

Department of Homeland Security **Office of Inspector General**

Future Directions of FEMA's Temporary Housing Assistance Program





**Homeland
Security**

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Preface

The Department of Homeland Security (DHS) Office of Inspector General (OIG) was established by the *Homeland Security Act of 2002* (Public Law 107-296) by amendment to the *Inspector General Act of 1978*. This is one of a series of audit, inspection, and special reports prepared as part of our oversight responsibilities to promote economy, efficiency, and effectiveness within the Department.

This report addresses the strengths and weaknesses of the Alternative Housing Pilot Program and the Disaster Housing Pilot Project. It is based on interviews with employees and officials of relevant agencies and institutions, direct observations, and a review of applicable documents.

The recommendations herein have been developed to the best knowledge available to our office, and have been discussed in draft with those responsible for implementation. We trust this report will result in more effective, efficient, and economical operations. We express our appreciation to all of those who contributed to the preparation of this report.

A handwritten signature in black ink, appearing to read "D. Michael Beard".

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Abbreviations

DHS	Department of Homeland Security
FEMA	Federal Emergency Management Agency
GAO	Government Accountability Office
HUD	Department of Housing and Urban Development
JHSG	Joint Housing Solutions Group
LHFA	Louisiana Housing Finance Agency
LRA	Louisiana Recovery Agency
MEMA	Mississippi Emergency Management Agency
OIG	Office of Inspector General
TDHCA	Texas Department of Housing and Community Affairs
UFAS	Uniform Federal Accessibility Standards

OIG

*Department of Homeland Security
Office of Inspector General*

Executive Summary

After Hurricane Katrina, Congress required the Federal Emergency Management Agency to determine the most efficient and cost-effective means of providing post-disaster housing. Two programs designed to explore future directions for disaster housing are the \$400 million Alternative Housing Pilot Program and the \$1.4 million Disaster Housing Pilot Project. Both are providing insight for future disaster housing but demonstrate that significant timeliness and costliness issues remain to be addressed.

The Alternative Housing Pilot Program made grants to Alabama, Mississippi, Louisiana, and Texas to develop alternative forms of disaster housing while housing hurricane survivors. The grants resulted in more than 3,700 units of interim housing; more than 1,600 will remain as permanent housing units. However, completion of the projects was delayed, costs were significantly higher than planned, and community opposition significantly impacted many planned projects. The \$16.5 million Texas project encountered the most problems and was terminated by state officials after the developer had received more than \$5.5 million and had completed only six residences. The state was left with a warehouse of component parts that could potentially be assembled into 42 additional units. Most of the problems in developing innovative units and providing housing stemmed from flaws in the initial project concept, not in project management. States were given only 35 days to create and submit project designs. This forced states to rely on existing commercial designs, was not sufficient for estimating project costs, and did not allow time to test community acceptance of the units. Reaching agreement on project details with agency officials also delayed project efforts.

The Disaster Housing Pilot Project tested and evaluated 10 different types of housing units and provided more cost-effective insight than the Alternative Housing Pilot Program into possible future housing options. However, all of the units tested thus far by both programs have been more expensive than the trailers the agency has traditionally used.

Background

The Alternative Housing Pilot Program Mandate

The Post-Katrina Emergency Reform Act of 2006 (Post-Katrina Act) (P.L. 109-295) contained a requirement that a National Disaster Housing Strategy be developed, coordinated, and maintained under the Office of the Administrator, Federal Emergency Management Agency (FEMA). According to the Post-Katrina Act, among the requirements for the National Disaster Housing Strategy were that it “outline the most efficient and cost-effective Federal programs that will best meet the short-term and long-term housing needs of individuals and households affected by major disaster” and “describe plans for the operation of clusters of housing provided to individuals and households.”

The intent of Congress to improve disaster housing strategy was further demonstrated in the *Emergency Supplemental Appropriations Act for Defense, the Global War on Terror, and Hurricane Recovery, 2006* (P.L. 109-234). Section 2403 of that act authorized funds for “costs sufficient for alternative housing pilot programs in the areas hardest hit by Hurricane Katrina and other hurricanes of the 2005 season.” The Senate Committee on Appropriations stated in a press release that the \$400 million in appropriated funding was to fund a pilot program that would both develop “alternative sources of emergency housing” and serve as an “intermediate term housing solution for the Gulf Coast.”¹

To carry out the intent of Congress, FEMA officials developed an Alternative Housing Pilot Program (Pilot Program) grant competition to “identify, develop, and evaluate alternatives to and alternative forms of disaster housing.” The competition was limited to state-designated agencies of Florida, Alabama, Mississippi, Louisiana, and Texas. Through the competitive grant process, FEMA officials sought to identify new alternatives for housing disaster victims. By restricting the competition to the five gulf coast states, FEMA officials sought to comply with the congressional intent that those areas hardest hit by the 2005 hurricanes should receive the housing developed under these grants.

¹ U.S. Senate Committee on Appropriations Press Release, “Senate, House Conferees Approve Final Supplemental Spending Bill,” dated June 8, 2006.

The Alternative Housing Pilot Program Evaluation Process

When FEMA issued the Pilot Program Guidance and Application Kit on September 15, 2006, the designated agencies of the five states were given 35 days to develop as many project proposals as they wished to submit by the October 20, 2006, deadline. Twenty-nine project proposals were received. Some of the individual proposals envisioned developing more than one type of innovative housing, but most focused on a single type of unit.

An 11-member evaluation board, consisting of 8 federal government employees and 3 outside experts, reviewed each of the proposed projects to determine the extent to which each proposal met the following five factors:

1. The manner and extent to which the proposed alternative housing solution improves upon the conditions characteristic of existing temporary housing and improves long-term recovery;
2. The extent to which the option can provide ready-for-occupancy housing (obtained, transported, installed, repaired, constructed, etc.) within timeframes and in quantities sufficient to meet disaster-related needs under a range of scenarios, including sudden-onset catastrophic disasters;
3. Life cycle costs, including the costs to acquire, transport, install/construct/repair, and maintain each unit during the period it is occupied by disaster victims;
4. The capacity of the proposed alternative approach to be used in and adapted to a variety of site conditions and locations; and
5. The extent to which local officials and community organizations support the pilot program in the community in which it will occur.

The Alternative Housing Pilot Program Awards

FEMA officials reviewed the board's evaluations and prepared a decision paper for a Department of Homeland Security (DHS) senior manager who, serving as the Pilot Program primary selecting official, decided on the projects to be funded and the amount of funding for each project. The Pilot Program primary selecting official chose five projects:

1. Alabama's City of Bayou La Batre project would be funded up to \$15,667,293 (85% of a requested \$18,432,110). Under full funding of this proposal, 194 modular homes would have been constructed using cement fiber materials.

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2. Mississippi's Park Model and Mississippi Cottage project would be funded up to \$275,427,730 (68.9% of a requested \$400,000,000.) Under full funding of this proposal, 7,261 enhanced park model trailer units and 1,933 modular cottages would have been constructed.
 3. Mississippi's Green Mobile project would be funded up to \$5,890,882 (85% of a requested \$6,930,450). Under full funding of this proposal, 100 green mobile housing units would have been constructed of structural insulated panels.
 4. Louisiana's Katrina Cottages and Carpet Cottages project would be funded for \$74,542,370 (85% of a requested \$87,696,906). Under full funding of this proposal, 475 housing units consisting of a mix of single-family cottages and multifamily carpet cottages would have been constructed.
 5. Texas' Heston Group USA project would be funded for up to \$16,471,725 (85% of a requested \$19,378,500). Under full funding of this proposal, 250 prefabricated, panelized housing units would have been constructed.

FEMA officials notified the states of these awards in December 2006 and informed the public of the grants on December 22. FEMA officials then proceeded to work out grant terms and agreements with officials of the states before awarding the funds.

The Disaster Housing Pilot Project

Concurrently, in September 2006, FEMA launched the Joint Housing Solutions Group (JHSG) initiative as a multiyear effort to develop a systematic process to evaluate and rate various disaster housing options, identify viable alternatives to FEMA travel trailers and manufactured homes, and recommend improvements for conducting disaster housing operations. Among the primary goals of the group were identifying and assessing potential alternative housing units, pilot testing the most promising alternative housing units, and coordinating with the Pilot Program.

The group staff identified 10 potential types of disaster housing units for pilot testing. Under a Disaster Housing Pilot Project, these units were erected on the grounds of FEMA's National Emergency Training Center in Emmittsburg, Maryland. Students attending the Training Center programs occupied and rated the units.

Results of Audit

The Pilot Program effort provided more than 3,700 housing units to the gulf coast states. More than 1,600 units will serve as permanent housing, primarily for lower income residents. However, owing to the collapse of one state's project and cost overruns and completion delays with other projects, the Pilot Program has not been cost-effective. The Pilot Program and Disaster Housing Pilot Project have both demonstrated options for disaster housing that are better and safer, but initially more costly, than FEMA's traditional options. It remains to be seen whether either program will result in significant improvements in the Temporary Housing Assistance Program, although the Disaster Housing Pilot Project can provide a cost-effective way of analyzing options for improvements. Some of the Pilot Program projects encountered fewer problems than others, and two or three of the five projects could be considered to have met their goals. But all encountered extensive problems that reduced their effectiveness in providing housing and increased their costs. The projects experienced problems with some contractors and per unit costs were generally higher than expected, so fewer units were constructed. Most of the projects fell significantly behind schedule and community opposition reduced options for placing units, especially the more innovative units and group site units. FEMA- and state-level program managers responded to problems in a reasonable and responsible manner, but problems continued to arise.

It took FEMA and the states between 3 and 9 months to complete the grant agreements. Once the grant agreements were in place, the states had problems reaching agreements with some contractors. Once contracts were in place, finding communities that would still accept the Pilot Program units was fraught with constant problems and rejections that caused more delay. The environmental clearances also took longer than expected and sometimes brought projects to a standstill. Eventually, completion of the Pilot Program projects required between 3 and 5 years from the date of the grant announcements—completion times that would not meet FEMA's need for future short- and intermediate-term post-disaster housing. By the time the units were completed, many of the hurricane victims for whom the units were intended had found other housing, and many of the units that are being completed in the later parts of the projects have had to be made available to families other than hurricane victims. In some cases, the states have not yet found occupants for completed units. The more innovative units that constituted more of a break from past practice, such as the Carpet Cottages, the Mississippi Green Mobile units, and the Heston Group USA units, presented the most problems in developing and also had the hardest time achieving community acceptance.

Table 1 summarizes the material presented in this report.

Table 1. Alternative Housing Pilot Program Funding Timeliness and Number of Units Constructed

Pilot Program Projects	Proposal	# of Units Proposed	Amount Funded	% Funded	#of Units Built	% Built	Delays	Cost per Unit
Alabama City of Bayou La Batre	\$18,432,110	194	\$15,667,293	85%	100	52%	No	\$156,672
Mississippi Park Model and Cottages	\$400,000,000	7,261 Park 1,933 Cottages	\$275,427,730	69%	1,450 Park 1,625 Cottages	20% 84%	No	\$90,000
Mississippi Green Mobile/ Eco Cottages	\$6,930,450	100	\$5,890,882	85%	45 new units	45%	Yes	\$90,000
Louisiana Katrina Cottages and Carpet Cottages	\$87,696,906	475	\$74,542,370	85%	480	101%	Yes	\$155,000
Texas Heston Group	\$19,378,500	250	\$16,471,725	85%	6 and 42 unassembled units	2%	Yes	N/A

The Alabama City of Bayou La Batre Project

The Bayou La Batre project, providing 100 homes at two development sites, was the first of the Pilot Program projects completed. However, completion took nearly 3 years. The biggest delay was the process of working with FEMA officials to finalize the grant agreements. Because of the limited time to perform cost estimates prior to the grant proposal submittal and subsequent increases in project costs, only about 100 of the proposed units were completed. However, these units will become long-term public housing that should serve the community for many years, and space is available at the development site for more homes should funds become available.

Project Proposal and Award

The City of Bayou La Batre project proposal offered to construct 194 homes in a coastal community hard hit by Hurricane Katrina for \$18,432,110. The homes would be factory-built modular units constructed using cement fiber walls and able to withstand winds up to 150 mph. The units would be available in one-bedroom-plus-den and two-, three-, and four-bedroom single-story configurations ranging in size from 820 to 1,360 square feet. The one-bedroom-plus-den units would be single-wide units that could be detached and transported elsewhere if needed. The other types were double-wide units composed of two major components

transported separately from the factory in Florida and joined together at the housing site.

In the Pilot Program awards announcement on December 22, 2006, the Bayou La Batre project would be funded for up to \$15,667,293, 85% of the requested \$18,432,110. The state of Alabama proposed, and FEMA concurred, that the City of Bayou La Batre would be the grantee and program administrator for the Alabama Pilot Program project. The actual grant award was made on July 27, 2007. The 7 months between the announcement and the award were spent establishing the details of the award, including the management and oversight arrangements. Under the terms of the agreement articles, the period of performance was April 30, 2007, through April 29, 2011.

Project Progress, Problems Encountered, and Results

The City of Bayou La Batre and its consulting firm served as the developers of the project, contracting out the construction of the units to Palm Harbor, the Florida firm whose modular homes had been featured in the Alabama Pilot Program grant proposal. The city contracted with construction firms for site infrastructure, roads, playing fields, and other improvements and components. City officials said Community Development Block Grant funds were used for some infrastructure costs.

All of the units were to be located in two neighboring group sites on either side of a street in the suburbs. The sites were in one of the more desirable neighborhoods (and very near the city's mayor's home) and near a recently constructed school. Perhaps most important, the sites were in a highlands area, more than 82 feet above sea level. Some problems were encountered in closing on the sites, including community resistance from some neighbors who had concerns about how the development would appear and its effect on the community.

City of Bayou La Batre Project Cottage exterior and interior



Part of the City of Bayou La Batre development



The state highway department required the development to fund necessary highway safety improvements, including construction of a turnoff from the highway and a change in one of the access roads to provide better sight lines when approaching the highway. These improvements cost nearly \$2 million.

Project officials soon determined that the grant funds would not be sufficient to construct the anticipated number of units. They said this was partly due to the reduced level of funding that FEMA had provided, but also due to the tight FEMA deadlines for the grant proposals, which had not allowed adequate time to fully cost out the proposed projects. For example, the ramps to make the Uniform Federal Accessibility Standards (UFAS) units accessible for wheelchair and walker users cost \$13,577 per UFAS unit. Even after making some design changes, such as replacing the proposed metal roofs with composite shingle roofs, project officials determined that the budget would be sufficient to construct only 100 units: 6 four-bedroom units (1,360 sq. ft.); 19 three-bedroom units (1,155 sq. ft.); and 75 two-bedroom units (including the ten 820-square-foot one-bedroom-plus-den single-wide deployable units).

A construction contract was signed in June 2008, and production at the factory was quickly initiated. Delays in delivery occurred when

the Florida Department of Transportation held up some units that exceeded highway size limits. With help from FEMA personnel, project officials were able to get permission for all of the units to be transported to the site. At site, delays in site preparation were caused by extended periods of bad weather, construction companies closing during the holidays, and environmental review approvals. Project officials said that FEMA officials were helpful, but turnover among FEMA staff led to conflicting advice for the project.

The first units were completed in November 2008, and 30 units were complete by the end of the year. All of the units were ready for occupancy by July 2009. The project staff had already mounted a campaign to notify all eligible families of the availability of the homes. Current residents of FEMA housing had priority, followed by families that had received FEMA assistance and still needed permanent housing. Within these groups, Bayou La Batre residents had priority. Selected families paid rent proportionate to their income and had to pass a background check. At the time of our site visit, the Alabama project was in the process of being converted to rental public housing under a City of Bayou La Batre Public Housing Authority that was being developed. Rents will be charged based on ability to pay, and the project will be managed in accordance with U.S. Department of Housing and Urban Development (HUD) guidelines.

Project officials said that the completed units cost about \$88,000 each before land acquisition and infrastructure costs. Land acquisition costs were only \$648,201, but infrastructure costs were around \$3.7 million, funded with project funds and nearly \$2 million in Community Development Block Grant funds. The total costs, including furnishings, were reported as \$180,000 per unit. Space is available in the developments for more public housing units should additional funds become available. By the time the units are converted to a Public Housing Authority project, the average unit will have served as interim housing for disaster survivors for about 2 years.

Project officials said the city and the residents are pleased with the housing and consider the project a success. They have produced safe houses in a very livable development with an attractive appearance. Some of the units had moisture problems, but these were corrected by installing vapor barriers and dehumidifiers and by routing air-conditioner unit drains farther away from the houses. As the houses were constructed, community opposition to the

project diminished; people saw how the modular homes and the development fit in, and the development operated successfully.

The Mississippi Park Model and Mississippi Cottage Project

The \$275.4 million Mississippi Park Model and Mississippi Cottage grant resulted in the construction of 3,075 housing units, most of which were used to house victims of hurricanes Katrina and Rita. More than 1,000 of these units have been converted to permanent homes and as many as 2,000 units could eventually become permanent homes, most for lower income residents. The major problem encountered by the project was gaining acceptance from communities for the units, especially as permanent housing. The delays in reaching agreement with FEMA on the details of the grant and disbursing funds allowed community resistance to increase. Nevertheless, most of the units were in place as temporary housing by December 2009.

Project Proposal and Award

The Mississippi proposal offered to construct 7,261 Park Model housing units and 1,933 Mississippi Cottages for \$400 million. The Park Models proposed, at 462 square feet per unit, were similar in size to FEMA park model trailers but had several enhancements, including improved durability, ability to withstand winds of up to 150 mph, 8-foot ceilings, attic storage space, ENERGY STAR heating, ventilation and air-conditioning systems, no roof penetrations, rot/mold/moisture-resistant materials, a front porch, and a style reflecting the Mississippi gulf coast architectural heritage.



A Mississippi Park Model

The Mississippi Cottages were modular housing units available in two-bedroom (812 sq. ft.) and three-bedroom (924 sq. ft.) models. The units were designed to be more durable than the manufactured

housing, widely known as mobile homes, used by FEMA after past disasters, and their inherent structural rigidity would allow them to be removed from their carriages and placed on foundations as permanent residences. Like the Mississippi Park Models, they were designed to fit in with the architectural traditions of the Mississippi gulf coast.



Mississippi Cottages

In the Pilot Program awards announcement on December 22, 2006, the Mississippi Park Model and Cottage project award was funded for up to \$275,427,730, or 68.9% of the requested \$400 million.

Project Progress, Problems Encountered, and Results

State officials had hoped to begin the project on January 1, 2007, but the Mississippi Emergency Management Agency (MEMA) needed to produce a management plan and coordinate articles of agreement with FEMA before the project could proceed. During these discussions, the number of units projected to be constructed was reduced to 4,000, and it was agreed that more of the costlier two- and three-bedroom units and fewer of the Park Models were needed. (This decision was later validated by the fact that the Park Models were less accepted by both potential occupants and the communities than were the larger units.) Notice to proceed with the project was issued on April 4, 2007, with a grant period of performance from April 1, 2007, through March 31, 2011.

Construction of the Park Models and Mississippi Cottages was contracted out using competitive bidding to seven factories, each of which had quality assurance/quality control employees of the state's contracted engineering firm on site. The competitive bidding process took more than 2 months. The first of the completed Park Model units had been shipped to the transition site/staging areas in the Mississippi gulf coast, passed inspection, and were occupied by June 2007. The first Mississippi Cottages

were delivered and accepted in August 2007. The last of the units were received in December 2009. Ultimately, MEMA accepted 3,075 units from the six manufacturers: 1,450 Park Models, 600 two-bedroom Mississippi Cottages, 600 two-bedroom UFAS-compliant Mississippi Cottages, 325 three-bedroom Mississippi Cottages, and 100 three-bedroom UFAS-compliant Mississippi Cottages.



Kitchen of a Mississippi Cottage

MEMA provided the units to eligible individuals, with the size of the unit based on the number of people to be housed. The individuals had to be residents of the three Mississippi coastal counties (later expanded to six counties) who had lost their residences to Hurricane Katrina and were living in FEMA trailers or mobile homes. No group sites were established. The units were set up on land to which the potential occupants could show title or on rented sites, including trailer parks. MEMA covered the setup costs and provided the units rent-free; however, the occupants had to pay their own utilities and had to pay their own space rent if in a trailer park.

MEMA paid the manufacturers around \$34,000 to \$36,000 each for Park Model units, \$46,000 to \$51,000 for the two-bedroom units, and \$48,000 to \$52,000 for the three-bedroom units. The cost of installing a temporary unit at a site averaged \$10,897 per unit.

Two subsequent disasters affected the course of the program. On September 1, 2008, Hurricane Gustav struck Mississippi with high winds and flooding. MEMA officials told us that the Park Models and Mississippi Cottages proved very resistant to high winds and suffered little wind damage, but significant numbers of units in lower elevation areas were severely damaged by floodwaters. MEMA had insurance on all of the units, and those that were

damaged were either repaired or “totaled” and taken by the insurance company. MEMA was reimbursed at what its officials consider a fair discounted value (85% of the original cost of the unit) for the 255 units damaged beyond repair, a total of \$8,508,307. In keeping with FEMA requirements, this money was put in the MEMA Pilot Program operating fund. In March 2010, after severe tornados struck central Mississippi, FEMA authorized MEMA to use some of the MEMA Pilot Program units to house disaster victims. Within 25 days, MEMA was able to relocate unoccupied units for tornado survivors whose residences had been destroyed.

By May 2009, MEMA had started the transition from state-provided interim housing to occupant-owned permanent housing. MEMA sent out a “permanent housing survey” to determine which occupants were interested in purchasing their units. Occupants who met qualifications, including having the unit as their primary residence and having a secure owned or leased site for the unit with authorization from the city or county, were able to purchase the unit for a cost that varied with ability to pay. MEMA sold more than 1,000 units for between \$351 and \$13,096 per unit. Under local building codes, making the units into permanent residences generally required placing them on permanent foundations. MEMA paid the costs of permanent placement of most of the units when these costs were above the financial ability of occupants. The total costs of converting the units to permanent housing were just over \$16 million, or just over \$15,000 per residence.

By the time of our March 22, 2011, site visit, 1,068 MEMA Pilot Program units had been sold to occupants, and 242 units were still in the process of enabling the occupants to acquire the unit on a permanent basis. MEMA also had transferred 451 units to nonprofit organizations and government entities and anticipated donating an additional 143 units. Approximately 206 units were still awaiting disposition decisions.

MEMA disposed of 710 used units that were no longer needed for the program through public auction in 2010: 483 Park Models, 190 two-bedroom units, and 37 three-bedroom units. Park Models sold for around \$7,000 to \$11,000, two-bedroom units for around \$18,000 to \$19,000, and three-bedroom units for around \$18,000 to \$22,000. As in the case of the insurance proceeds, funds from auctions were used to continue program operations. MEMA

officials told us that any remaining units whose occupants cannot or will not purchase them will probably also be sold at auction.

MEMA officials are generally satisfied with the Pilot Program. The program produced 3,075 units of housing, of which all but a few arrived in time to be used as transitional housing. Although it was planned to convert only 500 units to permanent housing, the program is now expected to result in around 2,000 permanent housing units.

MEMA officials are also generally satisfied with the quality of the units. Although there were some problems with manufacturers, the quality assurance/quality control and inspection processes worked to overcome them. The biggest consistent problem was one type of air conditioner used in Park Model units that often failed to drain properly, resulting in mold and other water problems. There were also some problems with moisture from leaks near doors and condensation from dryer vents weakening floors. In general, the units were very satisfactory as interim housing that met both HUD and the International Residential Code standards. Once the program was fully under way, manufacturers were able to produce each cottage unit in 4 to 5 weeks, and at the peak of the program more than 400 units were being installed in a month. The need to transfer units to central Mississippi after the tornados struck showed that the units could be quickly dispatched and installed at a new disaster site. Even though the Park Models fill the need for a unit that is flexible in small spaces, the two- and three-bedroom units were the most popular models.

The biggest problem the MEMA Pilot Program faced was in gaining acceptance and support from local jurisdictions, even though the state administration, including the Governor's office, was very supportive of the program. MEMA staff had worked with local officials from the beginning to gain acceptance of the Pilot Program units, but they continued to meet resistance. As time passed from the disaster event, jurisdictions become more resistant to small cottages as permanent housing. The Park Models encountered the most rejection, but it was also an ongoing struggle to get local governments to accept cottages as permanent residences. Some of the later community resistance to permanent units was caused by the fact that people had been led to believe that these units would be temporary, and they were opposed to the program's subsequent change to focus on more cost-effective permanent placement for the cottages.

The biggest project delay was at the beginning, in getting the agreements with FEMA in place. This delayed the disbursement of FEMA funds and set back project initiation. These delays and the subsequent passage of time resulted in a reduced pool of potential applicants.

In general, MEMA officials said they had a very good rapport with FEMA and considered the FEMA Pilot Program office to be cooperative and supportive. In addition to interacting with FEMA Pilot Program headquarters staff, MEMA officials were in continuing contact with a FEMA Pilot Program coordinator who was stationed in Mississippi from April 2007 to September 2008.

The fact that the eventual owners of permanent units were unable to pay for the site work required for the conversion to permanent housing increased the costs of the project. Much of this expense was unanticipated. Likewise, it was assumed that units could be donated to nonprofit organizations with no additional expenses. However, the nonprofit organizations needed financial help with placing the units at sites.

In all, the Mississippi Park Model and Cottage Pilot Program project provided interim housing and support services for about 2,900 families or individuals from as early as 2007 to as late as 2011.

The Mississippi Green Mobile (Eco Cottage) Projects

The Mississippi Green Mobile Projects, later renamed the Eco Cottages, encountered extensive delays and had resulted in only one completed housing unit as of our site visits in early March 2011. By the time the units are completed in late 2011, they will be too late to be used by the intended beneficiaries, the families who lost their homes to hurricanes Katrina and Rita. Nearly a year's delay was encountered in finalizing the grant agreement with FEMA. Delays were also encountered in developing the detailed project architect and engineer designs for the green mobile units. When the design was completed, it was generally rejected by community leaders and was, therefore, deemed unsuitable for their region by Mississippi officials and was canceled. The Eco Cottages, a replacement project being built in cooperation with two nonprofits, will result in far fewer units than the original proposal and will not be completed until late in 2011.

Project Proposal and Award

The Mississippi Green Mobile grant proposal offered to construct 100 green mobile housing units for \$6,930,450. The goal of the project was to demonstrate the merits of a cutting-edge approach that provides an improved emergency housing alternative, emphasizing innovative site design features, green building technologies, reduced energy consumption, and an open interior design that could be adapted to varied family needs. The units would be constructed of structural integrated panels and transported to site on a wheeled undercarriage, with “clip-on” pods and porches subsequently added. The FEMA evaluation panel rated this proposal the highest of all the competing proposals.

In the Pilot Program awards announcement on December 22, 2006, the Mississippi Green Mobile project was funded for up to \$5,890,882, or 85% of the requested funds. The grant award was not issued until nearly 11 months later, on November 20, 2007, with a period of performance of November 1, 2007, through October 30, 2011.

Project Progress, Problems Encountered, and Results

The project encountered further delays after the grant award was made. A February 2, 2009, review of the MEMA Pilot Program effort stated that the housing units were “currently in the design phase,” and a January 10, 2010, MEMA overview of the Pilot Program said that the program was on hold “with the purpose of using the Eco Cottages as part of a long term housing solution within certain group sites such as a retirement community.”

MEMA officials contracted the design of the Green Mobile units to a firm that experienced some delays in delivering the agreed-upon design work. MEMA officials considered that the final product met applicable standards, and the firm was paid \$186,422. However, MEMA officials did not consider the design to be viable for the gulf coast communities, as it was too modern and unconventional to fit in with the traditional gulf coast architecture. In addition, the local jurisdictions were proving very resistant to any plans that involved group sites. MEMA officials decided to drop this project and search for partners who could develop units that would still be ecologically sound units: the Eco Cottages.

On May 1, 2009, MEMA announced a competition for subgrants to government entities or nonprofit organizations that would tailor-fit

Eco Cottages into village or subdivision settings within Mississippi's six southernmost counties. Its intention was to award two subgrants, each for 20 or more cottages and each meeting standards for environmental sensitivity and energy efficiency, and to provide long-term housing for disaster victims.

MEMA officials selected Mercy Housing and Human Development, Inc., of Biloxi, Mississippi (Mercy Housing) and Habitat for Humanity Bay-Waveland Area, Inc., of Bay St. Louis, Mississippi, (Habitat for Humanity Bay-Waveland) to develop and administer the Eco Cottage projects. However, getting both of the nonprofits through the federal grant compliance process and helping them find suitable sites and obtain acceptance from local jurisdictions led to additional delays.

On February 17, 2010, a cooperative agreement was signed between MEMA and Mercy Housing, which would receive a subgrant of \$2,152,500 plus a transfer from MEMA of 16 one-bedroom Mississippi Park Model Cottages and 14 two-bedroom Mississippi Cottages in "as is" condition. These units had been constructed under Mississippi's other Pilot Program grant and had already been used as interim housing. Mercy Housing agreed to construct 45 Eco cottages and place them, along with the 30 transferred units it would restore, on two sites in Pass Christian and Ocean Springs, Mississippi. The period of performance extends through March 31, 2012. The completed units are to be managed by Mercy Housing as affordable rental housing for lower income households, since by this point FEMA had acknowledged that MEMA had already provided housing for disaster survivors.

On March 12, 2010, a cooperative agreement was signed between MEMA and Habitat for Humanity Bay-Waveland under which Habitat for Humanity Bay-Waveland would receive a subgrant of \$1,722,000 to construct 20 Eco Cottage units in Bay St. Louis. The completed units would be sold at appropriate prices to lower income individuals and households. As in the case of the Mercy Housing units, the individuals to be housed no longer needed to be disaster survivors.

In March 2011, the Mercy Housing site in Ocean Springs did not have any structures under construction. However, the site in Pass Christian had Eco Cottages in various stages of construction. The cottages were being constructed by professionals using offsite-prepared wood panel sections. Mercy Housing officials plan to complete all construction by October 2011.



Mercy Housing Pass Christian, Mississippi, Eco Cottages under construction

The Habitat for Humanity Bay-Waveland site in Bay St. Louis had some nearly completed Eco Cottage structures and others being built by Habitat for Humanity professionals assisted by large numbers of volunteers. The cottages were being constructed using traditional methods with some preconstructed panels. Habitat for Humanity Bay-Waveland officials plan to complete the units using this summer's volunteers.



Habitat for Humanity Bay St. Louis, Mississippi, Eco Cottage under construction

MEMA officials agreed that the Green Mobile/Eco Cottage project encountered extensive delays. They tried to make the original concept work for longer than they should have once it was apparent it was unlikely to succeed. They conceded that the project may not have received management focus since they were occupied in managing the larger Park Model and Mississippi

Cottage Grant. Consequently, in addition to not providing the leading-edge Green Mobile units that had been planned and funded, this project will not be completed in time to provide housing for victims of the 2005 hurricanes. It will, however, provide homes for families in need at a cost of around \$90,000 per unit.

The Louisiana Katrina Cottages and Carpet Cottages Project

Construction of most of Louisiana's 480 Pilot Program cottages is complete. More than 8 months passed before grant agreements with FEMA were completed. The state then took 10 months to move the project from one state agency, which had started preliminary planning, to a second state agency to manage the project. The project also encountered community opposition, except for one development that was located on state land for the use of state employees. Only the state-owned site was willing to accept Carpet Cottages. Many of the Louisiana Katrina Cottages are being completed too late to serve the needs of the families displaced by hurricanes Katrina and Rita. However, the project is now fully operational, and all of the units should be completed by the end of 2011.

Project Proposal and Award

The Louisiana Katrina Cottages and Carpet Cottages grant proposal offered to construct 475 units of housing, a mix of single-family Louisiana Katrina Cottages and multifamily Carpet Cottages, for \$87,696,906. The Louisiana Katrina Cottages were factory-built homes with a porch and a choice of one-, two-, or three-bedroom layouts ranging from 874 to 1,112 square feet in size in five floor plans and a variety of designs that reflected local architectural traditions. The units featured wood frames and pier-and-beam foundations, and could be expanded. The Carpet Cottages were innovative one-story multifamily units that were attached and offered a selection of one-, two-, and four-bedroom units in a single site. Cypress Cottage Partners of Baton Rouge developed the project proposal.



Louisiana Katrina Cottage

In the awards announcement on December 22, 2006, the Louisiana Katrina Cottages and Carpet Cottages proposal was funded for up to \$74,542,370, or 85% of the requested \$87,696,906. The Louisiana Housing Finance Agency (LHFA) was the program administrator for the Louisiana Pilot Program. The grant agreement was not made until September 7, 2007. More than 8 months were spent establishing the details of the articles of agreement, including management and oversight arrangements, and amending the state's original application package. The period of performance was established from September 17, 2007, through September 16, 2011.

Project Progress, Problems Encountered, and Results

One of the topics of discussions with FEMA officials was the Louisiana officials' intention to locate some of the Pilot Program housing units at the Louisiana State Military Department's Jackson Barracks. Jackson Barracks is the historic headquarters of the Louisiana National Guard and was severely damaged by Hurricane Katrina and the resultant flooding. The state wanted to construct Pilot Program housing on base at Jackson Barracks for the exclusive use of state employees: National Guard troops and State Military Department civilian employees. On November 2, 2007, LHFA officials wrote to FEMA requesting that the selection of residents be modified to meet the concerns of the State Military Department. They argued that, "There is a compelling need to locate [State Military Department] employees, members, and their respective families at Jackson Barracks so they may carry out their essential functions, including, but not limited to, first responder and Homeland Security functions with which they are charged." They further argued that, "Because of the Homeland Security

requirements, emergency response mission, and sensitive operations equipment and infrastructure, having persons from outside the organization within and on the Jackson Barracks' premises is inconsistent with the effective and safe use of the site." FEMA officials subsequently approved the state's request for exclusive use by state employees of the Jackson Barracks housing units.

For the next 5 months, LHFA managed the project, including signing, on October 12, 2007, a developer services contract with Cypress Realty Partners, LLC, to manage the project. The LHFA officials made the award without competition since Cypress had designed the original proposal that was submitted and selected for funding. Budgets were developed, some work orders were issued, and some environmental clearances were under way. Then on February 29, 2008, the Governor of Louisiana directed the Louisiana Recovery Agency (LRA) to assume responsibility for administering the \$74.5 million program as part of the ongoing efforts to streamline the state's recovery from hurricanes Katrina and Rita. FEMA officials said that was the state's prerogative and played no role in this decision.

It took 5 months for the LRA to complete the program transfer from LHFA and to sign a new contract with the same developer. The state auditor had recommended that the contract for developing the units be competed, but LRA officials argued it was not required and not practical since Cypress Partners was the creator of the project. LRA officials said they renegotiated the contract to reduce the developers' fees and create benchmarks for contractor performance. One of the partners backed out of the developer consortium at this time in response, the LRA believes, to the reduced fees and profits.

In addition to the Jackson Barracks units, Louisiana Pilot Program housing was constructed in various areas of New Orleans on group sites and as fill-in units on scattered sites in the Westwego area of Jefferson Parish, and in Baton Rouge and Lake Charles. Only the Jackson Barracks site received any Carpet Cottages. The LRA had tried to arrange for Carpet Cottages to be built at other sites but encountered too much community opposition. Eventually, only the Jackson Barracks site, where the state had full decision-making authority, allowed for the denser occupancy Carpet Cottages.



Carpet Cottages at Jackson Barracks—exterior and entrance to a unit



Kitchen of Louisiana Carpet Cottage

Construction of the Jackson Barracks units was delayed when the site development work needed for the first location selected proved too costly and another area of the barracks had to be selected. Nevertheless, construction of the single-family cottages at Jackson Barracks started in February 2009 and was completed in December 2009. Construction of the Carpet Cottages started in August 2009 and was completed in April 2010.



Jackson Barracks Louisiana Katrina Cottage Pilot Program housing units

In Baton Rouge, 42 single-family cottages were placed at a group site within an existing subdivision as part of a joint venture between the state and a foundation. Construction started in February 2009 and was completed in January 2010.

In Lake Charles, a group site and city-acquired scattered sites have been developed in conjunction with two nonprofit partner organizations. Construction of the 34 single-family cottages at the group site started in April 2009 and was completed in December 2009. Construction at the 35 scattered sites started in November 2009 and was completed in February 2011. Not all of these units had occupants at the time of our site visit in March 2011.



Lake Charles Louisiana Katrina Cottages group site

The Westwego group site in Jefferson Parish features 27 single-family units built on land purchased from an adjacent church. The units are being rented as a senior community to persons over 55 years of age.

The Housing Authority of New Orleans has a group site in Orleans Parish with 124 single-family cottages that will be a combination of rentals and owner-occupied units. Construction started in August 2009 and was completed in March 2011. The other group sites and scattered units in New Orleans being developed with five different partners were not completed as of March 2011. Three of the partners had not yet started construction but are completing site preparation and obtaining authorizations. These five partnerships are expected to complete a total of 127 units in 2011.

State officials said that, in addition to the delays caused by the initial agreements with FEMA and the change of state agencies in charge of the project, other delays were caused by the environmental clearance process, problems in gaining community acceptance, and the need to find qualified tenants and purchasers. As a consequence, by the time many units are ready for occupancy, most of the target population will have found alternative housing solutions.

The major cause of cost increases was the cost of land, which turned out to cost twice as much as planned because donated property was not available, and planned use of some state property was not legally feasible. Nevertheless, state officials plan to deliver 480 Louisiana Pilot Program housing units by the end of this year, 5 more than proposed in their grant application. If they are successful in doing so, the grant funds cost will be approximately \$155,000 per unit.

Louisiana had proposed to build all steel-framed units for higher wind resistance, but the factory-built modular units had to be constructed with wood framing because the factory could not handle steel framing. There were some construction problems, including improper dishwasher installations and other quality issues. However, the only major problem was in Lake Charles, where several units have had problems with deteriorating flooring caused by incompatible permeability of flooring and subflooring materials.

State officials said that they had a good relationship with and cooperation from FEMA officials both at the Pilot Program headquarters office and at the regional level. They also had the support of a FEMA program specialist who has been in Louisiana since late 2007. This program specialist was very knowledgeable concerning both the Louisiana project and the Pilot Program.

The Texas Heston Group Project

The Texas Pilot Program project has been terminated, after more than 2 years of effort and the expenditure of over \$5.5 million, with the production of only 6 housing units. Texas state officials said the principal problem was the housing developer/contractor's failure to perform. In addition, the project was significantly impeded by a slow environmental clearance process and community reluctance to accept the housing units.

Project Proposal and Award

Texas' Heston Group USA proposal offered to construct 250 units of prefabricated panelized housing units for \$19,378,500. The units were proposed by a U.S.-based affiliate of Heston International and were to be similar to units that were reported to have been used successfully by U.S. forces overseas. The units were constructed in Italy and shipped as flat packs that supposedly could be assembled in 8 hours by four workers and be ready for occupancy within a week of delivery.

In the awards announcement on December 22, 2006, the Heston Group project was funded for up to \$16,471,725, or 85% of the requested \$19,378,500. The Texas Department of Housing and Community Affairs (TDHCA) was to administer the program.

The grant award was not made until September 17, 2007, and had a period of performance from January 7, 2008, through December 31, 2011. The award was delayed by negotiations concerning project details and delays by TDHCA in providing FEMA with detailed technical information concerning the project. The TDHCA plan by this point was to provide 40 to 50 homes at individual sites in east Texas areas and 20 homes at a group site in the Houston/Harris County area where homes had been destroyed by Hurricane Rita.

Project Progress, Problems Encountered, and Results

On April 1, 2008, a contract was signed with Heston Group USA to serve as the project developer for all of the units. Major problems were encountered from the beginning of the process. TDHCA officials had been under the impression that sufficient units were already present in the United States to start the project, but this did not prove to be the case, and the initial group of units took 90 days to deliver, significantly slowing the production schedule. In addition, the FEMA contractor that was handling the environmental clearance process did not perform in a timely manner. The environmental clearance process for the first 10 sites missed several estimated completion dates, took 9 months to complete, and at times brought the process to a standstill. Repeated TDHCA requests for information from the environmental contractor were not answered for weeks on end. TDHCA officials said that they believed the contractor had other work going on and that the TDHCA project was pushed to the bottom of the contractor's priorities. When TDHCA requested

help from FEMA in improving the performance of this contractor, it resulted in FEMA granting an extension to TDHCA for the process.

More delays were experienced with the turnkey construction contractor. Heston Group USA would not provide a firm timeline for how long it would take to have a ready-for-occupancy unit in place once the environmental clearance process and other permits were completed. The contractor could not deliver the product within an agreed-upon timeframe. The completion date for the first unit was pushed back time and again without significant explanation. The times from start to ready-for-occupancy for the six units ranged between 40 and 137 days.

In addition, four of the six units had construction problems, including subfloor water intrusion, improperly graded sewer lines, foundation and electrical problems, mold problems, and a faulty air conditioner. Some of these problems were caused by inexperience and poor training on the part of the contractor's crews. TDHCA officials said the contractor experienced such high staff turnover that different crews completed each of the six units.

TDHCA officials said that because of the delays, the demand for the units diminished as hurricane victims found other housing. In addition, community resistance grew as time passed. Some said the units were too industrial in appearance, looking like storage units. Cities wanted homes larger than 640 square feet. Harris County and Houston eventually dropped having either a group site or scattered units of the proposed housing.

TDCHA encountered other significant problems in contractor performance: Required reporting was not provided, and requests for cost justification and production scheduling went unanswered for 13 months. Quarterly reports were consistently submitted late, and travel costs were not appropriately documented and appeared unreasonable. Numerous requests for documentation, such as for budget items, went unanswered. Requests from FEMA for foundation information took three months to receive a response.

TDHCA sent Heston Group USA a default letter on May 12, 2009, with further clarification on June 12, 2009. The May 12th default letter cited numerous performance problems, including high staff turnover, poor fiscal controls, failure to submit required progress reports, and slowness in completing housing units. The default letter requested specific corrective plans and actions from the

contractor. TDHCA officials even provided Heston Group USA with guidance to respond to the default notice, as TDHCA was seeking a realistic reset for the contract. Heston Group USA provided a response that TDHCA officials did not consider adequate. Therefore, the contract was terminated on July 31, 2009. In March 2011, Heston Group USA filed suit against the state of Texas.



Completed Heston Group USA housing unit

From the award of the contract through the termination date, Heston Group USA received \$5,547,034.32. A subsequent TDHCA internal audit of the contract concluded that Heston Group USA was reimbursed for questionable costs but could not determine the exact amount because of inadequate access to company documents. In addition to the 6 completed units, TDHCA was left with an estimated 42 unassembled units in a Houston warehouse that the contractor had leased. In the warehouse were many unmarked and unorganized panels along with some damaged ones, and TDHCA officials are uncertain as to how many homes could actually be constructed using the materials. Ownership of the six completed units has been transferred free of charge to occupants of the units. TDHCA officials are attempting to transfer ownership of the unassembled units to a nonprofit organization that could use them to provide low-income housing.

As of May 19, 2011, TDHCA officials were still awaiting guidance from FEMA on what steps they need to take to close out the grant. FEMA officials said that the final disposition decisions for the remaining portion of the grant have not yet been determined.

Although the Texas Pilot Program was clearly unsuccessful, TDHCA officials believed that they had taken responsible actions to manage the project. However, they were not able to devote staff attention to the Pilot Program for about 6 weeks after Hurricane Gustav struck Texas, requiring all of their time and focus. Hurricanes Ike and Dolly and a significant tropical storm also reduced TDHCA's ability to focus resources on the Pilot Program during its operation.

In addition to the extensive performance problems experienced with FEMA's environmental clearances contractor, TDHCA officials said that FEMA's staffing and guidance was inconsistent and did not provide as much assistance as they would have liked.

The Disaster Housing Pilot Project

The Disaster Housing Pilot Project is to evaluate innovative alternative housing options by using them as student housing at a FEMA training facility. It is part of the JHSG effort to identify and evaluate alternative means of housing disaster survivors as directed by the Post-Katrina Act. Although the results of the evaluations are not yet complete, the project is providing a cost-effective means of identifying and testing alternative housing units.

In June 2008, FEMA invited manufacturers to bid on contracts for supplying alternative housing units. Thirty responses were received and evaluated. The potential suppliers' units were assessed by using a Housing Assessment Tool, a systematic method for evaluating alternative housing. Potential contractors were required to provide specifications and pictures of their proposed units and answer 255 questions concerning the units and the offering company. Seven awards for individual housing units were made. A second solicitation with slightly different specifications was announced on August 2009, and three awards were subsequently made. Two of the units being evaluated, the Mississippi Cottage and the Heston Group USA unit, are housing types that were also part of the Pilot Program. The selected alternative housing units present a variety of approaches to disaster housing.



Housing units being tested at Emmittsburg, Maryland

The costs of the units, which differ significantly in size, ranged from approximately \$19,000 to \$70,000, including installation at the seven FEMA-prepared sites. The unit costs were higher because the units were equipped with fire-suppression systems owing to their use as student temporary housing. This would not be the case where local fire codes do not specify that homes must have sprinkler systems. However, all of the units cost more than comparable travel trailers, park models, and manufactured housing units that FEMA traditionally has used after past disasters.

The units were installed on the grounds of FEMA's National Emergency Training Center, where they served as student housing while they were being evaluated. This allowed students to test the durability of units and provide occupant satisfaction surveys. The seven original units were tested for a year, and three of the units were then replaced by the three units from the second solicitation.

An initial evaluation of the units' suitability, durability, materials' quality, and occupant satisfaction was completed and submitted to FEMA management by May 2011. Further evaluations, including evaluations of the newer units, will be conducted in coming months. FEMA staff will produce reports comparing traditional FEMA housing with the alternative housing units, addressing such issues as costs, livability, comfort, safety, and power usage. Continuing feedback concerning the results of the

evaluations is being provided to the manufacturers, and FEMA officials expect this dialogue to result in further improvements.

Thus far, the total cost of the Disaster Housing Pilot Project has been \$1.4 million. However, it appears that the program will be put on hold when the current round of tests and evaluations is completed because further funding for the program will not be available.

Conclusion

The root causes of the problems that the Pilot Program grants encountered and the limitations on the utility of the units developed for future FEMA operations are not in how the program was implemented or in the management by state or FEMA officials, but rather in the program design and in decisions made when the program was initiated in 2006. The very concept of the program as legislated preordained it to be difficult to implement. The program had two primary goals and objectives: to develop “alternative sources of emergency housing” and to serve as an “intermediate term housing solution for the Gulf Coast.” Developing truly innovative alternative types of housing requires an innovative and even experimental process, which takes time and planning and involves some risk of failure. The hurricane victims, however, needed interim housing as soon as possible, and they needed it in large numbers. It would be very difficult to provide large numbers of truly innovative housing units in such a short time. Also, building innovative housing in the numbers needed would result in risking large sums of money if the experimental aspects of the designs turned out to be less than perfect. In addition, state officials said that gulf coast residents preferred traditional gulf coast architecture, making the area less than ideal for testing and finding community acceptance for innovative alternative designs.

Moreover, the units funded and developed under such a mandate were not likely to match FEMA’s needs for rapid, cost-effective units to house survivors for up to 18 months following a disaster. Interim housing was never a very clear concept, and the designs and units being developed changed over the program’s life to become larger and more substantial types of housing units that can be described as, and will mostly serve as, permanent housing. Permanent housing is not a part of FEMA’s mandate, and funding the much higher costs of permanent housing would diminish FEMA’s effectiveness in meeting its overall responsibilities, especially in these times of tightening budgets.

FEMA officials compounded the difficulties inherent in the Pilot Program concept by not allowing sufficient time for the concepts of the grant proposals to be fully developed and vetted. The gulf coast states were

given only 35 days from the issuance of the program grant application guidelines to the grant deadlines. State officials protested that this did not allow them time to develop proposals, but to no avail. Extra time for project development and community review was not allowed. As a consequence, many of the proposals that were submitted, and most of those that were funded, were simply proprietary designs that had already been developed by commercial firms. In several instances, this fact would later make awarding contracts and negotiating with contractors a problem because the contractors actually owned the designs that the Pilot Program panel had selected for funding.

One of the five factors on which the FEMA panel judged the proposals was “the extent to which local officials and community organizations support the pilot program in the community in which it will occur.” This is an excellent criterion that should identify the community acceptance problems that later proved such an obstacle to the Pilot Program units. However, because the states had only 35 days in which to secure and measure community support for housing programs that would be implemented concurrently in many communities, such support was virtually impossible to achieve before the projects had to be submitted. The one exception that had extensive advance community acceptance was the Alabama City of Bayou La Batre project, which was designed to be implemented in only one community, and even it encountered some community acceptance problems. Unfortunately, the programs that were the most innovative sources of alternative housing and those that created clusters of housing, two key goals of the Post Katrina Act housing directive, encountered the most problems in gaining community acceptance, and very few of them were completed.

The Pilot Program has not been a failure in that it has provided adequate housing to many families who needed homes. However, more families could have been housed faster and at a lower cost if the program had been conducted as a housing program by agencies with a mandate for, and experience in, creating permanent housing. The development of alternative housing suitable for FEMA’s immediate post-disaster needs could then have been left to single-focused efforts such as the Disaster Housing Pilot Project.

Nevertheless, the Pilot Program provided some valuable lessons for determining the future of FEMA post-disaster housing. The Alabama project demonstrated the value of gaining community acceptance well in advance of project agreement and showed that modular housing units capable of providing permanent housing can be provided in a fairly brief timeframe. The larger Mississippi project showed that quick-response housing sturdy enough to withstand hurricane-force winds and flexible

enough to be readily converted to permanent housing can be developed and installed at a fairly reasonable cost. The Louisiana project showed that interim housing can be developed that presents a good appearance in individual or group sites. The Texas project emphasized the importance of having adequate time to prepare for a housing program and shows the logic of doing so well in advance of a disaster.

The Disaster Housing Pilot Project as implemented by the JHSG is far better designed and situated to find innovative solutions to disaster housing at reasonable cost. However, unlike the Pilot Program, its units will still not have been tested in the real world, a setting that provided many unpleasant surprises to the more innovative Pilot Program concepts.

Both the Pilot Program and Disaster Housing Pilot Project have demonstrated a variety of alternative housing concepts that could provide better and safer housing for disaster victims. However, neither has found solutions that are more cost-effective than traditional FEMA programs in providing short-term post-disaster housing. The higher costs of many of these alternative options could be somewhat offset by the fact that they are much more capable of providing long-term or permanent housing than are traditional options. However, providing such long-term housing is not a FEMA mandate.

It remains to be seen whether the Pilot Program and Disaster Housing Pilot Project will result in significant improvements to FEMA's future temporary housing assistance program. The HUD assessment of the quality and suitability of the Pilot Program units is not due to be available for FEMA review until the fall of 2011. A draft FEMA assessment of the first group of Disaster Housing Pilot Project units is undergoing internal review, and the final group of units should be assessed in 2012. Whatever changes FEMA officials choose to make to the temporary housing assistance program will partly depend upon these assessments.

In any case, it will not be easy to decide how to change the temporary housing assistance program. Although detailed cost data are not yet available from FEMA, the units we reviewed are significantly more expensive than FEMA's traditional temporary units and will sharply increase the cost of post-disaster housing programs. In addition, most of the units tested are too large to replace travel trailers and park models as a compact post-disaster solution for many urban homeowners' sites. Community non-acceptance of alternative housing units, especially if placed in group sites, is still a major problem in the cases we reviewed.

Recommendations

We recommend that the Associate Administrator, Response and Recovery:

Recommendation #1: Avoid program proposals that try to combine innovation with mass production in short timeframes, particularly in the housing area.

Recommendation #2: Allow competitors in any housing grant program competition sufficient time to develop fully thought-out and detailed proposals that do not rely exclusively on the proprietary designs of commercial firms.

Recommendation #3: Ensure adequate time and process to test community acceptance before undertaking housing projects.

Recommendation #4: Develop complete cost for all components of disaster housing in order to be able to compare alternative options.

Recommendation #5: Mandate that any decision concerning the implementation of alternative types of housing be based on an examination of the increased costs of such changes and the effects of such cost increases on FEMA's effectiveness.

Recommendation #6: Obtain clarification as to whether providing interim housing is a legitimate part of FEMA's mandate or is more appropriately left to agencies responsible for providing permanent housing.

Management Comments and OIG Analysis

FEMA management concurred with most of this report's findings and conclusions, stated that the report's findings would be used to strengthen the effectiveness and efficiency of future programs, and committed to addressing the report's recommendations. In response to recommendations 1, 2, 3, and 4, FEMA officials fully concurred with the recommendations, further described some of the difficulties that led to the respective findings, and explained current and planned corrective actions. We will determine the status of these recommendations once we receive the detailed corrective action plan in FEMA's 90-day letter.

FEMA officials partially concur with recommendation 5. They agree that FEMA should examine the increased costs of alternative housing and the effects that such cost increases might have on FEMA's effectiveness. However, they did not concur with the recommendation to issue a mandate

for cost comparisons. They said that life-cycle costs are currently considered, that flexibility is required in meeting housing needs, and that such a mandate could slow the provision of housing to disaster survivors. We do not agree that the recommended mandate would reduce FEMA's effectiveness in providing disaster housing, but simply would require that decisions on implementing alternative housing choices be based on an examination of costs versus effectiveness. We believe such considerations of cost versus effectiveness should be part of the decision-making process for any major government expenditure and are particularly needed in FEMA disaster housing programs where actual costs have not been clear and where pressure for expanded offerings are common. We will determine the status of these recommendations once we receive the detailed corrective action plan in FEMA's 90-day letter.

FEMA officials did not concur with recommendation 6, that FEMA obtain clarification as to whether providing interim housing is a legitimate part of FEMA's mandate or is more appropriately left to those agencies that are responsible for providing permanent housing. FEMA officials said that current law provides for such assistance for up to 18 months after a disaster, unless extended by presidential determination, and that FEMA continues to partner with HUD when the need for permanent housing is realized as the result of a disaster. While we recognize the above, FEMA has provided interim housing in excess of the 18-month period, and we believe FEMA may well experience pressure to provide such housing in the future. Although we remain concerned about the costs of providing housing for more than 18 months, we accept FEMA's argument that recommending further clarification of the housing mandate is not justified. We will close the recommendation once we receive FEMA's 90-day letter.

Appendix A

Purpose, Scope, and Methodology

The purpose of this review was to determine whether the Alternative Housing Pilot Program has been cost-effective in providing housing for survivors of hurricanes Katrina and Rita in the gulf coast region and in demonstrating alternative sources of emergency housing that could provide better, safer, and more cost-effective solutions for direct housing; whether the Disaster Housing Pilot Project has been cost-effective in demonstrating alternative sources of emergency housing; and the likely impact of these programs on future directions of FEMA's temporary housing assistance program.

We examined the number and types of housing units that have been developed under each of the Pilot Program grants and compared them to each grant's proposal for funding. We reviewed the construction efficiency, effectiveness, quality problems, and development time required for each of the housing development programs, and the costs of each program. We determined whether each program was serving the target community intended by the program's design. For both the Pilot Program and the Disaster Housing Pilot Project, we evaluated whether each was building and evaluating the types of innovative alternative housing that had been envisioned in creating the programs and what possible effects the lessons learned from these efforts could have on the future direction of the temporary housing assistance program.

We interviewed officials from FEMA headquarters, responsible state and city housing authorities, and housing development and construction firms. We reviewed relevant FEMA and state documents, grant and construction documents, OIG and Government Accountability Office (GAO) reports, and federal laws, regulations, guidance, and policy related to temporary housing assistance and the housing programs under review.

We conducted fieldwork in Washington, D.C.; Bayou La Batre, Alabama; Biloxi, Gulfport, Bay Saint Louis, Waveland, Ocean Springs, and Pass Christian, Mississippi; New Orleans and Lake Charles, Louisiana; Austin and Port Arthur, Texas; and Emmitsburg, Maryland.

Our analysis is based on direct observation, review of applicable documentation, and interviews. We conducted this performance audit between January and June 2011, 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

Appendix A
Purpose, Scope, and Methodology

evidence to provide a reasonable basis for our findings and conclusions based upon our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based upon our audit objectives.

Appendix B Management Comments to the Draft Report

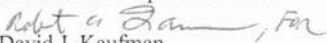
U.S. Department of Homeland Security
500 C Street, SW
Washington, DC 20472



FEMA

OCT 3 2011

MEMORANDUM FOR: Matt Jadacki
Assistant Inspector General
Office of the Inspector General

FROM: 
David J. Kaufman
Director
Office of Policy and Program Analysis

SUBJECT: FEMA Response to OIG Draft Report, *Future Directions of FEMA's Temporary Housing Assistance Program*

Thank you for the opportunity to comment on the draft report. The findings in the report will be used to strengthen the effectiveness and efficiency of how we execute and measure our programs. We recognize the need to continue to improve the process, including addressing the recommendations raised in this report. Our responses to the recommendations are as follows:

Recommendation #1: Avoid program proposals that try to combine innovation with mass production in short timeframes, particularly in the housing area.

FEMA Response: FEMA concurs with this recommendation.

FEMA recognizes programs that incorporate multiple goals in short timeframes involve risk. However, FEMA attempted to balance both intended goals of developing innovative solutions and also expediting housing assistance to disaster survivors when implementing the Alternative Housing Pilot Program (AHPP). FEMA selected a short application timeframe to expedite the delivery of funds and to allow the states to proceed as quickly as possible in the areas hardest hit by Hurricane Katrina and other hurricanes of the 2005 season.

FEMA will consider longer timeframes for applicants to prepare and submit applications if the agency conducts future competitive grant processes for the purpose of identifying alternative, new, or innovative forms of disaster housing. At present, FEMA's authority to issue such grants is the result of special circumstances created by P.L. 109-234. Additionally, all funds for the grants that resulting from P.L. 109-234 have been obligated to the grantees or for evaluation and

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Management Comments to the Draft Report

grant oversight. If FEMA is provided the specific authority to conduct a similar grant program in the future, the agency would consider the scope, and complexity of the proposed grant(s) to ensure that applicants have enough time to adequately prepare and submit applications that meet the grant objectives and performance requirements.

FEMA believes this satisfies the intent of the recommendation and requests that this recommendation be resolved and closed.

Recommendation #2: Allow competitors in any housing program competition sufficient time to develop fully thought-out and detailed proposals that do not rely exclusively on proprietary designs of commercial firms.

FEMA Response: FEMA concurs with this recommendation.

FEMA recognizes the difficulties that competitors experience in developing cost-effective, non-proprietary solutions that are also available in unknown quantities and on short notice. In recognition of those difficulties, FEMA conducts vendor and interagency outreach, performs market research on disaster housing options, posts procurement notices and provides technical assistance. While recognizing this difficulty, FEMA must continually balance the expediency needed to meet the needs of disaster survivors with the need to identify non-proprietary solutions.

FEMA believes this satisfies the intent of the recommendation and requests that this recommendation be resolved and closed.

Recommendation #3: Ensure adequate time to process and test community acceptance before undertaking housing projects.

FEMA Response: FEMA concurs with this recommendation.

Although State applicants had a short timeframe for completing their application to AHPP, demonstration of community acceptance was one of the factors the Selection Panel considered in the application review process. Applicants were asked to include, in their application package, letters of support for their proposed projects from local communities. However, the AHPP demonstrated that not all community acceptance factors can be predicted in advance. Planned locations may be deemed environmentally infeasible or support from originally targeted communities may erode as time passes from the application to implementation phase (and as time elapses from the onset of the original disaster). If FEMA is provided the specific authority to conduct a similar grant program in the future, the agency will take this recommendation into account and provide adequate time for the State to obtain the level of community acceptance needed to ensure success of the program.

Through the National Disaster Housing Task Force (NDHTF), FEMA encourages States to establish a State-led Disaster Housing Task Force (SLDHTF). A SLDHTF allows the State to

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Appendix B

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plan for the potential impacts of significant housing losses and seeks to gain community acceptance of potential housing solutions before, during and after a disaster. FEMA's NDHTF provides guidance to States on effective establishment of these task forces while the State leads the task force, guides the development of direct housing plans, and coordinates housing requirements. In the case of catastrophic disasters, FEMA may also deliver community recovery planning assistance, including housing assistance, to impacted communities through Emergency Support Function (ESF) #14 under the National Response Framework (NRF).

In response to the spring 2011 tornado which struck Joplin, Missouri, the local school district established (and achieved) the goal of opening schools on time this year. The SLDHTF made it a priority to place families with school-aged children in mobile home parks first, and FEMA successfully housed all identified families before the start of the school year.

Additionally, the staff of FEMA's NDHTF provided technical assistance to the State of New York as they created their own SLDHTF in response to flooding from Hurricane Irene and Tropical Storm Lee. Additionally, the State of Texas is currently setting up a SLDHTF in response to the wildfires that recently caused widespread housing damage.

FEMA's guidance to states on establishing SLDHTF's (including suggested membership, etc.) will help increase community buy-in and acceptance of housing solutions. By helping states set up such a task force, states can develop housing plans in advance of disasters as well as quickly convene all stakeholders during a disaster to decide on mutually agreeable housing solutions.

FEMA believes this satisfies the intent of the recommendation and requests that this recommendation be resolved and closed.

Recommendation #4: Develop complete cost data based on past experience of all cost components of disaster housing in order to be able to compare alternative options.

FEMA Response: FEMA concurs with this recommendation.

FEMA continues to work with federal, state and local partner agencies to find alternatives to traditional temporary housing that will reduce costs and minimize the length of time a survivor is displaced. Additionally, FEMA continually reviews its programs to identify opportunities for improved performance and efficiency, and better ways to provide services to disaster survivors. As part of this effort, and in response to feedback from our stakeholders, FEMA recently reviewed its direct housing program, including the provision of Temporary Housing Units (THUs).

FEMA is currently exploring the changes suggested by this review and hopes to implement new concepts to streamline the direct housing program through increased efficiencies and enhanced coordination with our interagency partners and stakeholders. Ultimately, this should reduce

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costs to the Federal government in providing direct housing assistance after Presidentially-declared disasters.

However, simple cost analyses do not always capture all factors because innovative solutions may not easily lend themselves to direct comparisons. For example, the Mississippi Cottages, funded by the AHPP, were installed as interim and (subsequently) as permanent units, thereby fulfilling two different although related roles. The results of a simple comparison of the costs of FEMA's traditional, temporary housing solutions with an alternative housing solution that encompasses both interim and permanent housing may be misleading. An accurate cost analysis would need to factor in the total life-cycle cost of the unit (purchase price, storage, installation, maintenance, deactivation, etc.) as well as the more intangible benefits to community and individual recovery (such as a unit that functions as more than just temporary or interim housing).

FEMA believes this satisfies the intent of the recommendation and requests that this recommendation be resolved and closed.

Recommendation #5: Mandate that any decision concerning the implementation of alternative types of housing be based on an examination of the increased cost of such changes and the effects of such cost increases on FEMA's effectiveness.

FEMA Response: FEMA partially concurs with this recommendation.

FEMA concurs that the agency should examine the increased cost of alternative types of disaster housing and the effects such cost increases may have on FEMA's effectiveness. FEMA regularly reviews the costs associated with its direct housing missions. Any decision to implement an alternative type of housing will be based on a cost analysis of all available options.

However, FEMA non-concurs with the recommendation to issue a mandate. Life-cycle costs of FEMA's direct housing operations are currently considered and efforts are made to find less expensive but comparable alternatives. Additionally, FEMA must remain flexible in the event of a disaster and must always balance the need for cost effectiveness with the ability to provide timely assistance to disaster survivors. The issuance of a mandate may have the unintended consequence of slowing FEMA's response to a large scale disaster. This will also slow the subsequent provision of housing for disaster survivors who need a temporary housing solution when available local resources do not meet the community's disaster housing needs.

FEMA believes this satisfies the intent of the recommendation and requests that this recommendation be resolved and closed.

Recommendation #6: Obtain clarification as to whether providing interim housing is a legitimate part of FEMA's mandate or is more appropriately left to agencies responsible for providing permanent housing.

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FEMA Response: FEMA non-concurs with this recommendation. Interim housing is generally defined as temporary housing, and the authorities and responsibilities are prescribed by law (see Stafford Act Section 408(c) (1) (B) (i)-(ii)):

(B) Direct assistance -

(i) In general - The President may provide temporary housing units, acquired by purchase or lease, directly to individuals or households who, because of a lack of available housing resources, would be unable to make use of the assistance provided under subparagraph (A).

(ii) Period of assistance - The President may not provide direct assistance under clause (i) with respect to a major disaster after the end of the 18-month period beginning on the date of the declaration of the major disaster by the President, except that the President may extend that period if the President determines that due to extraordinary circumstances an extension would be in the public interest.

FEMA continues to partner with HUD when the need for permanent housing is realized as a result of the disaster. As part of the NDRF, HUD is designated as the lead of the Housing RSF; FEMA and HUD work closely on developing housing solutions for disaster survivors. FEMA also coordinates with HUD on the transition of applicants from FEMA-provided temporary housing to permanent housing solutions through the Disaster Assistance Housing Program (DHAP).

FEMA believes this satisfies the intent of the recommendation and requests that this recommendation be resolved and closed.

Again, we thank you for the opportunity to review and update our comments to your recommendations contained in your draft report. Should you have further questions regarding our response, please do not hesitate to call FEMA's Chief Audit Liaison, Brad Shefka, at 202-646-1308

Appendix C
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