

**U. S. Department of Housing and Urban Development  
Office of Inspector General**



**Reconstruction of Public Housing  
Damaged by Hurricane Katrina  
On the Mississippi Gulf Coast**

**Kenneth M. Donohue, Sr.  
Inspector General**

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## **Executive Summary**

The Office of Inspector General, Inspections and Evaluations Division, conducts independent, objective examinations of the U.S. Department of Housing and Urban Development's (HUD) activities, programs, operations, and organizational issues.

We completed an evaluation of public housing reconstruction with HUD funds on the Mississippi Gulf Coast. Our objective was to determine the status of the recovery efforts and determine how the risks of building on sites located in designated flood plains are being addressed.

Hurricane Katrina damaged 29 project sites. After Hurricane Katrina, FEMA revised floodplain guidance in the affected areas, and HUD made \$100 million in grant funds available for public housing recovery through the State of Mississippi. As of August 31, 2008, the State had approved or was considering using these funds on a total of 24 developments proposed by the PHAs, 13 of which are in floodplain areas. The estimated total construction cost of the 24 proposed projects is \$231 million, including estimated total HUD funding of \$91 million. The State of Mississippi has followed a specific process in the major reconstruction of the five Gulf Coast public housing authorities severely damaged by Hurricane Katrina.

The Mississippi Development Authority (MDA), the State agency responsible for assuring PHA compliance with floodplain construction regulations, followed HUD's floodplain management and eight-step decision-making processes in its project funding decisions and is requiring necessary mitigating actions. MDA is also requiring PHAs to provide proof of each project's total financing and future cash flows to sustain operations and to maintain 100 percent insurance coverage on replacement values for all hazard types.

The Office of Inspector General will continue to monitor the use of these and other HUD disaster recovery funds allocated to the Gulf Coast as well as perform future inspections of other coastal recovery programs and related regulatory compliance.

If you have any questions concerning this report, please call Special Agent in Charge Kenneth R. Taylor, Jr., at (202) 402-8416.

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## **Introduction**

On August 29, 2005, Hurricane Katrina struck the Mississippi Gulf Coast and inflicted massive damage from high winds, heavy rains, and a storm surge that exceeded 20 feet. Five public housing authorities (PHA) served this area and suffered unprecedented destruction to housing developments at 29 locations. Total damage was estimated at more than \$100 million, with 300 units destroyed and 1,700 damaged. Four of the PHAs are specific to coastal cities (Bay St. Louis, Biloxi, Long Beach, and Waveland), and the fifth (Region VIII) serves the city of Gulfport and other coastal areas.

HUD initially allocated \$5 billion in community development block grant (CDBG) funds to the State of Mississippi for “disaster relief, long-term recovery and restoration of infrastructure in the most impacted and distressed areas related to the consequences of hurricanes in the Gulf of Mexico in 2005.” The Mississippi Development Authority (MDA) administers the State’s Community Development Block Grant (CDBG) funds and earmarked an amount not to exceed \$100 million for public housing recovery from HUD’s hurricane CDBG allocation.

### **MDA’s CDBG Disaster Recovery Action Plan for Public Housing**

In the year following Hurricane Katrina, MDA developed its action plan for managing and disbursing the \$100 million in CDBG recovery funding. The purpose was to provide funding to the five PHAs that suffered damages to their facilities from Hurricane Katrina. Funds were allocated to each PHA based on its damage relative to the total for all five. The resulting allocations were as follows:

Biloxi:	\$41.164 million
Region VIII:	\$36.033 million
Waveland:	\$11.627 million
Bay St. Louis:	\$8.260 million
Long Beach:	\$2.914 million

The intent of MDA’s public housing program is to provide long-term recovery assistance by replacing critical public housing for low- and very low-income residents that existed before the storm on at least a “one-for-one” basis. The plan states that the PHAs may use the funds to rebuild and/or repair public housing units that existed before the storm. Subject to MDA’s approval and satisfaction of

legal requirements, the PHAs receiving these CDBG funds can use the funds to leverage other available resources (such as tax credits, tax-exempt debt, other grants) in developing affordable housing targeting low- and very low-income Gulf Coast residents.

In exchange for the CDBG funding, each PHA had to agree to a number of specific requirements, including the following:

- Newly constructed units are to be elevated in accordance with Federal Emergency Management Agency (FEMA) advisory flood elevations or subsequent FEMA permanent maps, and access needs for disabled persons are to be met for all units in accordance with CDBG requirements.
- PHAs are to provide proof of total financing to the satisfaction of MDA and the State's construction manager for all projects.
- PHAs are to provide proof of future cash flows to sustain operations.
- PHAs are to maintain 100 percent insurance coverage on replacement values of the property for all hazard types.
- MDA will be the responsible entity for obtaining compliance with HUD environmental laws and implementing regulations as provided at 24 CFR (*Code of Federal Regulations*) 58.5 and 58.6. MDA will be responsible for ensuring that the environmental review is completed and approved by HUD before requesting a release of funds before HUD funds are committed to the project. To assist in this review, MDA will engage an environmental contractor to perform the environmental work necessary.

All five PHAs chose to participate in the recovery program and agreed to MDA's conditions. HUD approved MDA's public housing program CDBG disaster recovery action plan on August 31, 2006.

### **HUD Policy on Construction in Flood Hazard Areas**

We researched HUD's policy for construction in flood hazard areas. Hurricane Katrina's heavy rain and storm surge caused extensive flooding. Our research focus was on the eligibility for CDBG recovery funding when the proposed project sites were vulnerable to flood and storm surge hazards.

Projects with HUD funding that are located within a flood hazard area or designated wetland are subject to Executive Order 11988 (Floodplain Management) and Executive Order 11990 (Protection of Wetlands). HUD must avoid financial support for covered projects under the provisions of these executive orders unless it can demonstrate that there are no practicable alternatives outside the floodplain or wetland. The requisite eight-step decision making process is set forth at 24 CFR 55.20 and includes determining whether

the proposed project is located in a floodplain, identifying and evaluating practicable alternatives, and mitigation measures to be taken if there is no alternative.

Owners of HUD-assisted properties that are located within special flood hazard areas must purchase and maintain flood insurance protection as a condition of approval of any HUD financial assistance for proposed property acquisition, rehabilitation, conversion, repair, or construction.

Executive Order 12898 (Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations) is also cited in HUD regulations. It applies to low-income or minority neighborhoods where the HUD-assisted project proposes the acquisition of existing housing, the acquisition of land for development, and new construction. The environmental review must determine whether the proposed site or neighborhood suffers from disproportionate adverse health and environmental effects relative to the community at large. If it does, the environmental review must consider mitigation or avoidance of adverse impacts from the project to the extent possible.

MDA's action plan specifically requires that each project proposed for CDBG recovery funding receive an environmental assessment that includes HUD's flood hazard area factors and be approved by HUD before the funds are committed to the project.

### **MDA's Process for CDBG Recovery Funding**

The PHAs develop and propose their own projects. This activity is often conducted in cooperation with professional real estate developers that specialize in public housing projects and funding options.

The PHA submits a letter of intent to MDA for each project it proposes for CDBG recovery funding. This action triggers MDA to request an environmental review from Camp, Dresser & McKee (CDM), a professional engineering and construction services contractor. CDM works directly with the PHA to gather information needed for the review. MDA also notifies HUD's Regional Environmental Officer in Atlanta, GA, of the proposed project and the start of the environmental review. CDM submits a comprehensive final environmental assessment report to MDA for each project, which is provided to HUD for approval.

### **Scope and Methodology**

We inspected project sites that were damaged by Katrina at all five Mississippi Gulf Coast PHAs as well as other proposed building sites, interviewed the executive or deputy directors of the five PHAs, and examined their administrative records related to the planning and recovery process. We examined official FEMA floodplain and flood insurance rate maps. We reviewed CDM's environmental assessments for 16 projects proposed for CDBG recovery funding. We interviewed the CDM supervising engineer and reviewed the scope of work section of its contract (CDM is also responsible for the environmental reviews, screening the CDBG grant applications, developing the procurement packages, and monitoring contract construction). We spoke to one developer working with a city PHA on several projects. We were briefed by HUD Jackson Office of Public and Indian Housing and Community Planning and Development staff on the status of Katrina recovery at five Gulf Coast public housing authorities. We discussed our field observations with the HUD Atlanta Regional Office Environmental Officer, who reviews and determines the acceptability of the environmental assessments for each proposed project.

We conducted the inspection in accordance with the *Quality Standards for Inspections* issued by the President's Council on Integrity and Efficiency.

### **Observation 1: MDA Has Awarded HUD Recovery Funding to 13 Projects and Is Reviewing 11 Proposed Projects**

As of August 31, 2008, MDA had awarded CDBG funds totaling \$24.5 million to 13 projects and was reviewing 11 additional projects. The initial CDBG funding requests for the 24 projects total \$81 million. If all 24 projects are approved, current estimates of the total CDBG funding that will be requested is \$91 million of the total \$100 million available. The five PHAs submitted letters of intent to MDA for eight additional projects proposed for CDBG funding but later withdrew them.

Hurricane Katrina damaged projects at 29 sites. Sixteen of these were repaired (two with CDBG recovery funds), nine sites were proposed for rebuilding (all with CDBG funds), and there are no plans to rebuild at four sites.

### **Observation 2: MDA's Environmental Assessments Identify Flood Risks at Project Sites and Specify Mitigation Requirements**

We examined the completed environmental assessments for 16 of the 24 proposed projects at MDA (the other eight were not complete and unavailable for review). CDM performed the environmental reviews, and each reported on all of the HUD-required compliance factors (statutes, executive orders, and regulations) identified at 24 CFR 58.5.

Of the 16 proposed projects' sites, nine were located in floodplain areas. We focused on the factors concerning flood issues (floodplain management and environmental justice) and the determination and compliance documentation. We also reviewed any mitigation measures adopted by MDA as the responsible entity and reported as conditions for approval that pertained to construction in a floodplain and resident safety.

Each of the 16 environmental reviews thoroughly assessed whether the proposed project site was in a flood plain. References checked were the latest available from FEMA and were identified and documented in appendixes to the environmental report. These references could include the advisory base flood elevation (ABFE) area and wave zones mapped by FEMA (both pre-Katrina and revised after Katrina), the FEMA Hurricane Katrina surge inundation map, the 100-year floodplain, FEMA's pre-Katrina flood insurance rate maps (FIRM), and the post-Katrina preliminary revised FIRM.

For the nine sites located in a floodplain, the status of the required eight-step decision-making process was reported in the environmental assessment, and it was included in the appendix. Documentation was provided for each of the completed steps.



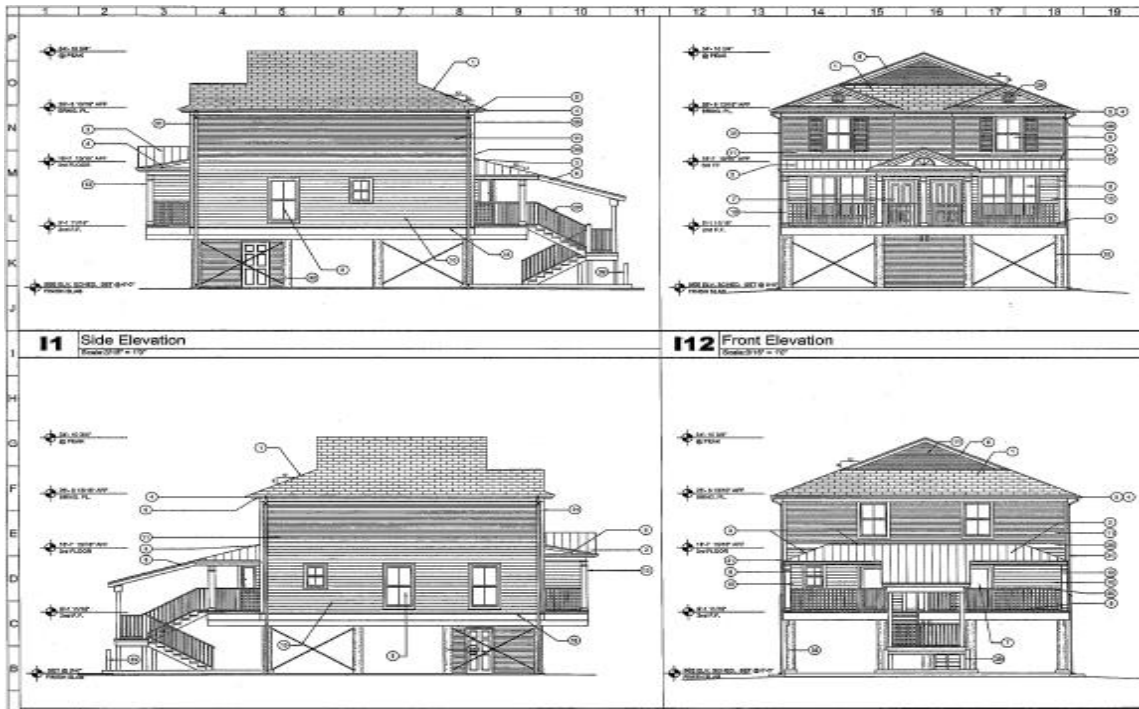
The environmental justice factor generally reported on the minority population in the area of the site before and after the proposed project. However, any potential safety-related issues affecting the residents because of the location of the site were reported; for example, “residents would have to evacuate their homes at times when storm surges could occur. This problem is shared by people of all income levels in Biloxi’s East End. The proposed buildings would be elevated on columns, reducing the risk of injury to the residents and damage to their property.”

All of the proposed floodplain projects with new construction require elevation to meet the revised ABFE or FEMA’s preliminary revised FIRM. In every case but one, the projects are being elevated on fill soil being brought to the site.



Region VIII housing authority’s Regency Way Apartments project, for example, is being built on elevated fill within brick retaining walls. This is the former Camelot Apartments site in Gulfport that was flooded by Katrina.

The East End Homes project must have its living spaces elevated 23 feet above sea level and will be built on columns. Below is the architect’s drawing of how 9 of the 15 buildings in the project will look.



These elevated structures are also not the only example of taxpayer-funded housing recovery on the Mississippi Gulf Coast. Approximately two miles west of the East End Homes project, the Department of Defense is spending \$287 million to build 1,028 new homes for Keesler Air Force Base personnel in Biloxi on coastal lowlands devastated by Hurricane Katrina. The new homes are being built on 18-foot elevations and with walls designed to withstand 140-mile-per-hour winds.

### Example of Analysis for the Eight-Step Process

The East End Homes project has been awarded CDBG recovery funds. The site required the eight-step decision-making process and special mitigation measures because of its location. Step three—identify and evaluate practicable alternatives to locating the proposed project in a floodplain—reports that three alternatives to the proposed project were considered. First, the no action alternative was

rejected because of the need for low-income units in Biloxi. Second, reducing the size of the project was rejected because the cost per housing unit would increase and the project objective was to alleviate the shortage of low-income housing. Finally, the third alternative considered was to relocate the project to another site. A survey of available land in Biloxi identified only three locations that appeared to have a reasonable likelihood of providing an alternative site that was zoned for multifamily housing, outside the ABFE and FIRM floodplains, not in a wetland, and not adjacent to the CSXT rail line. The analysis reports that it is generally very difficult to obtain city approval for public housing projects in zoning districts where multifamily housing is not permitted by right. Further investigation indicated that none of the three potential alternative sites is likely to be available for use by the Biloxi Housing Authority at reasonable cost, and the alternative of moving the proposed project to a different site was, therefore, rejected.

MDA also required special mitigation measures to reduce potential disaster impacts because the project is located in the 3-foot wave zone of the ABFE mapped after Katrina. These measures include the following:

- Obtain approval of the City of Biloxi for construction in the 3-foot wave zone of the ABFE floodplain.
- Obtain flood insurance for the total project at the maximum level allowed under the National Flood Insurance Program and maintain flood insurance at that level for the economic life of the project.
- Elevate the buildings above the ABFE using columns or piles.
- Mark the advisory base flood elevation in a prominent location on each building.
- Distribute to each resident a written description of the risk from flooding and wave action at the site.
- Require each resident of the building to sign a document acknowledging the risk of flooding at the site.
- Prepare an emergency evacuation and relocation plan and distribute the plan to each resident.
- Participate in an early flood and storm warning system.

HUD and PHA officials stated that the rigor of MDA's environmental review process has impacted moving forward with planned reconstruction. An MDA official advised us that PHAs subsequently withdrew eight projects submitted for CDBG disaster funding.

## **Conclusion**

After Hurricane Katrina, FEMA revised floodplain guidance in the affected areas, and HUD made \$100 million in grant funds available for public housing recovery through the State of Mississippi. As of August 31, 2008, the State had approved or was considering using these funds on a total of 24 developments proposed by the PHAs, 13 of which are in floodplain areas. The estimated total construction cost of the 24 proposed projects is \$231 million, including estimated total HUD funding of \$91 million.

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## **Acknowledgements**

This inspection was conducted and the report prepared under the responsibility of Ruth A. Ritzema, Deputy Assistant Inspector General for Investigations, Office of Investigation.

This inspection was conducted under the direction of Kenneth R. Taylor, Jr., Special Agent in Charge, Inspections and Evaluations Division.

The fieldwork was supervised by and the report prepared by Anthony Putzulu, Supervisory Forensic Auditor.

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