

FEMA Miscalculated the 50 Percent Rule when Deciding to Replace School Buildings after the West, Texas Explosion





DHS OIG HIGHLIGHTS

FEMA Miscalculated the 50 Percent Rule when Deciding to Replace School Buildings after the West, Texas Explosion

September 9, 2016

Why We Did This Audit

The April 17, 2013 fertilizer plant explosion devastated the City of West, Texas, killing 15 and leveling homes in a 5-block radius. The West School Administration (School District) received \$63.4 million in Federal Emergency Management Agency (FEMA) grant funds from the Texas Division of Emergency Management, a FEMA grantee, for emergency and permanent recovery work.

What We Recommend

FEMA should remind its Region VI Public Assistance staff that FEMA policy does not allow soft costs in calculating the 50 Percent Rule.

For Further Information:

Contact our Office of Public Affairs at (202) 254-4100, or email us at DHS-IG.OfficePublicAffairs@oig.dhs.gov

What We Found

The massive West, Texas fertilizer plant explosion severely damaged the School District's buildings. With help from nearby school districts and local businesses, School District officials worked quickly to return students to classes within 5 days of the explosion.

The School District accounted for and expended FEMA grant funds according to Federal regulations and FEMA guidelines. However, FEMA Region VI officials made mistakes calculating the 50 Percent Rule it used to decide whether to replace, rather than repair, damaged buildings. Fortunately, these mistakes did not result in incorrect decisions.

In five audits spanning several FEMA Regional offices from 2012 and 2013, we identified over \$100 million in ineligible costs stemming from mistakes FEMA made in applying the 50 Percent Rule. FEMA Headquarters recently issued policy clarification to help prevent improper replacement decisions, which, along with more detailed reviews, should help FEMA avoid future mistakes.

FEMA Response

FEMA officials agreed with our finding and recommendation (see FEMA's written response in appendix C). At the exit conference, FEMA provided sufficient evidence to resolve and close the recommendation. Therefore, we consider this audit closed.



OFFICE OF INSPECTOR GENERAL

Department of Homeland Security

Washington, DC 20528 / www.oig.dhs.gov

September 9, 2016

MEMORANDUM FOR: George A. Robinson
Regional Administrator, Region VI
Federal Emergency Management Agency

Thomas M. Salmon

FROM: Thomas M. Salmon
Assistant Inspector General

SUBJECT: *FEMA Miscalculated the 50 Percent Rule when Deciding to Replace School Buildings after the West, Texas Explosion*
Audit Report Number OIG-16-132-D

We audited Federal Emergency Management Agency (FEMA) Public Assistance grant funds awarded to West School Administration (the School District) in West, Texas. The Texas Division of Emergency Management, a FEMA grantee, awarded the district \$63.4 million for damages resulting from the West Fertilizer Plant explosion, which occurred on April 17, 2013. The award provided 75 percent Federal funding for emergency protective measures and permanent recovery work under the major disaster declaration (FEMA disaster number 4136-DR-TX).¹ We audited seven large and two small projects totaling \$60.1 million, or 95 percent of the total award (see appendix A, table 2). Private insurance covered \$35 million of the damages. At the time of our audit, the School District had completed two projects but had not submitted final claims to Texas or FEMA.

Background

The City of West, Texas, is a small community between Dallas and Waco. On April 17, 2013, a fire at the West Fertilizer Company caused a massive explosion, resulting in 15 deaths, approximately 260 injuries, and more than \$200 million in damage within the city. The explosion, so powerful that the U.S. Geological Survey registered the blast at 2.1 on the Richter magnitude scale, leveled houses in a 5-block radius and left a 93-foot crater. Included among the fatalities were 12 emergency responders.

¹ We previously audited a \$5.1 million grant award the School District received for emergency protective measures under an emergency declaration (FEMA disaster number 3363-EM). We issued our report on May 9, 2016, *The West School Administration Effectively Accounted for the FEMA Emergency Grant Funds Awarded for the West, Texas Fertilizer Plant Explosion* (report number OIG-16-86-D).



OFFICE OF INSPECTOR GENERAL

Department of Homeland Security

The School District is an independent school district consisting of four schools and supporting facilities in a city of about 2,800. The explosion shattered windows and buckled ceilings at both the high school and middle school (see figures 1 and 2). The explosion caused so many injuries that emergency responders created a makeshift triage center on the district's football field.

Figure 1: West High School Gymnasium



Source: School District's structural report dated May 15, 2013

School officials worked quickly to return students to classrooms within 5 days of the explosion. With most buildings severely damaged, district officials scrambled to find and modify available classrooms, secure school supplies, and arrange for grief counseling. With help from other school districts and businesses, district officials had students back in classes the following week.



OFFICE OF INSPECTOR GENERAL

Department of Homeland Security

Figure 2: West Middle School Annex Building



Source: DHS Office of Inspector General (OIG) site visit on June 18, 2015

The President issued an Emergency Declaration on April 19, 2013, allowing funding of emergency protective measures to supplement State and local efforts, but did not immediately declare a major disaster. As a result, FEMA funding for permanent work was not available until the major disaster declaration in August 2013, several months after the explosion. District officials salvaged building contents, secured facilities deemed repairable, and demolished those that were not. School officials awarded permanent work contracts and began design and construction of new buildings before the major disaster declaration. The district also installed donated and leased temporary portable classrooms for use in the upcoming 2013–2014 school year.

Before finalizing Federal funding, FEMA needed to assess the eligibility of the damaged high school and middle school buildings for replacement under the 50 Percent Rule (44 Code of Federal Regulations (CFR) 206.226(f)(1)).² The 50 Percent Rule is a decision-making protocol that compares certain repair costs to certain replacement costs resulting in a fraction expressed as a percentage. Importantly, the calculation specifically excludes many repair and replacement costs that FEMA will ultimately pay under its Public Assistance program.

FEMA bases its exclusion of certain allowable costs on the premise that, when a facility is so severely damaged that the cost to repair the damage exceeds 50 percent of the cost of a new building, it is often justifiable and reasonable to

² FEMA has clarified this Federal regulation under various FEMA policies and publications, including *Public Assistance Guide* (FEMA 322, June 2007, pp. 36–38); *Public Assistance Policy Digest* (FEMA 321, January 2008, p. 113); and Disaster Assistance Policy DAP9524.4 (September 24, 1998 and updated on March 25, 2009).



OFFICE OF INSPECTOR GENERAL

Department of Homeland Security

replace the building. The numerator of the fraction includes only the direct costs of repairing the disaster damage, referred to as “hard” costs, and may include costs associated with the current repair codes and standards that apply to the damaged elements only — “soft” costs are not included. The numerator does **not** include costs associated with the following:

- a. upgrades of other elements triggered by codes and standards;
- b. design associated with upgrades;
- c. demolition of entire facility;
- d. site work;
- e. applicable project management costs;
- f. contents; and
- g. hazard mitigation measures.

The denominator of the fraction is the cost of replacing the facility based on its pre-disaster design and according to applicable codes and standards currently in effect. These codes and standards may relate to structural elements such as mechanical or electrical systems, or the size of a structure. The denominator does **not** include costs associated with the following:

- a. demolition;
- b. site work;
- c. applicable project management costs;
- d. contents; and
- e. hazard mitigation measures.

Deciding to repair a facility may not necessarily result in cost savings to taxpayers after all allowable costs under the Public Assistance program are included. However, FEMA limits eligible costs to the estimated costs of repair or replacement, whichever is lower.

At the time of our audit, the School District was in litigation with its commercial insurance carrier over its final loss settlement. In addition, there is no indication the School District will recoup any significant proceeds from the West Fertilizer Plant given the company’s financial insolvency and limited insurance coverage.

Although investigators initially ruled the cause of the explosion as undetermined, on May 11, 2016, the U.S. Bureau of Alcohol, Tobacco, Firearms and Explosives ruled the cause as arson.



OFFICE OF INSPECTOR GENERAL

Department of Homeland Security

Results of Audit

The School District accounted for and expended FEMA grant funds according to Federal regulations and FEMA guidelines. However, FEMA Region VI officials made mistakes calculating the 50 Percent Rule that FEMA uses to decide whether to fund the repair or replacement of damaged facilities. Fortunately, these mistakes did not result in incorrect replacement decisions.

Finding A: Project Cost Accounting

The School District accounted for and expended FEMA grant funds according to Federal regulations. The School District has an effective accounting system in place to ensure it accounts for disaster costs on a project-by-project basis and can support disaster-related costs as the following Federal regulations and FEMA guidelines require:

- Grantees must account for large project expenditures on a project-by-project basis (44 CFR 206.205(b)). FEMA requires subgrantees to keep records for all projects on a project-by-project basis (*Public Assistance Guide*, FEMA 322, June 2007, p. 137).
- Grantees and subgrantees must maintain accounting records that adequately identify the source and application of Federal funds, and maintain source documentation to support those accounting records (44 CFR 13.20(b)(2) and (6)).

We reviewed source documentation for these costs and determined district officials properly allocated costs to specific projects and maintained appropriate documentation to support the costs.

Finding B: FEMA Miscalculated the 50 Percent Rule

FEMA incorrectly calculated its 50 Percent Rule when deciding to replace, rather than repair, three buildings — the middle school cafeteria, the middle school classrooms, and the high school business office. The problems occurred because FEMA Region VI officials included unallowable “soft” costs in the 50 Percent rule calculation. FEMA uses the 50 Percent Rule to determine whether to fund the repair or replacement of damaged facilities. Fortunately, these mistakes did not result in incorrect replacement decisions, but they could have. For example, the inclusion of soft costs for the calculation for Projects 13 and 22 did not affect the decision to replace or repair the buildings because both denominators were large enough to absorb the errors.



OFFICE OF INSPECTOR GENERAL

Department of Homeland Security

Avoiding these types of mistakes is important because they can cost taxpayers millions of dollars in ineligible disaster recovery expenditures. For example, in fiscal years 2012 and 2013, we recommended FEMA disallow over \$100 million of costs that resulted from questionable 50 percent repair or replace decisions in five audits.³ FEMA recently implemented a policy clarification to help prevent improper calculations.⁴

For example, FEMA officials incorrectly included repair soft costs for general requirements and architectural and engineering fees for the middle school cafeteria, thereby overstating the repair estimate by \$302,515.⁵ General requirements are costs for non-permanent jobsite work including safety and security, temporary services and utilities, and quality control. We asked Region VI Recovery officials why they included these costs in the calculation; and they said this occurred because they did not review the calculations in sufficient detail.

According to Federal regulation 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 . . .” FEMA refers to this regulation as the “50 Percent Rule” and implements it according to its Disaster Assistance Policy 9524.4. FEMA uses this decision-making protocol to determine whether to fund the repair or replacement of a disaster-damaged facility.

Applying the 50 Percent Rule can be complex; however, including soft costs in the calculation is a basic mistake that FEMA Region VI Recovery officials should have caught during review. On September 14, 2015, FEMA Headquarters issued policy clarification to help prevent such improper calculations; and FEMA Region VI officials agreed with our finding and said they will increase their detailed review of these calculations. Therefore, while we are not recommending additional policy changes, FEMA Region VI officials should remind their Public Assistance staff that FEMA policy does not allow soft costs in calculating the 50 Percent Rule.

At the exit conference, FEMA Region VI officials provided evidence that on June 7, 2016, it notified Public Assistance staff of the importance of not including soft costs in the 50 percent calculation. As a result, we consider this

³ Audit Report OIG-14-123-D, *FEMA’s Progress in Clarifying its “50 Percent Rule” for the Public Assistance Grant Program*, August 7, 2014.

⁴ FEMA Recovery Policy 9524.4, *Repair vs. Replacement of a Facility under 44 CFR 206.226(f) (The 50 Percent Rule) - Policy Clarification; and Cost Estimating and Review Requirements*, September 2015.

⁵ Specifically, Part B of the Cost Estimating Format calculation includes items such as safety and security, temporary services and utilities, submittals, and quality control. Part H represents costs for overall project development, management costs, and design costs.



OFFICE OF INSPECTOR GENERAL

Department of Homeland Security

finding and the related recommendation to be resolved and closed; and we require no further action from FEMA.

Recommendation

We recommend that the Regional Administrator, FEMA Region VI:

Recommendation 1: Remind Region VI Public Assistance staff that FEMA policy does not allow soft costs in calculating the 50 Percent Rule. FEMA provided evidence that it had implemented this recommendation; therefore, we consider it to be resolved and closed and require no further action from FEMA (finding B).

Discussion with Management and Audit Follow-up

We discussed the results of our audit with officials from the School District, Texas, and FEMA, and included their comments in this report, as appropriate. We also provided a draft report in advance to these officials and discussed it at exit conferences with FEMA officials on June 27, 2016; Texas officials on June 30, 2016; and School District officials on June 23, 2016.

FEMA Region VI officials provided a written response to this report on July 21, 2016 (see appendix C). FEMA Region VI officials agreed with our finding and recommendation. At the exit conference, Region VI officials provided evidence showing that they had notified all Public Assistance staff of the importance of not including soft costs in calculating the 50 Percent Rule. The actions taken by Region VI officials were sufficient to resolve and close the recommendation and we consider this audit closed.

The Office of Emergency Management Oversight major contributors to this report were Christopher Dodd, Director; Chiquita Washington, Audit Manager; Jacob Farias, Auditor-in-Charge; Sharon Snedeker, Senior Auditor; Christina Sbond, Auditor; and Lena Stephenson-George, Auditor.

Please call me with any questions at (202) 254-4100, or your staff may contact Christopher Dodd, Director, Central Regional Office - South, at (214) 436-5200.



OFFICE OF INSPECTOR GENERAL
Department of Homeland Security

Appendix A

Objective, Scope, and Methodology

We audited FEMA Public Assistance grant funds awarded to the School District (Public Assistance Identification Number 309-0F23E-00). Our audit objective was to determine whether the district accounted for and expended FEMA grant funds according to Federal regulations and FEMA guidelines for FEMA disaster number 4136-DR-TX. As of the cutoff date of our audit, June 9, 2015, Texas had awarded the district a total of \$63.4 million for damages resulting from the West Fertilizer Company explosion, which occurred on April 17, 2013. The award provided 75 percent Federal funding.

We audited seven large and two small projects totaling \$60.1 million, or 95 percent of the total gross award (see table 3).⁶ Our audit covered the period of April 17, 2013, the first day of the incident period, through June 9, 2015, our audit cutoff date. Table 1 shows the gross and net award amounts before and after reductions for insurance for all projects in the universe and scope.

Table 1: Gross and Net Award Amounts

	Gross Award Amount	Insurance Reductions	Net Award Amount
Project Universe	\$ 63,445,158	\$ (34,985,168)	\$ 28,459,990
Audit Scope	\$ 60,068,603	\$ (31,853,840)	\$ 28,214,763

Source: FEMA project worksheets and OIG analysis

We interviewed FEMA, Texas Division of Emergency Management, and School District officials; gained an understanding of the District's method of accounting for disaster-related costs and its procurement policies and procedures; reviewed the District's disaster-related contracts awarded and supporting documents; judgmentally selected and reviewed (generally based on dollar amounts) project costs and procurement transactions for the projects in our audit scope; reviewed applicable Federal regulations and FEMA guidelines; and performed other procedures considered necessary to accomplish our objective. We did not assess the adequacy of the District's internal controls applicable to grant activities, because it was not necessary to accomplish our audit objective.

⁶ Federal regulations in effect at the time of the disaster set the large project minimum threshold at \$67,501 and above [Notice of Adjustment of Disaster Grant Amounts, 77 Fed. Reg. 195, at p. 61423 (Oct. 9, 2012)].



OFFICE OF INSPECTOR GENERAL

Department of Homeland Security

Appendix A (continued)

Table 2: Projects Audited

Project Number	Category of Work ⁷	Gross Award	Insurance Reductions	Net Award
08	E	\$ 32,617,605	(\$13,768,313)	\$ 18,849,292
10	E	9,010,707	(7,029,548)	1,981,159
19	E	4,095,106	(3,178,856)	916,250
32	B	3,721,730	(100,000)	3,621,730
09	E	1,592,714	(770,546)	822,168
11	E	885,851	(833,260)	52,591
12	E	1,287,498	(1,282,498)	5,000
20	E	2,754,473	(2,343,080)	411,393
22 ⁸	E	4,102,919	(2,547,739)	1,555,180
Total		\$60,068,603	(\$31,853,840)	\$28,214,763

Source: FEMA project worksheets, School District records, and OIG analysis

We conducted this performance audit between June 2015 and June 2016, pursuant to the *Inspector General Act of 1978*, as amended, and according to generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based upon our audit objective. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based upon our audit objective. We conducted this audit by applying the statutes, regulations, and FEMA policies and guidelines in effect at the time of the disaster.

⁷ FEMA classifies disaster-related work by type: debris removal (Category A), emergency protective measures (Category B), and permanent work (Categories C through G).

⁸ FEMA deobligated Project 13 and added the funding to Project 22.



OFFICE OF INSPECTOR GENERAL
Department of Homeland Security

Appendix B
FEMA Region VI Response

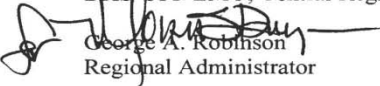
U.S. Department of Homeland Security
FEMA Region 6
Federal Regional Center
800 North Loop 288
Denton, TX 76209-3698



FEMA

July 20, 2016

MEMORANDUM FOR: Christopher Dodd
Director
DHS-OIG-EMO, Central Regional Office - South

FROM: 
George A. Robinson
Regional Administrator

SUBJECT: Management's Response to OIG Draft Report
*FEMA Made Mistakes Calculating the 50 Percent Rule when
Deciding to Replace West School Administration Buildings*
(Project No. G-16-026)

Thank you for the opportunity to review and comment on this draft report. The Federal Emergency Management Agency (FEMA) Region 6 (R6) appreciates the Office of Inspector General's (OIG) work in planning and conducting its review and issuing this report.

FEMA R6 has taken steps to clarify implementation of the 50 Percent Rule by its staff concerning Public Assistance projects.

The draft report contained two recommendations. FEMA concurs with the first recommendation pertaining to the Region's implementation of the 50 percent rule. Based on discussions surrounding Public Assistance policies, your office confirmed that it will remove the second recommendation from the final report. Finally, your office agreed to revise the title of the audit report based on our conversations. Please see the attachment for our detailed response to the remaining recommendation.

Again, we thank you for the opportunity to review and comment on this draft report. Technical comments were previously provided under separate cover. Please feel free to contact Kent Baxter, Audit Coordinator at 940-898-5399, if you have any questions. We look forward to working with you again in the future.

Enclosure

cc: Nim Kidd, Texas DEM
Moises Dugan, R6-ORA
John Long, R6-REC
Bill Boone, R6-REC-PA
Michael Crow, R6-REC-PA
Kathy Hill, HQ-OCFO
Gary McKeon, HQ-OPPA-ALO
Kent Baxter, R6-ORA

www.fema.gov



OFFICE OF INSPECTOR GENERAL
Department of Homeland Security

Appendix B (continued)
FEMA Region VI Response

**Attachment: FEMA R6 Management Response to Recommendations
Contained in G-16-026**

OIG recommended that the Regional Administrator, FEMA Region VI:

Recommendation 1: Remind Region VI Public Assistance staff that FEMA policy does not allow soft costs in calculating the 50 Percent Rule (finding B)

Response: Concur. On June 7, 2016, the R6 Recovery Division, Public Assistance (PA) Branch Chief disseminated a memorandum to R6 PA staff clarifying the correct application of the 50 Percent Rule (Exhibit 1). We are confident that this addresses Recommendation 1, and therefore, we request its closure. Estimated Completion Date: June 7, 2016.

Recommendation 2: Deobligate \$744,592 (\$558,444 Federal share) from Project 22 and put those funds to better use (finding C).

Response: Based on R6 and OIG conversations at the Exit Conference concerning finding C and current PA policy, the OIG will remove this recommendation from the final report with no funding deobligations required. No further response is necessary.



OFFICE OF INSPECTOR GENERAL
Department of Homeland Security

Appendix C
Report Distribution

Department of Homeland Security

Secretary
Chief of Staff
Chief Financial Officer
Under Secretary for Management
Chief Privacy Officer
Audit Liaison, DHS

Federal Emergency Management Agency

Administrator
Chief of Staff
Chief Financial Officer
Chief Counsel
Chief Procurement Officer
Director, Risk Management and Compliance
Audit Liaison, FEMA Region VI
Audit Liaison, FEMA (Job Code G-16-026)

Office of Management and Budget

Chief, Homeland Security Branch
DHS OIG Budget Examiner

Congress

Congressional Oversight and Appropriations Committees

External

Chief, Texas Division of Emergency Management Deputy Assistant Director
Response, Texas Division of Emergency Management
Texas Legislative Auditor
Superintendent, West School Administration
Assistant Superintendent, West School Administration

ADDITIONAL INFORMATION AND COPIES

To view this and any of our other reports, please visit our website at: www.oig.dhs.gov.

For further information or questions, please contact Office of Inspector General Public Affairs at: DHS-OIG.OfficePublicAffairs@oig.dhs.gov. Follow us on Twitter at: @dhsoig.



OIG HOTLINE

To report fraud, waste, or abuse, visit our website at www.oig.dhs.gov and click on the red "Hotline" tab. If you cannot access our website, call our hotline at (800) 323-8603, fax our hotline at (202) 254-4297, or write to us at:

Department of Homeland Security
Office of Inspector General, Mail Stop 0305
Attention: Hotline
245 Murray Drive, SW
Washington, DC 20528-0305