of the First Appeal.

11 Public Assistance Program and Policy Guide, FP 104-009-2 (April 2018), page vii; The incident period for the instant disaster (DR 4295) was January 20-21, 2017.

12 Please see exhibit 2.

13 See Part A, 1, a.

vertical gravity load carrying components of the fire station. [14]

This specific guidance in ***FEMA Policy FP-104-009-4*** **mandates and requires** compliance with minimum codes and standards in accord with Stafford Act §§323 and 406(e).

This specific guidance in ***FEMA Policy FP-104-009-4*** also provide specific guidance on how this guidance on minimum codes and standards impacts the 50% Repair/Replacement analysis in determining whether the facility is eligible for replacement funding under 44 CFR §206.226(f). [15]

This specific guidance in ***FEMA Policy FP-104-009-4*** provides that the upgrades to meet IBC, IEBC, or IRC are treated the same as local codes in calculating **both the repair and the replacement costs.**[16] Thus, the IBC, IEBC, and IRC attributable to damaged elements are considered in the repair cost (numerator) in making the 50% Rule Analysis.

**The minimum codes and associated costs which were omitted by FEMA in the 50% Rule repair cost (numerator) are:**

## IBC 2012 CODE REVIEW AND ANALYSIS

The engine bay roof structure was not attached to the engine bay walls, therefore, during the storm, the structure was displaced approximately ½" to the north and is considered, by the code official and professional consultants, to be irreparable. The tectum decking remained attached to the bar joist structure the structure was displaced when the roof lifted. Once the tectum decking attachment system released from the structure below, displacement of the structure ceased. Therefore, once an alteration to a structure is undertaken, the structure replaced must be constructed according to the code in effect at the time of the alteration.

**[B] 403.1 General.**
Except as provided by Section 401.2 or this section, *alterations* to any building or structure shall comply with the requirements of the *International Building Code* for new construction. *Alterations* shall be such that the *existing building* or structure is no less conforming to the provisions of the *International Building Code* than the *existing building* or structure was prior to the *alteration*.

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14 Additionally, the Fire Station was previously determined by FEMA to be eligible for replacement in accordance with 44 CFR part 206.226(f). Accordingly, this specific guidance is applicable under Part A, 1, a, ii, 2. However, since this is the issue in this Arbitration, reliance upon this element of the guidance is not necessary.

15 Please see FEMA Policy FP-104-009-4 Part 2, b.

16 Please see FEMA Policy FP-104-009-4 Part 2, b.

## SECTION 301
## COMPLIANCE METHODS

**301.1 General.**
The *repair*, *alteration*, *change of occupancy*, *addition* or relocation of all *existing buildings* shall comply with one of the methods listed in Sections 301.1.1 through 301.1.3 as selected by the applicant. Application of a method shall be the sole basis for assessing the compliance of work performed under a single permit unless otherwise approved by the *code official*. Sections 301.1.1 through 301.1.3 shall not be applied in combination with each other. Where this code requires consideration of the seismic force-resisting system of an *existing building* subject to *repair*, *alteration*, *change of occupancy*, *addition* or relocation of *existing buildings*, the seismic evaluation and design shall be based on Section 301.1.4 regardless of which compliance method is used.

**Exception:** Subject to the approval of the *code official*, *alterations* complying with the laws in existence at the time the building or the affected portion of the building was built shall be considered in compliance with the provisions of this code unless the building is undergoing more than a limited structural *alteration* as defined in Section 907.4.3. New structural members added as part of the *alteration* shall comply with the *International Building Code*. *Alterations* of *existing buildings* in *flood hazard areas* shall comply with Section 701.3.

According to the excerpt, above the exception to allow the building to be repaired to laws in existence at the time of the construction of this facility do not apply to the engine bay. This alteration must comply with IBC 2012 which the City of Hattiesburg has presently adopted. As this facility houses First Responders, the intention of the IBC is for the design strength of this facility, and other First Responder facilities, to be approximately 15% stronger than other buildings built under IBC 2012 Code.

**2. FEMA erred in failing to consider the codes and standards applicable to the damaged elements in estimating the Repair cost numerator.**

The analysis by FEMA as to the repair cost numerator failed to recognize the applicable required codes and standards which apply to the damaged elements including those minimum codes and standards referenced above. FEMA's failure to adjust the estimated repair cost in the numerator, for codes and standards to the damaged elements resulted in an erroneous analysis under the 50% Rule.

**FEMA erred in Project Worksheet 11 and the Eligibility Determination Memorandum:**

FEMA's 50% Rule analysis to determine replacement was incorrect for the following reasons:

1. Errors in the **Repair Cost Numerator**:

   A. FEMA in footnote 4 reinterpreted the Insurance Adjuster's clear statement that the Fire Station No 2. was "damaged beyond repair." However, the insurance adjuster did stop assessing the damage when the damage exceeded the amount of insurance coverage.

   B. FEMA failed to include in the estimate of the repair cost the IBC and local

codes and standards which are applicable to the disaster damaged elements. This failure included the failure to include minimum codes and standards as set forth in the specific guidance at ***FEMA Policy FP-104-009-4.***

C. FEMA improperly used the insurance company estimated cost amounts as the basis for the repair costs instead of the RS Means cost amounts which were used in the Replacement Model. This damage assessment stopped after it exceeded the insurance coverage.

D. FEMA improperly used the original repair costs and simply modified that amount by a Building Cost Increase (BCI).

E. FEMA improperly failed to include the allowance for asbestos removal for 641.4 SF in the repair estimate.

## 1. Errors in the Repair Cost:

### A. FEMA failed to include in the repair estimate the codes and standards which are applicable to the disaster damaged elements.

FEMA should prepare a Cost Estimating Format ("CEF") Part A for both the estimated cost to repair the disaster damage with codes applicable to the damaged elements and the estimated cost to replace the disaster damaged facility with a facility of equivalent capacity, using current codes for new construction.

The initial error that FEMA made when it recalculated the Repair Cost was its failure to include in the repair cost, the codes and standards which are applicable to the disaster damaged elements.

In addition to being clearly identified in FEMA Guidance as a component of the Repair cost, without this cost component, any 50% analysis would be absurd. For example, if codes and standards or ADA increased the square footage by almost double for both the repair and the replacement, then 100% of or the entire facility could be missing and yet the 50% Rule Analysis would indicate a repair!

The FEMA Guidance in the *Public Assistance Program and Policy Guide* FP 104-009-2 January 2016 clearly states at page 96 in making the 50% Rule analysis that the repair cost (Numerator) is the cost of repairing disaster-related damage only **and includes costs related to compliance with standards that apply to the repair of the damaged elements only.**[17]

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[17] The Public Assistance Program and Policy Guide FP 104-009-2 January 1, 2018 states that FEMA applies version 3.1 of the guide to "incidents declared on or after August 23, 2017 or, with respect to the changes made in this version, any application for assistance that was pending before FEMA as of August 23, 2017 and has not been finally resolved as of January1, 2018." The instant incident was declared on January 20, 2017. However, the Application for assistance is pending before FEMA as of August 23, 2017. Thus, the Public Assistance Program and Policy Guide FP 104-009-2 January 2018 is applicable. However, FEMA

The codes and standards attributable to the following damaged elements and are clearly missing from the current 50% Rule Analysis:

- The roof was clearly damaged by the disaster as it was lifted from the walls structure by at least 1 inch everywhere. The majority of the roof was completely removed by the Tornado. As a result, the repair of the roof must comply with the new wind load requirements;
- The entrances to the structure were damaged. The repair must comply with the ADA requirements for access;
- The interior of the structure was damaged. The repair must comply with the ADA requirements for access; and
- The walls of the structure were damaged. The walls must comply with the new wind load requirements.

In addition to the local codes and standards, the specific FEMA guidance in ***FEMA Policy FP-104-009-4*** provides that the upgrades to meet IBC, IEBC, or IRC are treated the same as local codes in calculating **both the repair and the replacement costs.**[18] Thus, the IBC, IEBC, and IRC attributable to damaged elements are considered in the repair cost (numerator) in making the 50% Rule Analysis.

FEMA improperly relied upon the insurance company's repair estimate which does not include any codes or standards nor and minimum codes and standards which are attributable to the damaged elements.

The insurance adjuster's assessment used to determine repair costs ceased when it exceeded the available insurance coverage.[19] He clearly stated that he facility could not be repaired.

### B. FEMA improperly used the Insurance Company adjusters' claim as the basis for the repair costs instead of the RSMeans amounts which were used in the Replacement Model.

The Repair Cost in the 50% Rule Analysis is based upon the costs used in the initial 50% Repair vs. Replacement Analysis. A review of those costs reveals that the initial repair costs are based solely upon the Insurance Company's estimate of the damages.

In addition to the failure of these insurance company repair costs to include the applicable codes and standards attributable to the damaged elements, the repair cost methodology is flawed

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relied upon the 2016 Version of the Policy Guide. Nonetheless, the 2018 guidance on this matter is the same.

18 Please see FEMA Policy FP-104-009-4 Part 2, b.

19 While the additional cost of complying with codes applicable to the damaged elements was also omitted from the initial 50% Rule determination, these increases in the repair cost would only increase the percentage of damage. Thus, while it was an error in the initial calculation, it was of no consequence because the repairs already exceeded 50% of the Replacement cost.

due to the fact that it is inconsistent with the methodology used for calculating the Replacement cost. RS Means Cost figures were used to calculate the cost of the replacement. This use of two different costing programs creates a failure to use a comparable basis for estimating the costs.

While the CEF does permit the use of actual numbers where available and reliable, the insurance cost figures are not actual costs, they are merely the use of a different cost estimating program. This use of two different costing programs creates cost differentials between repair and replacement costs which are only due to the use of two different costing programs.

Here the cost of repair exceeded the insurance coverage, so the Insurance Adjuster's damage assessment stopped.

**C. FEMA improperly used the original repair costs and simply modified that amount by a Building Cost Increase (BCI).**

As discussed above, the Repair cost used by FEMA in the 50% Rule on January 7, 2020 is based upon the costs used in the initial 50% Repair vs. Replacement Analysis. A review of those costs reveals that the costs are based upon the insurance company's estimate of the damages.

The January 7, 2020 "repair cost" was simply the use of the initial repair cost (which has the errors noted above) which was then adjusted by the Building Cost Increase factor. This further complicates the comparison between costs in using the 50% Repair vs Replacement Decision-Making-Protocol.

If you start with the wrong baseline as was done here, you will end up with the wrong answer.

**D. FEMA improperly failed to include the allowance for asbestos removal for 641.4 SF in the repair estimate.**

The "Repair cost" used by FEMA in the 50% Rule analysis is based upon the costs used in the initial 50% Repair vs. Replacement Analysis. A review of those costs reveals that the estimated repair costs are based upon the Insurance Company's assessment of the damages.

The repair cost was simply the use of the initial Insurance adjusters repair cost (which has the errors noted above). The final CEF indicates that there is a scope of repair work that includes "the removal of asbestos." While "demolition" is not included in the "Repair Cost", the cost **of the removal of <u>damaged</u> elements is included** in the 50% Rule "repair cost" numerator. [20]

Thus, the "repair cost" should be increased by the Part A cost of the scope of work for the removal of asbestos.

## VI. <u>REQUEST FOR ORAL ARGUMENT/HEARING</u>:

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[20] FEMA Guidance in the Public Assistance Program and Policy Guide FP 104-009-2 January 2016

The City of Hattiesburg, Mississippi respectfully requests that a hearing in connection with this arbitration proceeding be granted in accordance with the arbitration rules set forth in 44 CFR 206.209 (H) as a zoom hearing, or in the City of Hattiesburg, or in the City of New Orleans.

## VII. RELIEF REQUESTED:

The City of Hattiesburg, Mississippi RESPECTFULLY REQUESTS that this Honorable Panel determine that FEMA should reinstate the original commitment which it made on November 18, 2018 to the City of Hattiesburg that it can replace the disaster damaged Fire Station #2.

ALTERNATIVELY, AND ADDITIONALLY, the City of Hattiesburg, Mississippi RESPECTFULLY REQUESTS all the relief to which it is entitled in law and equity.

**MICHAEL G. GAFFNEY (La Bar #5868)**
CHRISTOPHER M. GAFFNEY (La Bar # 34290)
3015 19th Street
Metairie, LA 70002
Phone: 504-299-7169
Fax: 504-335-1915

CHARLES V. CUSIMANO (La Bar # 28858)
3015 19th Street
Metairie, LA 70002
ATTORNEYS FOR CITY OF HATTIESBURG,

Submitted this 31st day of December 2020.

# HATTIESBURG
# PW 11- FIRE STATION NO. 2
# REQUEST FOR ARBITRATION
# EXHIBIT LIST

1. FEMA First Appeal Determination dated November 2, 2020

2. FEMA Policy FP-104-009-4

3. Analysis of Damage and Construction Cost Estimate, Hattiesburg Fire Station No. 2, by Williams & Associates, PA

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**U. S. Department of Homeland Security**
Region IV
3005 Chamblee Tucker Road
Atlanta, Georgia 30341

FEMA

November 2, 2020

Mr. Gregory S. Michel, Executive Director
Mississippi Emergency Management Agency
1 MEMA Drive
Pearl, Mississippi 39208

Mr. Kermas Eaton, City Clerk
City of Hattiesburg
200 Forrest Street
Hattiesburg, Mississippi 39401

Reference: FEMA-4295-DR-MS
City of Hattiesburg
PA ID: 035-31020-00
First Appeal, Project Worksheet 11

Dear Mr. Michel and Mr. Eaton:

This letter is in response to a letter from the Mississippi Emergency Management Agency (Recipient) dated May 27, 2020, which transmitted the referenced first appeal on behalf of the City of Hattiesburg (Subrecipient). The Subrecipient is appealing the U.S. Department of Homeland Security's Federal Emergency Management Agency's (FEMA) denial of funding in the amount of $1,928,376.00 for the replacement of Fire Station No. 2. The appeal is denied as explained below and in the enclosed analysis.

The Subrecipient has not demonstrated that FEMA erred in recalculating repair versus replacement upon incorporating significant changes to the Subrecipient's scope of work (SOW). Additionally, FEMA's repair estimate is compliant with applicable law, regulation and policy. Thus, the Subrecipient has not demonstrated that the Facility is eligible for replacement. This letter constitutes the official notification of this determination to the Subrecipient.

The Subrecipient may appeal this determination to the Assistant Administrator, Recovery Directorate, at FEMA Headquarters pursuant to Title 44 of the Code of Federal Regulations (44 C.F.R.) § 206.206, *Appeals*. If the Subrecipient elects to file a second appeal, the appeal must: 1) contain documented justification supporting Subrecipient's position, 2) specify the monetary figure in dispute, and 3) cite the provisions in Federal law, regulation, or policy with which the Subrecipient believes the initial action was inconsistent. A second appeal must be submitted to the Recipient by the Subrecipient within 60 days of the Subrecipient 's receipt of this letter. The Recipient's transmittal of that appeal, with recommendation, is required to be submitted to my office within 60 days of your receipt of the Subrecipient's letter. My office will transmit the second appeal to FEMA headquarters.

Alternatively, this determination may be eligible for arbitration by the Civilian Board of Contract Appeals (CBCA) under the arbitration rights set forth in section 423 of the Stafford Act, as amended by section 1219 of the Disaster Recovery Reform Act (DRRA), which was signed into law on October 5, 2018. To determine eligibility for arbitration, please review FEMA's

Arbitration Fact Sheet.[1] The CBCA regulations at 48 C.F.R. 6106.601 through -.613 provide the CBCA's rules of procedure for FEMA Section 423 arbitrations. Filing and procedural rules are available on the CBCA's website at www.cbca.gov. If you have any questions regarding the DRRA arbitration process, please contact: Ms. Saidat Thomas, Region IV Public Assistance Branch Chief.

If the Subrecipient elects to not submit a second appeal request or request for arbitration within 60 days of the Subrecipient's receipt of this letter, this decision is the final agency determination on the matter, and the Subrecipient will no longer be able to appeal or arbitrate the matter.

If you have any questions or need additional information, please contact Mr. Terry L. Quarles, CEM, Director, Recovery Division, at (770) 220-5300.

Sincerely,

Gracia B. Szczech
Regional Administrator

Enclosures:
Appeal Analysis: FEMA-4295-DR-MS, *City of Hattiesburg*, Project Worksheet 11
Administrative Record Index

[1] *Public Assistance Appeals & Arbitration under the Disaster Recovery Reform Act*, available at https://www.fema.gov/sites/default/files/2020-07/fema_DRRA-1219-public-assistance-arbitration-right_fact-sheet.pdf

**FIRST APPEAL ANALYSIS**
**FEMA-4295-DR-MS**
**City of Hattiesburg, PA ID: 035-31020-00**
**Project Worksheet 11 – Repair vs. Replacement, Codes and Standards**

## Background

During the incident period of January 20-21, 2017, Forrest County, Mississippi experienced severe storms, tornadoes, sustained high winds, and prolonged periods of rainfall, resulting in widespread flooding, wind damage, power outages, and transportation difficulties throughout the area. The event was declared a major disaster (FEMA-4295-DR-MS) on January 25, 2017.

The extreme wind/rain conditions directly impacted the City of Hattiesburg (Subrecipient), with a tornado damaging Fire Station #2 (Facility). After the event, the Subrecipient's insurer performed multiple inspections[2] of the Facility beginning on January 23, 2017, and estimated it would cost $227,884.16 to repair based on a detailed damage assessment and cost estimate prepared by Team One Adjusting Services, LLC.[3] This amount exceeded the $225,000.00 limit of the Subrecipient's insurance policy; therefore, the insurer declared the facility "damaged beyond repair"[4] and capped the payout at the policy limit.

The Subrecipient retained Neel-Schaffer, Inc. and Perez APC to assess the damage. Neel-Schaffer visited the site on January 27, 2017, and determined that the Facility was structurally sound and estimated the repair would cost $150,000.00 to 175,000.00.[5] Perez APC visited the site on February 8, 2017, and estimated it would cost $384,000.00 to repair and $640,000.00 to replace the Facility based on $120.00 per square foot for repair and $200.00 per square foot for replacement.[6] FEMA initially prepared Project Worksheet (PW) 11 with a repair cost of $263,295.00 using a Cost Estimating Format (CEF) based on the damage assessment and repair estimate provided by the Subrecipient's insurer and including $6,147.07 for Direct Administrative Costs (DAC). FEMA obligated PW 11 for $44,712.07 on April 28, 2017, after deducting $225,000.00 for applicable insurance.[7]

Thereafter, the Subrecipient retained Williams and Associates who reviewed the three earlier estimates, and on May 26, 2017, provided a report with a new repair budget estimate of $404,850.00.[8] Upon estimating replacement cost at $640,000.00, the contractor concluded that

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[2] Letter from General Adjuster, Western World, to City of Hattiesburg, at 1 (Jan. 1, 2018).
[3] Damage Assessment and Repair Cost Estimate, Team One Adjusting Services, LLC, to Western World Insurance Companies (Jan. 23, 2017).
[4] The phrase "damaged beyond repair" means a loss exceeding the maximum amount a policy will pay. It is not a judgment on whether the building could be repaired. The adjuster did prepare an estimate to repair the facility, and had the insurance policy limit exceeded the estimate, the insurance company would have capped payout at the estimated repair amount.
[5] *Preliminary Tornado Damage Assessment: Fire Station #2*, by Neel-Schaffer, Inc., at 2 (Jan. 27, 2017).
[6] *Preliminary Damage/Construction Analysis: Fire Station Number 2*, by Perez APC, at 5 (Mar. 4, 2017).
[7] Project Worksheet 11, City of Hattiesburg, Version 0 (Apr. 28, 2017).
[8] *Analysis of Damage and Construction Cost Estimate Hattiesburg Fire Station #2*, Williams and Associates, at 8 (May 26, 2017).

the Facility was eligible for replacement as its new estimate for repair cost exceeded 50 percent of its estimated replacement cost. The Subrecipient forwarded the report to the Recipient on June 26, 2017, requesting that the Facility be determined eligible for replacement under the 50 Percent Rule.[9] The Recipient forwarded the request to FEMA on October 30, 2017, recommending approval.[10] FEMA considered the Subrecipient's request but found that the new estimates included costs not allowed in the calculation of the percentage of repair versus replacement cost under the 50 Percent Rule.[11] Therefore, PW 11 was not revised at the time.

On August 27, 2018, the Subrecipient requested FEMA fund the replacement of the Facility based on an adjusted repair cost of $538,650.37 developed by Williams and Associates.[12] FEMA policy allows the use a cost estimate prepared by the Subrecipient; however, the cost estimate must be based on unit costs for each component of the scope of work (SOW) and not a lump sum amount. Additionally, the estimate must contain a level of detail sufficient for FEMA to validate that all components correspond with the agreed-upon SOW.[13] The cost estimate submitted by the Subrecipient was based on a 2-page summary of the 31-page insurance adjusters estimate with various lump sum revisions and additions, and lacked details as to how the revisions were determined.[14] Furthermore, the repair versus replacement calculation included costs not allowed under the 50 Percent Rule.[15] FEMA did not concur with the Subrecipient's updated repair versus replacement assessment, but did develop a new replacement cost estimate of $522,607.00 using RS Means cost data. Based on this estimate, FEMA found the facility eligible for replacement. Accordingly, PW 11 was revised on January 8, 2019, to increase the eligible amount to $304,024.07.[16]

The Subrecipient first appealed PW 11 on March 6, 2019, claiming the replacement SOW considered by FEMA did not include increased square footage required by current codes and standards. The Subrecipient requested an additional $1,791,551.52 based on a 7,568 square foot replacement facility costing $2,234,941.00.[17] The appeal amount also included $103,331.00 for project management. The Recipient forwarded the appeal to FEMA on March 9, 2019, recommending approval.[18] Later, the Subrecipient responded to a subsequent Request for Information (RFI) from FEMA, conceding that the facility only needed to be 5,929 square feet to comply with relevant codes and standards rather than the claimed 7,568 square feet.[19] FEMA reviewed the appeal and concluded that a portion of the appealed codes and standards were not accounted for in the approved CEF and, on October 29, 2019, responded that it would prepare

[9] Letter from City Clerk, City of Hattiesburg, to Executive Director, Mississippi Emergency Management Agency (MEMA) (June 26, 2017).
[10] Letter from Governor's Authorized Representative, MEMA, to Regional Administrator, FEMA Region IV (Oct. 30, 2017).
[11] Email from FEMA Region IV, to MEMA (Apr. 3, 2018).
[12] Letter from City Clerk, City of Hattiesburg, to Recovery Office Director, MEMA (Aug. 27, 2018).
[13] *Public Assistance Program and Policy Guide*, FP 104-009-2, at 132 (Jan. 1, 2016) [hereinafter *PAPPG*].
[14] Letter from City Clerk, City of Hattiesburg, to Recovery Office Director, MEMA, Attached 2-page Cost Estimate (Aug. 27, 2018).
[15] *PAPPG*, at 132.
[16] Project Worksheet 11, City of Hattiesburg, Version 1 (Jan. 8, 2019) [hereinafter *PW 11, Version 1*].
[17] Letter from City Clerk, City of Hattiesburg, to Executive Director, MEMA (Mar. 6, 2019) (see attached Cost Estimate by Williams & Associates, at 4).
[18] Letter from Executive Director, MEMA, to Regional Director, FEMA Region IV (Mar. 9, 2019).
[19] Letter from Williams & Associates, to Director, Recovery Division, FEMA Region IV, at 1 (July 12, 2019).

new repair and replacement CEFs to account for applicable codes and standards upgrades and then recalculate repair versus replacement to determine if the Facility was still eligible for replacement.[20]

With the new FEMA CEFs, estimated repair cost was increased from $263,295.00 to $303,565.00 to include allowances for escalation, Americans with Disabilities Act (ADA) compliance, and asbestos removal. FEMA estimated the replacement facility would cost $812,762.00.[21] Repair cost was determined to be 35.5 percent of replacement cost based on cost for repair and replacement only pursuant to the 50 Percent Rule.[22] Accordingly, FEMA issued a Determination Memorandum (DM) on January 6, 2020, informing the Subrecipient that replacement was no longer eligible, and PW 11 would be rewritten to reimburse repairs rather than replacement.[23]

*First Appeal*

The Subrecipient appealed FEMA's decision to reduce reimbursable costs to repairs in a letter to the Recipient on March 3, 2020,[24] requesting FEMA grant an additional $1,928,376.00[25] for the full replacement of the Facility. The Subrecipient presented the following arguments in support of its appeal:

1. "FEMA wrongly reconsidered its prior commitment to the [Subrecipient] that the damaged facility could be replaced. The 50% Repair vs. Replacement Rule is a decision-making protocol for FEMA to make a determination as to whether a disaster damaged facility should be either repaired or replaced. . . It is not a continuing tool for determining the actual amount of FEMA Public Assistance Funding for a restoration project."[26]
2. The repair cost estimate used by FEMA to reassess the feasibility of repair versus replacement:
    a. "…failed to include in the repair cost, the codes and standards which are applicable to the disaster damaged elements";[27]
    b. "…improperly used the Insurance Company cost amounts as the basis for the repair costs instead of the RS Means cost amounts which were used in the Replacement Model";[28] and

[20] Letter from Regional Administrator, FEMA Region IV, to Executive Director, MEMA, and City Clerk, City of Hattiesburg (Oct. 29, 2019).
[21] Determination Letter and Memorandum from Branch Chief, Public Assistance Branch, FEMA Region IV, to Executive Director, MEMA, and City Clerk, City of Hattiesburg, at 4 (Jan. 7, 2020) [hereinafter DM].
[22] Certain costs such as site work, contents and soft cost are not used in the calculation pursuant to *PAPPG*, at 97. FEMA calculations used $203,604.18 for repair and $572,728.31 for replacement.
[23] *DM*, at 4.
[24] Subrecipient First Appeal Letter from City Clerk, City of Hattiesburg, to Executive Director, MEMA (Mar. 3, 2020) [hereinafter *First Appeal*].
[25] $2,231,941.00 for a 7,568 square foot facility less $303,565.00 repair cost allowed in FEMA's Determination Memorandum.
[26] *First Appeal*, at 7.
[27] *Id.*, at 10.
[28] *Id.*, at 11.

c. "...failed to include the allowance for asbestos removal for 641.4 SF in the repair estimate."[29]

3. The replacement cost estimate used by FEMA to reassess the feasibility of repair versus replacement:
   a. "...used the [Subrecipient's] proposed footprint plans prepared during the design development phase to determine the cost of the replacement facility. This is incorrect. . . the 50% Rule is based upon estimates at the time of the decision-making protocol."[30]
   b. "...used the proposed footprint plans to determine the cost of the replacement facility. The "Replacement cost" is the cost of replacing the facility on the basis of its pre-disaster design (size and capacity) and function in accordance with applicable standards."[31]

The Recipient forwarded the Subrecipient's appeal to FEMA by letter dated May 27, 2020, recommending approval and adding that codes and standards that apply to replacement also apply to repair. Consequently, the Recipient concludes that repair is not feasible, and replacement is required.[32]

**Discussion**

The Robert T. Stafford Disaster Relief and Emergency Assistance Act § 406(e)(1) allows FEMA to reimburse eligible applicants for the cost of repairing, reconstructing, or replacing a facility on the basis of the design of the facility as it existed immediately prior to the major disaster and in conformity with current applicable codes, specifications, and standards. According to Title 44 of the Code of Federal Regulations (44 C.F.R.) § 206.226(f)(1), "[a] facility is considered repairable when disaster damages do not exceed 50 percent of the cost of replacing a facility to its predisaster condition, and it is feasible to repair the facility so that it can perform the function for which it was being used as well as it did immediately prior to the disaster."[33] This regulation is often referred to as the 50 Percent Rule. The costs associated with codes and standards upgrades are to be included when calculating the percentage of the eligible repair cost with respect to the replacement cost.[34]

*Updated Repair Versus Replacement Calculation*

The Subrecipient claims that the 50 Percent Rule "is a decision-making protocol for FEMA to make a determination as to whether a disaster damaged facility should be either repaired or replaced" and that it "is not a continuing tool for determining the actual amount of FEMA Public Assistance Funding for a restoration project." The Subrecipient also states "[i]t is self-evident that these estimates and the resulting actual costs will change as the restoration project proceeds. However, there is no authority to revisit the decision-making protocol as the restoration

[29] *Id.*, at 12.
[30] *Id.*, at 12-13.
[31] *Id.*, at 13.
[32] Recipient First Appeal Letter from Executive Director, Mississippi Emergency Management Agency, to Regional Administrator, FEMA Region IV (May 27, 2020).
[33] 44 C.F.R. § 206.226(f)(1).
[34] *PAPPG*, at 96-97.

proceeds."[35] The Subrecipient argues that once FEMA determines that replacement is eligible, the basis for eligibility can never be revisited, even when the SOW is significantly changed, and argues that the actual replacement cost is eligible without regard to the approved SOW.[36] Consequently, the Subrecipient argues that FEMA incorrectly used the proposed building footprint to evaluate the eligibility of replacement versus repair rather than the predisaster footprint used in the initial eligibility determination.

FEMA obligated PW 11 on January 8, 2019, with an approved SOW for the replacement of a 3,207 square foot facility at an estimated cost of $522,607.00.[37] Consequently, the final eligible amount of PW 11 would be the actual documented cost of the completed 3,207 square foot facility.[38] Pursuant to a request from the Subrecipient, FEMA later adjusted the replacement SOW to increase the proposed replacement facility's size to 5,929 square feet in accordance with applicable codes and standards. With this request, the Subrecipient identified an error in FEMA's initial repair versus replacement determination (i.e., the exclusion of applicable codes and standards upgrades). As a result, FEMA was required to reassess the repair versus replacement costs and issue an updated determination in conformance to the eligible SOW.

In any instance where FEMA approves a change to a project's SOW due to previous errors or omissions it must ensure that the newly identified costs are reasonable and necessary.[39] Here, the corresponding increase to both repair and replacement costs necessitated reconsideration of FEMA's initial repair versus replacement decision that was calculated with inaccurate information. The *Public Assistance Program and Policy Guide* requires FEMA review all SOW changes for eligibility;[40] in this instance, the eligibility of repair versus replacement was affected by the adjusted SOW and necessitated reevaluation. FEMA policy does not prohibit the recalculation of repair versus replacement in any instance. The Subrecipient has not demonstrated that FEMA's reconsideration of the eligible costs was inappropriate or in error.

*Adjusted Repair Costs*

The Subrecipient claims that the repair costs used by FEMA did not include costs related to codes and standards compliance for the damaged elements and that, if FEMA had incorporated these changes, the Facility would need to be doubled in size.[41] Pursuant to the International Existing Building Code (IBEC), "[f]or damage less than substantial structural damage, repairs shall be allowed that restore the building to its predamage state." [42] Substantial structural damage (SSD) is defined in terms of capacity loss, as explained in IBEC Section 202, and requires evaluation and/or retrofit of certain structural elements by a registered design professional to establish whether the damaged building, if repaired to its pre-damage state, would comply with the current codes.[43] The Subrecipient has not documented substantial structural

[35] *First Appeal*, at 7.
[36] *First Appeal*, at 9.
[37] *PW 11, Version 1.*
[38] 44 C.F.R. § 206.203(c)(1).
[39] *See PAPPG*, at 21-22.
[40] *Id.*, at 130.
[41] *First Appeal*, at 10.
[42] *International Existing Building Code*, Section 404.4, International Code Council (Nov. 2015).
[43] *Id.*, Section 404.2.1.

damage to the facility as defined by the IEBC. Even if substantial structural damage was present and upgrades were necessary, the extent of the upgrades would be limited to structurally-related elements and would not require any alterations to other aspects of the building.[44] Consequently, the Subrecipient's assertion that the repairs would trigger codes and standards requirements doubling the size of the building is not correct. FEMA did, however, provide an allowance in the repair costs for accessibility upgrades to travel paths pursuant to ADA standards.[45]

The Subrecipient also claims FEMA improperly used the insurance company's assessed repair cost as the basis for its repair estimate rather than using RS Means cost data. The detailed 31-page damage assessment and repair estimate prepared by Team One Adjusting Services and provided to FEMA by the Subrecipient satisfies FEMA's criteria for a cost estimate that can be used in developing the project cost.[46] Therefore, FEMA acted within policy guidelines in utilizing Team One Adjusting Services' estimate. That FEMA used RS Means cost data when estimating the replacement and the insurance company repair cost estimate has no impact on the results considering that both cost estimates are reasonable and acceptable for use per FEMA policy.[47]

Lastly, the Subrecipient claims FEMA failed to include an allowance for asbestos removal in the repair estimate. This is not correct; FEMA's repair estimate includes a cost for removal and replacement of 641.4 square feet of floor tile as well as an additional allowance of $5,657.67 for asbestos removal.[48]

**Conclusion**

The Subrecipient has not demonstrated that FEMA erred in recalculating repair versus replacement upon incorporating significant changes to the SOW. Additionally, FEMA's repair estimate is compliant with applicable law, regulation and policy. Thus, the Subrecipient has not demonstrated that the Facility is eligible for replacement and the appeal is denied.

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[44] *Id.*, Section 502.3.
[45] *PAPPG*, at 92.
[46] *PAPPG*, at 132.
[47] *Id.*
[48] *DM*, at 4.

**ADMINISTRATIVE RECORD INDEX**
**FEMA-4295-DR-MS**
**City of Hattiesburg, PA ID: 035-31020-00**
**Project Worksheet 11**

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|---|---|---|---|---|---|---|---|
| 1 | 12 | 11 | 5/27/2020 | Letter | Recipient | FEMA | Recipient First Appeal Letter |
| 2 | 14 | 11 | 3/3/2020 | Letter | Subrecipient | Recipient | Recipient First Appeal Attachment 1 – Subrecipient First Appeal Letter |
| 3 | 82 | 11 | 1/7/2020 | Letter/ Memorandum | FEMA | Recipient Subrecipient | Subrecipient First Appeal Exhibit 1 – FEMA Determination Memorandum and Referenced Attachments |
| 4 | 11 | 11 | 11/18/2017 | Cost Estimate | FEMA | NA | Subrecipient First Appeal Exhibit 2 – FEMA Replacement CEF |
| 5 | 2 | 11 | 1/31/2018 | Letter | Western World | Subrecipient | Subrecipient First Appeal Exhibit 3 – Fire Station 2 Insurance Settlement |
| 6 | 14 | 11 | NA | Photographs | NA | NA | Subrecipient First Appeal Exhibit 4 – Damage Photos |
| 7 | 1 | NA | 3/30/2020 | Memorandum | FEMA | Regional Administrators | Attachment 2 – FEMA Headquarters Memo Re: Requests and Arbitration Deadlines |
| 8 | 5 | 11 | 3/14/2017 | Report | Perez | Subrecipient | Attachment 3 - Preliminary Damage/Construction Analysis: Fire Station No. 2 |
| 9 | 28 | 11 | 1/23/2017 | Report | Team One Adjusting Services, LLC | Western World Insurance Companies | Attachment 4 – Damage Assessment and Repair Cost – Fire Station No. 2 |
| 10 | 2 | 11 | 1/31/2018 | Letter | Western World | Subrecipient | Attachment 5 – Fire Station 2 Insurance Settlement |

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| 11 | 9 | 11 | 4/18/2017 | Cost Estimate | FEMA | NA | Attachment 6 – FEMA Replacement CEF |
| 12 | 2 | 11 | 10/9/2018 | Letter | Recipient | FEMA | Attachment 7 – Request for SOW Amendment and Replacement under 50 Percent Rule |
| 13 | 18 | 11 | 11/18/2018 | Memorandum/ Cost Estimate | FEMA | NA | Attachment 8 – 50 Percent Rule Evaluation and Repair CEF |
| 14 | 4 | 11 | 7/12/2019 | Letter | Williams & Associates | FEMA | Attachment 9 – Codes and Standards Supporting Upgrade to 5929 SF Replacement Facility |
| 15 | 1 | 11 | 1/7/2020 | Cost Estimate | FEMA | 1/7/2020 | Attachment 10 – Replacement Cost Estimate for 5929 SF Replacement Facility Used in DM 50 Percent Rule Evaluation |
| 16 | 21 | 11 | 8/28/18 | Letter/ Cost Estimate | Subrecipient | FEMA | Attachment 11 – Request for Time Extension and Replacement of Facility based on Revised Repair Estimate |
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| 18 | 7 | 11 | 10/29/2019 | Letter | FEMA | Recipient Subrecipient | First Appeal Response |
| 19 | 1 | 11 | 7/12/2019 | Letter | Subrecipient | FEMA | First Appeal RFI Response – Codes and Standards Applied Uniformly |
| 20 | 2 | 11 | 7/12/2019 | Letter | Subrecipient | Recipient | First Appeal RFI Response |
| 21 | 5 | 11 | 7/12/2019 | Letter | Williams & Associates | FEMA | First Appeal RFI Response - Codes and Standards Supporting Upgrade to 5929 SF Replacement Facility |

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| 22 | 1 | 11 | NA | Drawing | Williams & Associates | NA | First Appeal RFI Response – Floor Plan Supporting Codes and Standards Requirements for 5929 SF Facility |
| 23 | 1 | 11 | 7/12/2019 | Letter | Mississippi State Rating Bureau | Subrecipient | First Appeal RFI Response – Fire Station Replacement Recommendations |
| 24 | 3 | 11 | 6/14/2019 | Letter | FEMA | Recipient Subrecipient | First Appeal RFI |
| 25 | 1 | 11 | 3/9/19 | Letter | Recipient | FEMA | Recipient First Appeal |
| 26 | 2 | 11 | 3/6/2019 | Letter | Subrecipient | Recipient | Subrecipient First Appeal Requesting Amendment to SOW to Upgrade Facility from 3,207 SF to 7,598 SF Conforming to Codes and Standards |
| 27 | 18 | 11 | NA | Cost Estimate | Williams & Associates | NA | Attachment – Cost Estimate by Williams & Associates for 7,568 SF Facility |
| 28 | 3 | 11 | 3/11/2019 | Email | Subrecipient | Recipient | Attachment – Email Transmittal and Statement of Appeal Amount |
| 29 | 4 | 11 | 1/8/2019 | Subgrant Application | FEMA | NA | Project Worksheet 00011, City of Hattiesburg Fire Station 2, Version 1 |
| 30 | 19 | 11 | 11/18/2018 | Cost Estimate | FEMA | NA | Fire Station #2 Repair Vs. Replace Cost Estimate |
| 31 | 2 | 11 | 10/9/2018 | Letter | Recipient | FEMA | Request to Revise SOW and Cost for Repair, and Fund Replacement |
| 32 | 1 | 11 | 9/19/2018 | PW Amendment | Recipient | FEMA | Attachment – Proposed PW Amendment |
| 33 | 1 | 11 | 8/27/2018 | Letter | Subrecipient | Recipient | Request for PW 11 SOW and Cost Change |

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| 34 | 1 | 11 | 8/28/2018 | Letter | Subrecipient | Recipient | Request for PW 11 Time Extension |
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| 36 | 7 | 11 | 4/3/2018 | Email | FEMA | Recipient | Request for Calculation and Information Supporting 50 Percent Rule Request. |
| 37 | 2 | 11 | 1/31/2018 | Letter | Western World | Subrecipient | Fire Station 2 Insurance Settlement |
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| 39 | 1 | 11 | 6/26/2017 | Letter | Subrecipient | Recipient | 50 Percent Rule Request |
| 40 | 33 | 11 | 5/26/2017 | Report | Williams & Associates | Subrecipient | Attachment - Analysis of Damage and Construction Cost Estimate Hattiesburg Fire Station #2 |
| 41 | 14 | 11 | 4/28/2017 | Subgrant Application | FEMA | NA | Project Worksheet 00011, City of Hattiesburg Fire Station 2, Version 0 |
| 42 | 9 | 11 | 4/18/2017 | Cost Estimate | FEMA | NA | CEF for Repair of City of Hattiesburg Fire Station 2 |
| 43 | 6 | 11 | 3/4/2017 | Report | Perez APC | Subrecipient | Preliminary Damage/Construction Analysis: Fire Station Number 2 |
| 44 | 4 | 11 | 1/27/2017 | Report | Neel-Schaffer, Inc. | Subrecipient | Preliminary Tornado Damage Assessment: Fire Station #2 |
| 45 | 31 | 11 | 1/23/2017 | Report | Team One Adjusting Services, LLC | Western World Insurance Companies | Damage Assessment and Repair Cost Estimate |
| **End of Record** | | | | | | | |

FEMA

# Public Assistance Required Minimum Standards

## FEMA Recovery Policy FP-104-009-4

Published on September 30, 2016 (Superseded on April 1, 2017)



## BACKGROUND

FEMA's Public Assistance program will generally require the integration and use of the hazard-resistant provisions of the International Code Council's (ICC) International Building Code (IBC), the International Existing Building Code (IEBC), and/or the International Residential Code (IRC) as a minimum design standard for all eligible building restoration projects where the design standard is triggered.

## PURPOSE

The purpose of the policy is to establish minimum standards for Public Assistance projects to promote resiliency and achieve risk reduction under the authority of the Stafford Act §§ 323 and 406(e) (42 U.S.C. §§ 5165a and 5172) and 44 CFR § 206, subpart M.

## PRINCIPLES

Integration of nationally recognized consensus-based building codes and standards into Public Assistance activities will:

A. Protect Lives and Property: Use of nationally recognized consensus-based building codes and standards will further FEMA's core mission to protect lives and property by increasing the safety and risk reduction capabilities of buildings that receive Public Assistance funding.
B. Support the Efficient Use of Federal Dollars: Recipients and sub-recipients using nationally recognized consensus-based building codes and standards for federally funded projects will reduce vulnerability to new construction and repaired and retrofitted buildings, thus reducing the need for future Federal disaster recovery grants and other assistance.
C. Increase Effectiveness: Consideration of standards-based approaches are necessary to increase the predictability of authorized FEMA activities, enhance feasibility and effectiveness requirements, as well as advance the sustainability of FEMA-funded activities.

## REQUIREMENTS

### A. MINIMUM STANDARDS FOR PUBLIC ASSISTANCE-FUNDED BUILDINGS

Outcome: As a condition of assistance, buildings eligible for repair, replacement, or construction located in hazard-prone areas will use, at a minimum, the hazard-resistant standards referenced in the most recent edition of the model building code (IBC, IEBC, and IRC) as of the disaster declaration date.

1. Public Assistance will use the hazard-resistant design standards in or referenced in the most recent IBC, IEBC, and/or IRC as a minimum design standards for all Public Assistance funded buildings in hazard-prone areas when the design standard is triggered.[1]
   a. Applicability
      i. This policy applies to all Public Assistance funded repair, replacement, or construction[2] of buildings in tornado, wind, seismic, and flood-prone areas, the location of which is identified in the IBC, IEBC, or IRC, regardless of the type of incident that caused the damage.
      ii. This policy applies when a building: is Substantially Damaged, suffers Substantial Structural Damage, and/or eligible for Replacement in accordance with the 44 CFR part 206.226(f).
         1. Substantial Damage: Damage of any origin sustained by a structure whereby the cost of restoring the structure to its before-damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred.
         2. Substantial Structural Damage: Significant damage to the vertical elements of the lateral force-resisting system and/or the vertical gravity load-carrying components in accordance with the IBC or IEBC.
         3. Replacement: Disaster-related damage exceeds 50% of the cost to replace a facility to its pre-disaster condition.
      iii. The determination of whether a standard is triggered may be made by the appropriate building official or inspector, where applicable, or by the recipient's or subrecipient's registered design professional or other appropriate and qualified individual. FEMA will generally accept this determination, but may review the determination to ensure it was made consistent with the standard.
      iv. This policy applies to all major disasters declared after the date of publication.
   b. Eligible costs
      i. Costs associated with implementing these standards are eligible costs under the Public Assistance Program at the cost share for the disaster.
      ii. These standards must apply to the type of repair or restoration required; be appropriate to the pre-disaster use of the facility; and be reasonable.
      iii. Funding for capped projects (Improved, Alternate, and Alternative Procedure projects) will be capped based on the estimated amount to restore the building to its pre-disaster design and function and any codes or standards, including those established by this policy. The capped amount will not be adjusted to include additional costs for codes and standards that apply to the new project.



[1] FEMA has determined that these codes represent the minimum adequate standards which are generally necessary to protect the federal investment of Public Assistance funding. Stafford Act § 323, 42 U.S.C. § 5165a, § 406(e), 42 U.S.C. § 5172, and 44 CFR § 206.400.
[2] This includes improved and alternate projects. Per 44 CFR § 206.203(d), funding for improved and alternate projects is capped at the cost to restore the facility to its pre-disaster design and function in accordance with codes and standards, including the required codes and standards referenced in this section, that would otherwise be applicable to the facility if rebuilt as it existed.

c. Standards
   i. When triggered by the eligible repair, replacement, or construction, disaster-specific requirements include, but are not limited to, the following:[3]
      1. In areas where tornado shelter design wind speeds are 250 miles per hour (mph), a storm shelter or safe room designed to the ICC 500, *Standard for the Design and Construction of Storm Shelters*. The 2015 IBC requirement is specific to elementary and secondary schools with an occupant load of 50 or more, emergency operation centers, 911 call stations, fire stations, rescue stations, ambulance stations and police stations.
      2. For wind-resistant requirements, applicable wind-resistant design and construction standards contained in the IBC, IEBC, or IRC and its referenced standards [i.e., American Society of Civil Engineers (ASCE), Structural Engineering Institutes (SEI) 7, etc.].
      3. For seismic-resistant requirements, applicable seismic resistant design and construction standards contained in the IBC, IEBC, or IRC and its referenced standards (i.e., ASCE/SEI 7 and 41).[4]
      4. For flood-resistant requirements, applicable flood-resistant design and construction standards contained in the IBC, IEBC, or IRC and its referenced standards (i.e., ASCE/SEI 7 and 24).

d. Implementation Requirements
   i. FEMA will generally require that the subrecipient incorporate the standards referenced in this policy in the planning and design of eligible repair, replacement, or construction of the eligible building even if these standards exceed local standards or in instances where communities have not adopted building standards. FEMA will generally accept the determination of the local building official, registered design professional, or other appropriate and qualified individual to determine how the IBC, IEBC, or IRC standards apply to a specific project. If the IBC, IEBC, or IRC have been adopted under another name (for example California Building Code), and the local building official, registered design professional, or other appropriate and qualified individual have determined that the code meets the hazard-resistant provisions in the model codes, that code will meet the requirement of this policy.
   ii. FEMA may deviate from this policy in circumstances where utilization of the standards would create an extraordinary burden on the subrecipient or would otherwise be inappropriate for the facility.
   iii. Failure to incorporate these minimum standards or their equivalent in the planning and design of eligible repair, replacement, or construction, if required, may result in denial or de-obligation of FEMA funding for the facility. Therefore, the subrecipient should work with its local building official,

[3] See http://www.fema.gov/building-code-resources for additional guidance on hazard-specific standard requirements.
[4] These seismic-resistant requirements are also mandated by Executive Order 13717, Establishing a Federal Earthquake Risk Management Standard.

registered design professional, or other appropriate and qualified individual to ensure compliance with any building standards and requirements.

iv. If local codes or standards require a stricter hazard-resistant upgrade than those required by the IBC, IEBC, or IRC or an upgrade that is not related to reducing disaster risk, FEMA will determine the eligibility of the costs to comply with the local standards based on 44 CFR 206.226(d) and related policy.

e. Verification Requirements

i. Upon completion of the project, the subrecipient must provide proof of compliance.[5] Acceptable forms of proof include, but are not limited to, written certification by a registered design professional that the hazard-resistant design elements comply with IBC, IEBC, or IRC requirements or a valid certificate of occupancy from the local building department that supports that the project was constructed or restored as designed. Non-compliance will result in denial or de-obligation of PA funding for the facility.

2. Additional information

a. Eligible building projects involving substantial improvement or new construction in flood hazard areas must meet the floodproofing or elevation requirements as described in 44 CFR § 9.11(d), or the IBC, IEBC, or IRC, whichever is higher.

b. When evaluating whether a building is eligible for replacement under 44 CFR § 206.226(f), upgrades to meet the IBC, IEBC, or IRC codes will be treated in the same manner as locally adopted codes and standards for the purposes of calculating repair and replacement costs. For example, any whole building upgrade, such as elevation or floodproofing, of a building will be included in the replacement cost calculation only.



Alex Amparo
Assistant Administrator for Recovery

9-30-16
Date

[5] Stafford Act § 323, 42 U.S.C. § 5165a, and 44 CFR § 206.402

FEMA

# ADDITIONAL INFORMATION

## REVIEW CYCLE

FEMA Recovery Policy FP-104-009-4 Public Assistance Required Minimum Standards will be incorporated into Chapter 2:VII.C.2 Public Assistance Program and Policy Guide, which will be reviewed, revised, and reissued on an annual basis.

## AUTHORITIES

A. Stafford Act § 323, 42 U.S.C. § 5165a and § 406(e), 42 U.S.C. § 5172
B. Executive Order 13717, *Establishing a Federal Earthquake Risk Management Standard.*
C. Code of Federal Regulations 44 CFR §§ 206.400 – 206.402
D. Code of Federal Regulations 44 CFR § 206.226(d)

## REFERENCES

A. *Public Assistance Program and Policy Guide. FP 104-009-2. January 2016.*
B. *Disaster Risk Reduction Minimum Codes and Standards*, FEMA Policy 204-078-2 (September 6, 2016)



## DEFINITIONS

**Building**[6]: Any structure used or intended for supporting or sheltering any use or occupancy.

**Certificate of Occupancy:** A document issued by a local government agency or building department certifying a building's compliance with applicable zoning requirements, building codes and other laws, and indicating it to be in a condition suitable for occupancy.

**International Building Code:** A model building code developed by the International Code Council.

**International Code Council:** A non-profit organization dedicated to developing a single set of comprehensive and coordinated national model construction codes.

**Registered Design Professional:** An individual who is registered or licensed to practice their respective design profession as defined by the statutory requirements of the professional registration laws of the state or jurisdiction in which the project is to be constructed.

**Substantial Damage:** Substantial Damage: Damage of any origin sustained by a structure whereby the cost of restoring the structure to its before-damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred.

[6] *2015 International Building Code, Chapter 2.*

**Substantial Structural Damage:** Significant damage to the vertical elements of the lateral force-resisting system and/or the vertical gravity load-carrying components in accordance with the IBC or IEBC.

## QUESTIONS

Direct questions to Christopher Logan, Acting Director, Public Assistance Division, Federal Emergency Management Agency, 500 C Street SW., Washington, DC 20472, 202-212-2340.

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# ANALYSIS OF DAMAGE AND CONSTRUCTION COST ESTIMATE
# HATTIESBURG FIRE STATION #2

**20 January 2017**
**Tornado Damage**

for
The City of Hattiesburg

by
Mark B. Williams, AIA, NCARB, LEED AP
Williams & Associates, PA

26 May 2017

**WILLIAMS & ASSOCIATES, PA**
architecture · interiors

250 Beauvoir Road, Suite 1B Biloxi,
MS 39531

26 May 2017

Mayor Johnny L. DuPree, Ph.D.
City of Hattiesburg
PO Box 1898
Hattiesburg, MS 39403-1898

Dear Mayor DuPree,

Williams & Associates, PA is pleased to submit the attached analysis for the tornado damage which occurred on 20 January 2017. This report provides a comprehensive view of the damages and evaluates the costs to repair and replace the building. Also included is a review of the existing FEMA estimates for the project and an analysis of the difference between that estimate and our estimate of repair for replacement costs.

Repair costs that exceed 50% of the replacement cost for a structure trigger the FEMA "50 Percent Rule". This rule allows for the full replacement of structures that have sustained this level of damage. In the event that this threshold is met, FEMA will require that you use insurance funds first, then FEMA will be responsible for the balance of the costs beyond those covered by insurance.

FEMA's estimated cost to repair damage expressed as a percentage of building replacement cost is 41% ($263,295.00 / $640,000); our estimated cost to repair expressed as a percentage of building replacement cost is 60% $384,000.00/ $640,000.00). Therefore, our cost estimate indicates that the 50% threshold has been met for the Hattiesburg Fire Station #2. It is therefore recommended, based on the FEMA criteria, that the existing Fire Station #2 be demolished and replaced.

Please review the attached report, FEMA PW, and other substantiating documentation to better understand why your insurance carrier should also consider support of this position.

We appreciate the time that you and your staff have spent with us through this process. Should you have any questions regarding this report, please do not hesitate to contact me at (228) 263-1025.

Sincerely,

Mark B. Williams, AIA, NCARB, LEED AP

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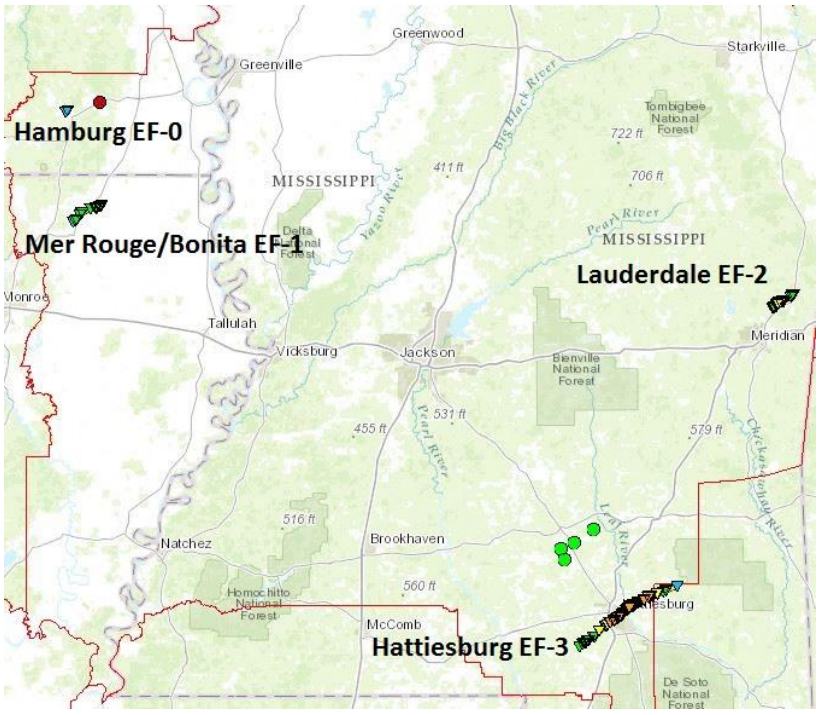
**EXECUTIVE SUMMARY**

When disaster damage exceeds 50 percent of the cost of replacing a facility to its pre-disaster condition, approved restorative work may include replacement of the facility.

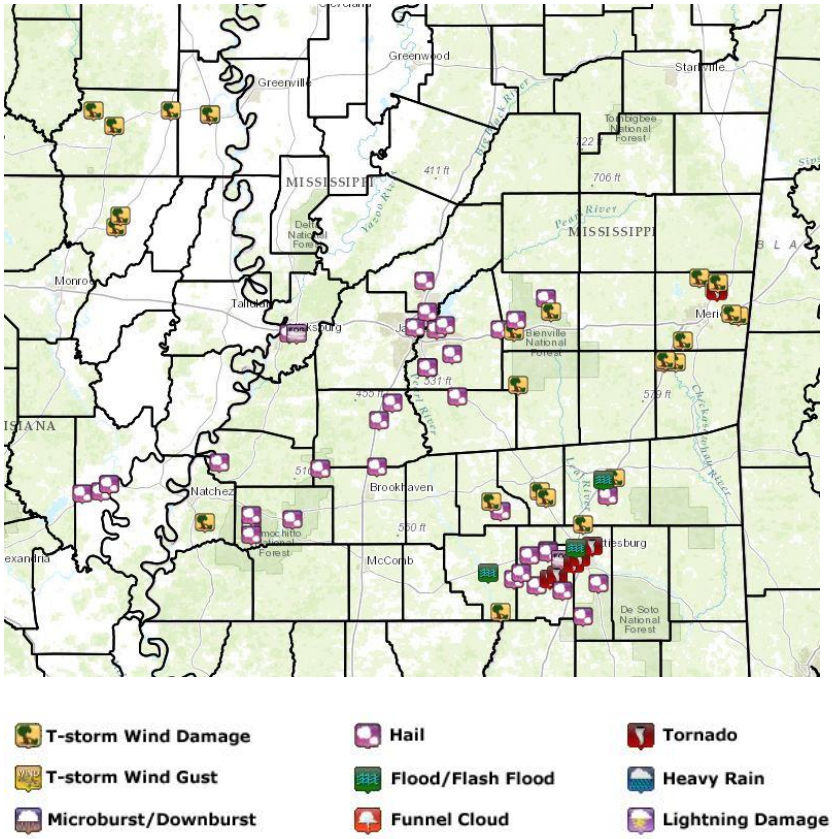
Two rounds of severe weather impacted the ArkLaMiss region - one beginning shortly after midnight on early Saturday morning and continuing through shortly before daybreak and a second beginning during the evening hours and continuing until just before midnight Saturday night. During the early morning event, areas south of I-20 in Mississippi were impacted. Most notably, an EF-3 tornado tracked through Lamar and Forrest counties, killing four people in Hattiesburg and injuring over 50 others. In addition, trees and powerlines were downed and large hail was reported in other areas across south Mississippi. Heavy rainfall resulted in flash flooding in parts of Forrest, Marion, Jones, and Jefferson counties. The evening event impacted a larger proportion of the area. An EF-2 tornado occurred in Lauderdale County near the Lauderdale community, injuring one. An EF-1 tornado occurred in Morehouse Parish tracking between Mer Rouge and Bonita. Also, a brief EF-0 tornado occurred near Hamburg in Ashley County. Wind damage was reported across parts of southeast Arkansas, southwest Mississippi, and east Mississippi. Meanwhile, large hail fell from central Louisiana through central and south Mississippi. Hail as large as 3.5" in diameter fell in Catahoula Parish.

| | |
|---|---|
| Rating: | EF-3 |
| Estimated Maximum Wind: | 145 mph |
| Fatalities/Injuries: | Deaths: 4/Injuries: 57 |
| Damage Path Length: | 31.3 miles |
| Maximum Path Width: | 1/2 mile |
| Approximate Start Point/Time: | 5 WNW Purvis/3:35 am |
| Approximate End Point/Time: | 5.5 NE Runnelstown/4:13 am |

**NOAA EVENT TRACK MAP**



**NOAA REPORT MAP**




**NOAA EF-3 TRACK MAP**

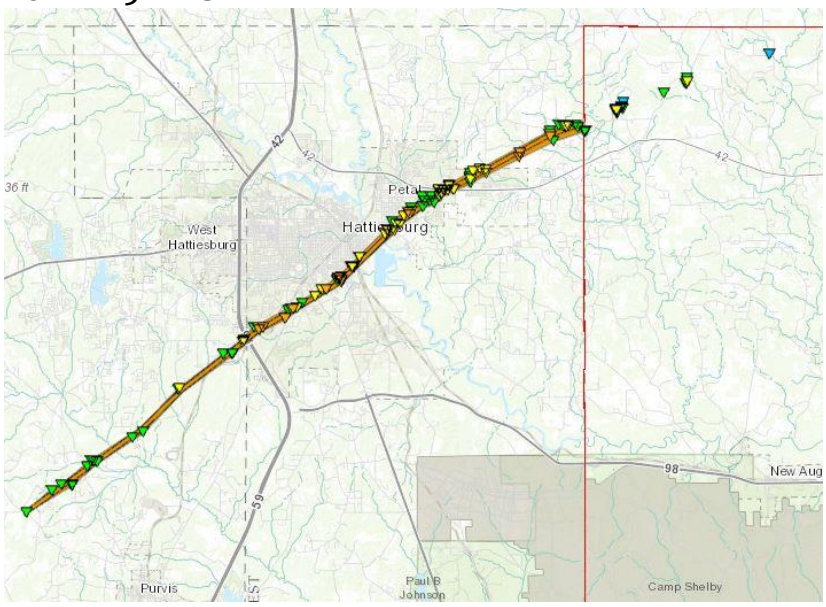


**Figure 1.**
South east elevation—engine bay doors blown in; canopy roof collapsed, facia and soffit loss/destroyed, cracked brick, roof loss structure damage

**Figure 2.**
Looking North east — damaged incoming electrical and communications service

**Figure 3.**
South east face — Bay doors blown in, Roof deck lifted, windows blown in

**Figure 4.**
South east face — Bay doors blown in, windows blown in, fire engine damaged

**Figure 5.**
East elevation—Bay doors blown in, roof removed, windows to living quarters blown in, unit heaters destroyed

**Figure 6.**
North and west elevation of engine bay walls — roof deck loss, door damage, glazing damage, fascia and trench drain blockage


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**Figure 10.**
Site— new exterior surrounding 6’-0” cyclone fence with apparatus vehicle gate total loss

**Figure 11.**
Site— new exterior surrounding 6’-0” cyclone fence with apparatus vehicle gate total loss

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Damaged gutter and downspouts, damaged parapets, flashings and counter flashings. Damaged windows. Damaged gas service.

**Figure 14.**
Typical roof decking puncture, wet and damaged roof decking, ceiling, mold infestation, damaged electrical and HVAC

**Figure 15.**
Typical roof decking puncture, wet and damaged roof decking, ceiling, mold infestation, damaged electrical and HVAC

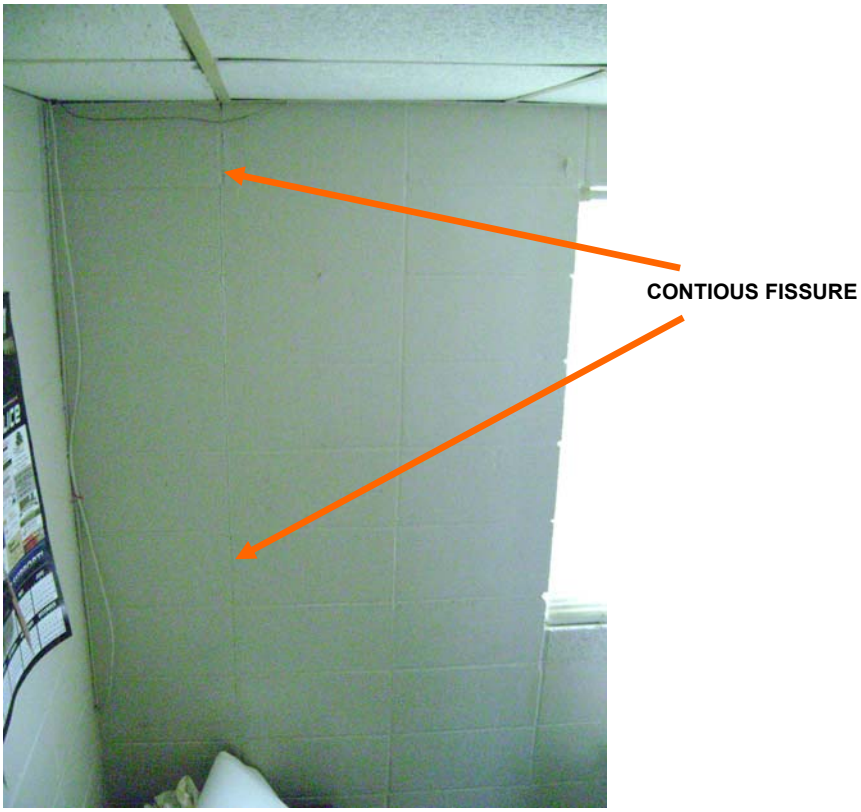


**Figure 16.**
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**Figure 22.**
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**Figure 23.**
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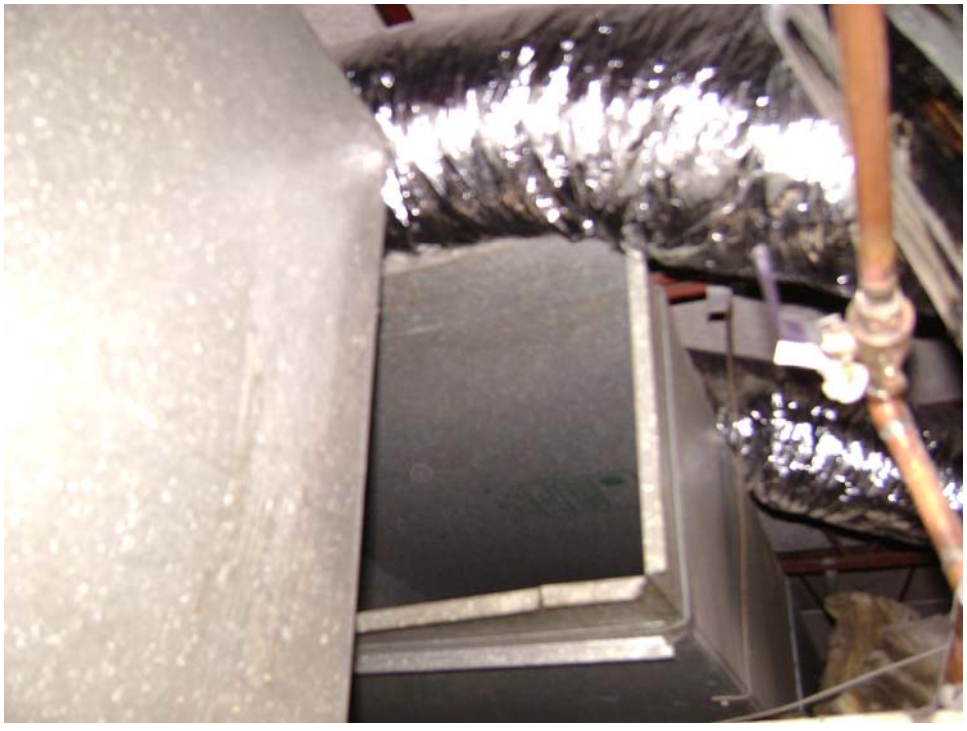

**Figure 24.**
Non code compliant return air


**Figure 25.**
Vent stack dislodged, water heater saturated with rain water during storm event


**Figure 26.**
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**Figure 27.**
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**Figure 28.**
Non fire rated windows breached during storm event

**SUMMARY DESCRIPTION**

Hattiesburg Fire Station #2 was hit by an EF-3 Tornado during the early hours on 20 January 2017. This station, an early 1970's concrete block structure was subject to the winds and accompanying large hail while in the direct line of an EF-3 tornado on January 21, 2017. No power was on or available here at the time of the inspection nor is on at the time of this writing.

The building faces east along Arledge Street street exposing the main truck bay doors to the brunt of the storm force winds gathering from the open area south and east. Roof - The roof shape is a flat, three level, built-up style with no overhang. The engine bay attained the greatest wind damage due to it being closest to the oncoming storm and the uprising wind from the south facing engine bay wall producing the uplift. This uprising wind created a Venturi effect over the engine bay (much like an airplane wing gains lift).

**DETAILED DESCRIPTION OF DAMAGES**

Once the bay doors were compromised, this internal pressure coupled with the Venturi effect caused the roof sheathing to lift and the attached structure, displacing the structure approximately ½" to the north. Subsequent winds of varying directions and velocities allowed the sheathing to break free from the structure at the engine bay. Once the sheathing began to release, additional tectum panels lost their integrity to remain intact as these panels are tongue and groove in design. The lower roof systems were breached by flying debris in numerous locations as well as their underlying tectum decking allowing water infiltration in many places. All insulation systems were subjected to water infiltration. The exterior walls did not meet the requirements of the prevailing 1967 SSBCC Code adopted by the City of Hattiesburg at the time of this facilities construction, and therefore contain no internal means of a continuous load path. The exterior walls do not have any reinforcement nor are they filled with concrete or grout. The exterior walls do not have overhangs and therefore provided no wind resistance. The lack of roof line breaks or overhangs promotes unimpeded wind speed and consequentially pressure areas during high winds along the leeward sides of the upper portions of the walls produced tremendous outward force. This force is evident in the cracked brick veneer along high stress points i.e.: the heads of openings, direction changes in the exterior walls, parapet walls, and height changes. The engine bay doors were breached allowing the internal pressure to build and assist the upward lifting winds to displace the engine bay roof. The windows and doors in the kitchen 108, dayroom 101 and corridor 109 all facing the engine bays were compromised leaving these spaces vulnerable to further wind/water damage. These windows are required to be fire glass, 45 minute rated, however were not. The doors are also required to be 45 minute rated. Due to the lack of any environmental conditioning and radiant solar heating, evidence of mold growth is present in the interstitial space. Mold testing and remediation will be required in all interstitial spaces. A mold test to determine the type of mold and further observations of these areas are required. All interior ceilings have been wetted due to water infiltration at roof loss locations as well. All interior walls have been wetted due to loss of power and air conditioning systems. The wall separating the engine bay and the living quarters is required to be a 1 hour separation and provide a continuous load path to the foundation. This fire station is an R-2 Occupancy requiring tenant separation between bunkrooms of ½ hour walls extended to the roof deck (presently non-compliant) and a ½ hour fire rated corridor walls extended to the roof deck (presently non-compliant). The fire station is not required to be sprinklered as it is an R2 Occupancy, Type 2B construction with an allowable area of 16,000 SF and 4 stories. Some of the wall surfaces have been wetted internally and on the face side (near the engine bay and directly below roof breaches). These walls will need to be investigated for mold growth, removed, replaced and refinished along with all adjacent finishes. Interior of said walls are subject to intense mold growth and a moisture test of these cavities is required. Remediation of discovered mold should follow FEMA guideline specifications.

The flooring in most areas appears to have been saturated for a period of time. Areas near the Kitchen 108 show signs of delamination. Asbestos testing is required to be performed of the 12x12 tile to determine the ACM content of this product. Abatement of any ACMs is the recommended plan of action. Millwork – The kitchen millwork has been saturated from the incoming water via broken windows into the engine bay. Replace all wetted millwork and kitchen appliances that show water saturation.

The engine bay roof structure was not attached to the engine bay walls, therefore, during the storm, the structure was displaced approximately ½" to the north. The tectum decking remained attached to the bar joist structure the structure was displaced when the roof lifted. Once the tectum decking attachment system released from the structure below, displacement of the structure ceased. Minor thru wall cracking is evident throughout the station exterior walls due to internal and external pressures. The base of exterior walls have yet to be fully investigated due to the amount of debris around them. We retain the right to fully investigate the base of the exterior walls as these are the source of many failures.

The buildings plumbing system received flood water. The engine bay trench drains are presently stopped up and nonoperational. Plumbing stacks and ventilation stacks have been broken and separated from their source. Internal wall failures are latent and unforeseen until gas, sewer and water supply is introduced back into the system, therefore, failure within the wall cavity should be anticipated.

General-An assessment of the HVAC system for the facility was not conducted to determine the overall condition as related to storm damage. This report is not a detailed itemized statement, but rather a general overview of the facilities HVAC system. The mechanical systems and ductwork have been compromised. The external compressors were lost to water/wind damage and the ductwork has been displaced and in some cases wetted in interstitial locations. The ductwork is now growing mold. The building air conditioning system is a split system gas direct expansion system. The condensing unit was struck by falling debris and displaced. The indoor ductwork was flooded due to roof leaks and mold issues are apparent. Most of the diffusers and sections of ductwork exhibit water spray with corrosion. Water intrusion was experienced thru the flue and into the water heater, gas fired heating/ventilation/fan/coil system, and directly onto the forced air gas fired unit in the engine bay. The ventilation fans have been wetted and are corroding.

A thorough assessment of the electrical system for the facility was not conducted to determine the overall condition as related to storm damage. This report is not a detailed itemized statement, but rather a general overview of the facilities electrical system. The building suffered roof damage and blown out windows from high winds. Bay doors and windows on the east and south side of the building were blown out exposing the interior to wind driven water. The building received approximately 2" of water from the heavy rains associated with the tornado. Electrical service to the building has not been restored. The existing wiring is two conductor wiring and does not include a grounding circuit. This wiring is non-code compliant and must be replaced along with the associated appurtenances, ie; wiring devices. The Generator system and Automatic Transfer Switch has not been tested at this time.

The chain link fence was destroyed around the property. Replace brick curbing at concrete pavement in order to maintain surface water diversion.

An assessment was made by the City of Hattiesburg's insurance company as well as by the Federal Emergency Management Agency (FEMA). These two reports varied and there was a need to understand the differences and to provide information to the client on how to move forward.

Williams & Associates, PA cost analysis process began in February 2017 within two weeks of the storm event January 21, 2017. the results of this process are contained in this report.

**INSURANCE ANALYSIS**

Cost estimators performed an onsite assessment of damages at Hattiesburg fire Station #. The FEMA report indicated damages of $263,295.00 (Repair Cost Value) while the insurance carrier indicates a loss of $225,000.00 (Actual Cost Value). Neither estimators assumed a full replacement to cost. Neel Schaffer estimated the repair cost to be $175,000 and the replacement cost to be around $650,000.00.

Williams & Associates indicates repair cost of $384,000.00 and accounts for items often overlooked by other professionals such as testing of damaged asbestos containing floor tiles and their abatement and disposal, testing of mold in the interstitial spaces and wall cavities their removal and reconstruction, and IBC code compliance and the Federally adopted 2010 ADAAG requirements. Due to the high wind rating imposed by the IBC 2012 edition, nominal fire station costs of $191.00/SF per 2017 RS Means have been adjusted to $200.00/SF in our estimate for replacement cost. We value the replacement cost at $640,000.00. While this indicates a damage factor exceeding 50%, FEMA presented a settlement approach that would give the City of Hattiesburg only $236,295.00 to repair the facility.

The Board seeks support of an approach that would include demolition of the structure and replacement to codes and standards as defined by state fire codes and the International Building Code of 2012. Approval of the demolition would allow the Board access to a portion of the $1M code upgrade clause in the insurance policy.

Examination of the building and subsequent analysis of the findings are in favor of the Board position. In addition to my Professional Architect's license held in Mississippi, New York, and the Virgin Islands, I am also a nationally recognized thru the National Council of Architect's Registration Board, therefore, I can become licensed in any State through reciprocity. I am also a Leed Accredited Professional. As such, I support the demolition of Fire Station #2 for the following reasons:

1. Selective demolition and repairs required in the process of current Code compliance is always difficult, especially in antiquated building, this difficulty can easily lead to substantial unforeseen cost and time over-runs. In this instance, the repair option would be extremely difficult and expensive. According to the IBC 2012 edition, the damage to the engine bay is considered an alteration. The 2012 International Existing Building Code (IEBC) has three types of options for existing buildings. An option that is applicable to the proposed work and or building damage must be chosen from these options.
   The Code addresses the type of work in both Chapter 34 and the IEBC that may occur on a building as a; repair, alteration or addition. A repair is limited to part of an area on an item. An alteration is more than a repair. And of course, an addition is added to the building and not within the building unless it is a new floor. Removing interior walls and / or reconfiguring a space within the building is an alteration. For this building in question a new roof deck over the entire engine bay in an alteration.
2. In support of the position above, evidence indicates movement of the roof structure over the engine bay. This would require extraction of all steel joists and top CMU courses of one half the entire building's of the existing roof/wall area, installation of deep 16"helical piles around the exterior of the entire engine bay at 8'-0" o.c., installation of concrete and reinforcement bars in all the cells of the CMU walls to create a continuous load path, and addition of a complete bond beam around the top wall for weld plate embedment and horizontal reinforcement addition. During this period of the repair

additional steps would have to be taken to insure against further water intrusion and subsidence of the adjoining existing slabs. Potential repair costs have increased since the original inspection. For example, new and significant cracking has appeared in interior walls requiring removal and replacement.

3. The cost of stabilizing and shoring the building's engine bay walls during repairs needs to be considered. Exterior walls would have to be braced and temporary protective measures (such as canopy, tent, temporary roof, de-watering equipment) used to prevent further water intrusion and saturation and consequential efflorescence.
4. From our perspective, the location and extent of the challenges presented by the repair make replacement the more reasonable option. The alternative to complete demolition and replacement of the building is selective demolition of the building components which include much of the interior insulation, the interior walls, the entire roof covering, most of the roof deck and support, and replacement of flooring. Full demolition will be more efficient form both a time and cost perspective.

**FEMA 50% RULE**

When addressing the approach to restoration of the cafeteria using FEMA criteria, I also feel that demolition is warranted. In supporting my position, note that cost data used below may not reflect actual costs, but used for comparison purposes in determining FEMA computed damage percentages.

Repair costs are based on a national cost data base; in this case FEMA uses RS Means in their analyses. RS Means 2017 uses minimum cost of $191 per square foot for replacement value in this region.

According to federal regulation, FEMA will restore facilities damaged by these tornadoes to their pre-disaster design. Pursuant to 44 CFR 206.226(f) (1), "a facility is considered repairable when disaster damages do not exceed 50 percent of the cost of replacing a facility to its pre-disaster condition and it is feasible to repair the facility so that it can perform the function for which it was being used as well as it did immediately prior to the disaster." furthermore, according to 44 CFR 206.226 (f) (2) when disaster damage exceeds 50 percent of the cost of replacing a facility to its pre-disaster condition, "approved restorative work may include replacement of the facility."

Since damages exceed 50% of the cost of replacement it is not preferable to repair the existing facility. Due to the extensive damage to engine bay, (50% of the total square footage of Fire Station #2 building), it is uncertain whether any remediation short of demolition and construction a new station will return the City of Hattiesburg to a whole, and satisfactory, functional facility.

Observation and judgment point to demolition and replacement of the Fire Station #2 as the best alternative since the repair option has uncertainty, difficulty and inefficiency. It is recommended that the station building be demolished and that a new functionally equivalent building be built to the current International Building Code as a minimum and exploring the cost of wind upgrades to hurricane level winds, a roughly 30 mph increase.

**IBC 2012 CODE REVIEW AND ANALYSIS**

## SECTION 301
## COMPLIANCE METHODS

**301.1 General.**
The *repair*, *alteration*, *change of occupancy*, *addition* or relocation of all *existing buildings* shall comply with one of the methods listed in Sections 301.1.1 through 301.1.3 as selected by the applicant. Application of a method shall be the sole basis for assessing the compliance of work performed under a single permit unless otherwise approved by the *code official*. Sections 301.1.1 through 301.1.3 shall not be applied in combination with each other. Where this code requires consideration of the seismic force-resisting system of an *existing building* subject to *repair*, *alteration*, *change of occupancy*, *addition* or relocation of *existing buildings*, the seismic evaluation and design shall be based on Section 301.1.4 regardless of which compliance method is used.

**Exception:** Subject to the approval of the *code official*, *alterations* complying with the laws in existence at the time the building or the affected portion of the building was built shall be considered in compliance with the provisions of this code unless the building is undergoing more than a limited structural *alteration* as defined in Section 907.4.3. New structural members added as part of the *alteration* shall comply with the *International Building Code*. *Alterations* of *existing buildings* in *flood hazard areas* shall comply with Section 701.3.

According to the excerpt, above the exception to allow the building to be repaired to laws in existance at the time of the construction of this facility do not apply to the engine bay. This alteration must comply with IBC 2012 which the City of Hattiesburg has presently adopted. As this facility houses First Responders, the intention of the IBC is for the design strength of this facility, and other First Responder facilities, to be approximatley 15% stronger than other buildings built under IBC 2012 Code. See below.

## CHAPTER 4
## PRESCRIPTIVE COMPLIANCE METHOD

**[B] 401.2 Building materials and systems.**
Building materials and systems shall comply with the requirements of this section.

**[B] 401.2.1 Existing materials.**
Materials already in use in a building in compliance with requirements or approvals in effect at the time of their erection or installation shall be permitted to remain in use unless determined by the building official to be unsafe per Section 115.

**[B] 401.2.2 New and replacement materials.**
Except as otherwise required or permitted by this code, materials permitted by the applicable code for new construction shall be used. Like materials shall be permitted for *repairs* and *alterations*, provided no hazard to life, health or property is created. Hazardous materials shall not be used where the code for new construction would not permit their use in buildings of similar occupancy, purpose and location.

**[B] 401.3 Dangerous conditions.**
The building official shall have the authority to require the elimination of conditions deemed *dangerous*.

## SECTION 403
## ALTERATIONS

**[B] 403.1 General.**
Except as provided by Section 401.2 or this section, *alterations* to any building or structure shall comply with the requirements of the *International Building Code* for new construction. *Alterations* shall be such that the *existing building* or structure is no less conforming to the provisions of the *International Building Code* than the *existing building* or structure was prior to the *alteration*.

NOTE: "Except as provided by Section 401.2…" Some alterations not regarding loads can be made that mimic the original building's components. EX: an existing wall that under the newer code is required a fire rating does not have to be updated to meet the newer code. Alterations that are part of new work that is reconfiguring a space and does not fall under 401.2 must comply with the newer code. EX; a new corridor that is added to an existing corridor which would require the new work to be fire rated does not require the existing corridor walls to be fire rated. However, the existing wall's doors will be required to have closers. The NFPA 101 Life Safety Code gives existing solid core wood doors a 20-minute fire rating.

**[B] 403.3 Existing structural elements carrying gravity load.**
Any existing gravity load-carrying structural element for which an *alteration* causes an increase in design gravity load of more than 5 percent shall be strengthened, supplemented, replaced or otherwise altered as needed to carry the increased gravity load required by the *International Building Code* for new structures. Any existing gravity load-carrying structural element whose gravity load-carrying capacity is decreased as part of the *alteration* shall be shown to have the capacity to resist the applicable design gravity loads required by the *International Building Code* for new structures.

**[B] 403.3.1 Design live load.**
Where the *alteration* does not result in increased design live load, existing gravity load-carrying structural elements shall be permitted to be evaluated and designed for live loads approved prior to the *alteration*. If the approved live load is less than that required by Section 1607 of the *International Building Code*, the area designed for the nonconforming live load shall be posted with placards of approved design indicating the approved live load. Where the *alteration* does result in increased design live load, the live load required by Section 1607 of the *International Building Code* shall be used.

**[B] 403.4 Existing structural elements carrying lateral load.**
Except as permitted by Section 403.5, with the *alteration* increases design lateral loads in accordance with Section 1609 or 1613 of the *International Building Code*, or where the *alteration* results in a structural irregularity as defined in ASCE 7, or where the *alteration* decreases the capacity of any existing lateral load-carrying structural element, the structure of the altered building or structure shall be shown to meet the requirements of Sections 1609 and 1613 of the *International Building Code*.

**Exception:** Any existing lateral load-carrying structural element whose demand-capacity ratio with the *alteration* considered is no more than 10 percent greater than its demand-capacity ratio with the *alteration* ignored shall be permitted to remain unaltered. For purposes of calculating demand-capacity ratios, the demand shall consider applicable load combinations with design lateral loads or forces in accordance with Sections 1609 or 1613 of the *International Building Code*. For purposes of this exception, comparisons of demand-capacity ratios and calculation of design lateral loads, forces and capacities shall account for the cumulative effects of *additions* and *alterations* since original construction.

Since there are sleeping rooms for the fireman the following section will apply;

**[B] 403.6 Smoke alarms.**
Individual sleeping units and individual dwelling units in Group R and I-1 occupancies shall be provided with smoke alarms in accordance with Section 1103.8 of the *International Fire Code*.

**[B] 404.2 Substantial structural damage to vertical elements of the lateral force-resisting system.**
A building that has sustained *substantial structural damage* to the vertical elements of its lateral force-resisting system shall be evaluated and repaired in accordance with the applicable provisions of Sections 404.2.1 through 404.2.3.

**Exceptions:**

1. Buildings assigned to Seismic Design Category A, B or C whose substantial structural damage was not caused by earthquake need not be evaluated or rehabilitated for load combinations that include earthquake effects.

**[B] 404.2.1 Evaluation.**
The building shall be evaluated by a *registered design professional*, and the evaluation findings shall be submitted to the *building official*. The evaluation shall establish whether the damaged building, if repaired to its predamage state, would comply with the provisions of the *International Building Code* for wind and earthquake loads.

Wind loads for this evaluation shall be those prescribed in Section 1609 of the *International Building Code*. Earthquake loads for this evaluation, if required, shall be permitted to be 75 percent of those prescribed in Section 1613 of the *International Building Code*.

**[B] 404.3 Substantial structural damage to gravity load-carrying components.**
Gravity load-carrying components that have sustained *substantial structural damage* shall be rehabilitated to comply with the applicable provisions of the *International Building Code* for dead and live loads. Snow loads shall be considered if the *substantial structural damage* was caused by or related to snow load effects. Existing gravity load-carrying structural elements shall be permitted to be designed for live loads approved prior to the damage. Nondamaged gravity load-carrying components that receive dead, live or snow loads from rehabilitated components shall also be rehabilitated or shown to have the capacity to carry the design loads of the *rehabilitation* design. New structural members and connections required by this *rehabilitation* design shall comply with the detailing provisions of the *International Building Code* for new buildings of similar structure, purpose and location.

**[B] 404.3.1 Lateral force-resisting elements.**
Regardless of the level of damage to vertical elements of the lateral force-resisting system, if *substantial structural damage* to gravity load-carrying components was caused primarily by wind or earthquake effects, then the building shall be evaluated in accordance with Section 404.2.1 and, if noncompliant, rehabilitated in accordance with Section 404.2.3.

**Exceptions:**

The existing building does not currently have accessibility compliance. Code Congress told me that you do not have to make it compliant now if you are not reconfiguring a space. However, the Federal ADA will address removal of barriers since there is money being used for repair and alterations even if the alterations are not reconfiguring spaces.

## SECTION 410
## ACCESSIBILITY FOR EXISTING BUILDINGS

**[B] 410.1 Scope.**
The provisions of Sections 410.1 through 410.9 apply to maintenance, *change of occupancy*, *additions* and *alterations* to *existing buildings*, including those identified as *historic buildings*.

**[B] 410.3 Extent of application.**
An *alteration* of an existing *facility* shall not impose a requirement for greater accessibility than that which would be required for new construction. *Alterations* shall not reduce or have the effect of reducing accessibility of a *facility* or portion of a *facility*.

**[B] 410.6 Alterations.**
A *facility* that is altered shall comply with the applicable provisions in Chapter 11 of the *International Building Code*, unless *technically infeasible*. Where compliance with this section is *technically infeasible*, the *alteration* shall provide access to the maximum extent technically feasible.

**Exceptions:**

1. The altered element or space is not required to be on an accessible route, unless required by Section 410.7.

2. Accessible means of egress required by Chapter 10 of the *International Building Code* are not required to be provided in existing facilities.

**[B] 410.7 Alterations affecting an area containing a primary function.**
Where an *alteration* affects the accessibility to, or contains an area of *primary function*, the route to the *primary function* area shall be *accessible*. The *accessible* route to the *primary function* area shall include toilet facilities or drinking fountains serving the area of *primary function*.

**Exceptions:**

1. The costs of providing the *accessible* route are not required to exceed 20 percent of the costs of the *alterations* affecting the area of *primary function*.

2. This provision does not apply to *alterations* limited solely to windows, hardware, operating controls, electrical outlets and signs.

3. This provision does not apply to *alterations* limited solely to mechanical systems, electrical systems, installation or *alteration* of fire protection systems and abatement of hazardous materials.

4. This provision does not apply to *alterations* undertaken for the primary purpose of increasing the accessibility of a *facility*.

5. This provision does not apply to altered areas limited to Type B dwelling and sleeping units.

**[B] 410.8 Scoping for alterations.**
The provisions of Sections 410.8.1 through 410.8.14 shall apply to *alterations* to *existing buildings* and *facilities*.

**[B] 410.8.1 Entrances.**
*Accessible* entrances shall be provided in accordance with Section 1105.

**Exception:** Where an *alteration* includes alterations to an entrance, and the *facility* has an *accessible* entrance, the altered entrance is not required to be *accessible*, unless required by Section 410.7. Signs complying with Section 1110 of the *International Building Code* shall be provided.

**[B] 410.8.11 Toilet rooms.**
Where it is *technically infeasible* to alter existing toilet and bathing rooms to be *accessible*, an *accessible* family or assisted-use toilet or bathing room constructed in accordance with Section 1109.2.1 of the *International Building Code* is permitted. The family or assisted-use toilet or bathing room shall be located on the same floor and in the same area as the existing toilet or bathing rooms.

**[B] 410.8.12 Dressing, fitting and locker rooms.**
Where it is *technically infeasible* to provide accessible dressing, fitting or locker rooms at the same location as similar types of rooms, one accessible room on the same level shall be provided. Where separate-sex facilities are provided, accessible rooms for each sex shall be provided. Separate-sex facilities are not required where only family or assisted-use rooms are provided.

**[B] 410.8.14 Thresholds.**
The maximum height of thresholds at doorways shall be $^{3}/_{4}$ inch (19.1 mm). Such thresholds shall have beveled edges on each side.

Option 2 has Levels methods; Level 1, 2 or 3 and covers some other items in Chapters 6 -13. The following snap shots are from 2012 IEBC Chapter titled; Effective Use of the International Existing Building Code

**Chapter 5 Classification of Work.** This chapter provides an overview of the Work Area Method available as an option for rehabilitation of a building. The chapter defines the different classifications of alterations and provides general requirements for repairs, alterations, change of occupancy, additions, historic buildings and relocated buildings. Detailed requirements for all of these are given in subsequent Chapters 6 through 13.

**Chapter 7 Alterations—Level 1.** This chapter provides the technical requirements for those existing buildings that undergo Level 1 alterations as described in Section 403, which includes replacement or covering of existing materials, elements, equipment or fixtures using new materials for the same purpose. This chapter, similar to other chapters of this code, covers all building-related subjects, such as structural, mechanical, plumbing, electrical and accessibility as well as the fire and life safety issues when the alterations are classified as Level 1. The purpose of this chapter is to provide detailed requirements and provisions to identify the required improvements in the existing building elements, building spaces and building structural system. This chapter is distinguished from Chapters 8 and 9 by only involving replacement of building components with new components. In contrast, Level 2 alterations involve more space reconfiguration and Level 3 alterations involve more extensive space reconfiguration, exceeding 50 percent of the building area.

Since this review is for storm damage issues; Level 2 and Level 3 do not apply. Levels 2 applies when the work area is experiencing reconfiguration of under 50%. And Level 3 applies when the work area is experiencing reconfiguration of over 50%. You can read their information in 2012 IEBC Chapter tilted; Effective Use of the International Existing Building Code and Sections 504 & 505.

## SECTION 502
## REPAIRS

**502.1 Scope.**
*Repairs*, as defined in Chapter 2, include the patching or restoration or replacement of damaged materials, elements, *equipment or fixtures* for the purpose of maintaining such components in good or sound condition with respect to existing loads or performance requirements.

**502.2 Application.**
*Repairs* shall comply with the provisions of Chapter 6.

**502.3 Related work.**
Work on nondamaged components that is necessary for the required *repair* of damaged components shall be considered part of the *repair* and shall not be subject to the provisions of Chapter 7, 8, 9, 10 or 11.

## SECTION 503
## ALTERATION—LEVEL 1

**503.1 Scope.**
Level 1 alterations include the removal and replacement or the covering of existing materials, elements, equipment, or fixtures using new materials, elements, equipment, or fixtures that serve the same purpose.

**503.2 Application.**
Level 1 *alterations* shall comply with the provisions of Chapter 7.

NOTE: Only the alterations work is required to comply with Chapter 7. The repair work is not subject to provisions in Chapter 7-11 but that does not omit requirements for repair work.

**701.2 Conformance.**
An *existing building* or portion thereof shall not be altered such that the building becomes less safe than its existing condition.

**Exception:** Where the current level of safety or sanitation is proposed to be reduced, the portion altered shall conform to the requirements of the *International Building Code*.

## SECTION 702
## BUILDING ELEMENTS AND MATERIALS

In Section 702 new material such as interior finishes and trim must comply with pertinent sections in Chapter 8 of the IBC. [ref: 702.1 through 702.3]

**702.4 Materials and methods.**
All new work shall comply with the materials and methods requirements in the *International Building Code*, *International Energy Conservation Code*, *International Mechanical Code*, and *International Plumbing Code*, as applicable, that specify material standards, detail of installation and connection, joints, penetrations, and continuity of any element, component, or system in the building.

In Sections 703 through Section 705 the word Alterations is addressing reconfiguration of walls and spaces because we have already research prior Code Sections that do not require upgrading existing walls that may now be required to be fire rated and currently are not. The existing corridor walls may be getting new sheetrock for repair of water damage. That would be a repair not an alteration. If there is an existing fire rated wall any work done to it would have to maintain the required fire rating. The HVAC may have to be totally removed due to water damage and that would be an alteration. Replacement of electrical fixtures and plumbing fixtures would be an alteration.

**SECTION 706**
**STRUCTURAL**

**[B] 706.1 General.**
Where *alteration* work includes replacement of equipment that is supported by the building or where a reroofing permit is required, the provisions of this section shall apply.

**[B] 706.2 Addition or replacement of roofing or replacement of equipment.**
Where addition or replacement of roofing or replacement of equipment results in additional dead loads, structural components supporting such reroofing or equipment shall comply with the gravity load requirements of the *International Building Code*.

This section has some other sections that require review by the Structural Engineer as the other sections address parapet wall bracing and roof diaphragms getting wind loads. This would apply to any roof requiring reroof permits.

ADA; some excerpts from the ADA law Title II.

https://www.ada.gov/regs2010/titleII_2010/titleII_2010_regulations.htm#a35150

**Part 35 Nondiscrimination on the Basis of Disability in State and Local Government Services**
(as amended by the final rule published on August 11, 2016)

**Subpart B—General Requirements**

§ 35.130 General prohibitions against discrimination

**Subpart D—Program Accessibility**

§ 35.149 Discrimination prohibited.

§ 35.150 Existing facilities

§ 35.151 New construction and alterations
(b) *Alterations.*

(1) Each facility or part of a facility altered by, on behalf of, or for the use of a public entity in a manner that affects or could affect the usability of the facility or part of the facility shall, to the maximum extent

feasible, be altered in such manner that the altered portion of the facility is readily accessible to and usable by individuals with disabilities, if the alteration was commenced after January 26, 1992.

(c) *Accessibility standards and compliance date*.

(3) If physical construction or alterations commence on or after March 15, 2012, then new construction and alterations subject to this section shall comply with the 2010 Standards.

ADA Technical support comments to me: The above sections contain more information. The law does not have a specific date for compliance by a local jurisdiction. The law requires that if there is an activity within the building, such as a school field trip, then the building must be accessible to the primary function areas. So, if the general public is allowed to have access to the building then the building must be compliant for the physically disable. If you have a disable fire fighter and he is to work at the station then accessibility would be required for the fire fighter to perform his duties. If there are alterations to the building then a certain amount of the alterations must include removal of barriers – see § 35.151 New construction and alterations. The law also applies even if the local jurisdiction does not receive federal funds.

You might want to read more of the below items by going to the law on the link provided. I only copied a few items.

(iii) *Disproportionality.*
(A) Alterations made to provide an accessible path of travel to the altered area will be deemed disproportionate to the overall alteration when the cost exceeds 20 % of the cost of the alteration to the primary function area.

v) *Series of smaller alterations.*
(A) The obligation to provide an accessible path of travel may not be evaded by performing a series of small alterations to the area served by a single path of travel if those alterations could have been performed as a single undertaking.
Building Code snap shot below

| | |
|---|---|
| ❖ Wherever an addition to an existing building is made, the affected members of the original structure must be assessed to determine their ability to resist the increased forces. Because an addition typically adds new loads to the existing building, the architect or engineer responsible for the design of the project must analyze the original construction to determine whether any of the structural components, including foundations, require reinforcement. Where an existing building was initially designed to support the loads of future additions, the building official should seek verification to establish that the proposed addition will result in the affected building complying with the current code requirements. All new construction is also required to comply with current code requirements.<br>Structural element forces may be increased by no | more than 5 percent, but only if the structural element stresses do not exceed those given by the material standards referenced by the code at the time of construction. This restriction does not apply if the structural element meets the current material standards and is permitted by the code as if it were new.<br>When remodeling or repairing an existing building, structural elements, including any uncovered structural elements, that are found to be deficient must be reinforced or replaced. If the structural integrity has been affected, repairs are to be made in compliance with current code provisions. |

The above is from the *2006 IBC Commentary for Chapter 34* that I have. It is a commentary of the 2006 Code *Section 3403.2 Structural* which is similar in wording to *2012 IEBC Section 404.3.3*.
The first paragraph is assuming an addition is putting loads on the existing building like an additional floor or bearing on the existing buildings wall/foundation system at some point.

The second paragraph might provide insight regarding the structural implications. The 5% comment is for the Code's loads at the time of construction. The restriction does not apply if the current structural elements comply with the current code loading criteria. Of course, the last sentence is clear on if the structural integrity has been affected.
The way this reads you use the old codes loading for live loads calculations.

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