

Chapter One: Introduction

This case study is the first installment of the quality of life evaluation for Mississippi. It describes and assesses program implementation of the Mississippi Alternative Housing Program (MAHP) from the start of the program in April 2007 through August 2008, about half way through the active grant period. This chapter describes the physical and social environment of South Mississippi after Katrina and provides an overview of Mississippi's recovery planning process. It also offers a brief overview of Mississippi's units and provides a description of the case study methodology at the end of the chapter.

Program implementation is reviewed in detail in the next two chapters. Chapter Two (*The Temporary Housing Story*) reviews start-up activities and the temporary placement of units, while Chapter Three (*Transition to Permanent Housing*) describes the recent shift to permanent installations. Chapter Four (*Preliminary Results of the Building Sciences Evaluation*) offers a building sciences review of the performance of MAHP units to date. Chapter Five (*Observations and Lessons Learned*) summarizes preliminary assessments of the Mississippi pilot and presents lessons learned to date.

South Mississippi Before and After Hurricane Katrina

Hurricane Katrina struck the Gulf Coast on August 29, 2005, causing unprecedented damage to the State of Mississippi's infrastructure, housing stock, commercial property and economy, particularly the tourism and gaming industries. Flooding combined with a 30-foot storm surge swept away or severely damaged homes, roads and businesses that once were concentrated along the Gulf Coast. Exhibits 1-1 and 1-2 illustrate the impact of Hurricane Katrina on the coast. Moving inland, Katrina's wind and rain caused enough damage to the southern half of Mississippi that full federal disaster aid was available for residents of the 49 southernmost counties. Ultimately, the storm generated 46



Exhibit 1-1: Biloxi, Mississippi

Above: A Biloxi beach after Katrina on September 3, 2005.

Below: The same stretch of beach on November 3, 2005 after initial clean-up.

Photos: FEMA / Mark Wolfe





Exhibit 1-2: Damage from Hurricane Katrina.

A house was pushed off its foundation in Biloxi, Mississippi.

Photo: FEMA / Mark Wolfe



Damage to the Highway 90 bridge from Biloxi to Ocean Springs.

Photo: FEMA / George Armstrong

million cubic yards of debris, more than 350,000 Mississippians received FEMA Individual Assistance grants totaling approximately \$1.2 billion and 48,000 Mississippi households received a FEMA travel trailer or mobile home.¹

All along the coast, Katrina washed away and damaged infrastructure, including roads, sewers and electric and natural gas lines. Several sections and bridges of Highway 90,

the beachfront drive that hugged the Mississippi Coast, were gone. Exhibit 1-2 shows the damage to the bridge between Biloxi and Ocean Springs. While striking progress has been made—two critical bridges have been restored—sections of Highway 90 are still under construction three years after Katrina.

Katrina also devastated Mississippi's coastal economy.² Prior to the storm, unemployment

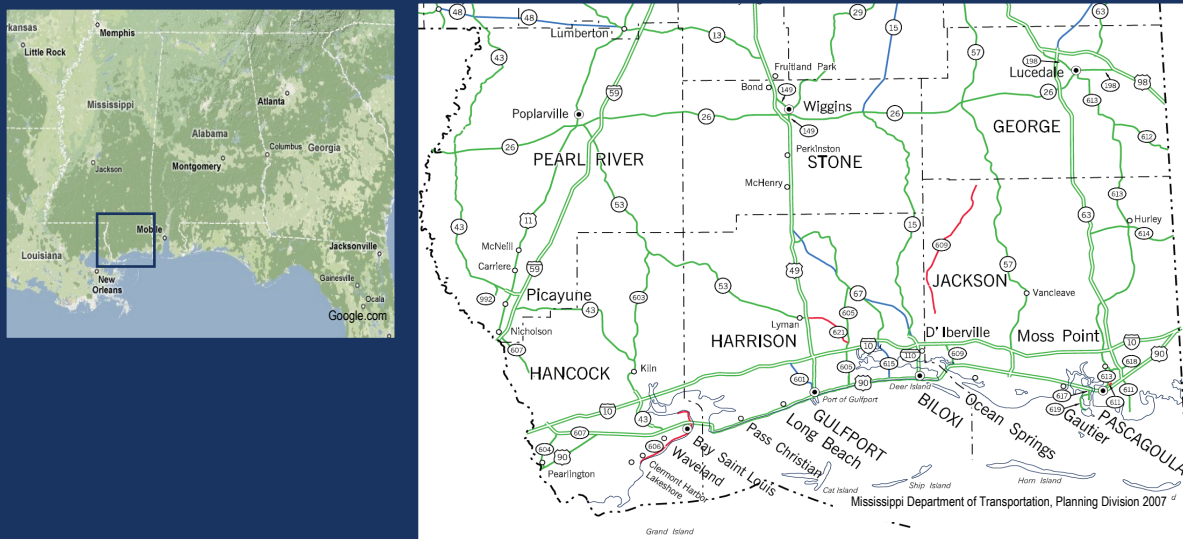
hovered around 6 percent across the three coastal counties. Immediately after the storm, in September 2005, the unemployment rate was over 22 percent; it did not return to pre-storm levels until the beginning of 2007. Revenues from gaming, a key industry along the coast, dropped from over \$105 million in August 2005 to \$0 in September and did not fully recover until early 2007. The damage to other businesses and the reduction in the consumer population also decimated sales tax revenues for municipalities.³ As expected, economic losses of this magnitude have had ongoing impact on government tax revenues, especially for small, coastal jurisdictions.

This extent of damage required a measured recovery effort along the coast. As part of this endeavor, MAHP was implemented in the three coastal counties of Harrison, Hancock and Jackson and to a much more limited

degree in the more rural, inland counties of George, Stone and Pearl River. Exhibit 1-3 shows MAHP’s geographical coverage.

Prior to Katrina, over 40 percent of the total population of Mississippi’s three southernmost counties lived in Harrison County—which includes the coastal urban centers of Gulfport and Biloxi.⁴ Harrison County also had the largest concentration of rental housing.⁵ Because development was concentrated along the coast, nearly 60 percent of the housing stock in the lower three counties was damaged, with a disproportionate impact on rental housing.⁶ Exhibit 1-4 shows a damaged multi-unit rental development that remained vacant in July 2008. The percentage of housing units that were damaged declined from west to east, so that 72 percent of housing units in Hancock County were damaged, 64 percent in Harrison, and 42 percent in Jackson County.⁷

Exhibit 1-3: MAHP’s Geographical Coverage



The Mississippi Alternative Housing Program's Role in Recovery

A week after Katrina, Governor Haley Barbour initiated a recovery planning process by establishing the Governor's Commission on Recovery, Rebuilding and Renewal. Town hall meetings and planning workshops took place in the months following the storm to gather input from Mississippi residents, frame a vision for recovery and develop tangible recommendations for moving forward. Initial designs for alternative disaster housing units, namely the Katrina Cottage, were developed during this planning process. As a result of the Commission's final report, the Governor's Office of Recovery and Renewal was created to coordinate Mississippi's recovery efforts. In addition, Mississippi stakeholders advocated for a federal initiative to better address temporary disaster housing needs. These efforts contributed to the legislation that authorized FEMA to create the Alternative Housing Pilot Program.

By the time FEMA called for AHPP proposals, Mississippi had already constructed a prototype Mississippi Cottage, a variation on the Katrina Cottage, and convened builders, engineers, local officials and citizens to better understand options for rebuilding the coast's housing, in both the intermediate and long-term. In September 2006, the Governor's Office of Recovery and Renewal convened an Alternative Housing Design charrette and developed the proposal submitted to FEMA for the Mississippi Alternative Housing Program.

Through the competitive process, FEMA funded two of Mississippi's proposed pilot

Exhibit 1-4: Damaged Rental Units



A multi-family rental property situated between Gulfport and Biloxi that was still boarded up in July 2008. The property is several blocks from the coast and is typical of the rental units that have yet to return to the market.

programs. The State received \$275 million in AHPP funds for the Park Model and Mississippi Cottages, and a smaller allocation of \$6 million for the Eco Cottage (originally called the Green Mobile unit).

The Program

The Mississippi Emergency Management Agency (MEMA) is the state entity responsible for implementing MAHP. MEMA develops Mississippi's emergency response plan and manages relief operations following a natural or man-made disaster. MAHP's Program Directors report directly to MEMA's Executive Director, and the agency works closely with the Governor's Office of Recovery and Renewal. MAHP's day-to-day operations are carried out by a combination of MEMA staff, other state employees and a team of contractors responsible for project management, design, engineering, manufacturing, hauling and installing units and maintenance. At the height of the temporary housing

program, about 100 MEMA and contractor staff persons were working on the program.

MAHP implementation includes a temporary phase and permanent phase. Temporary installations began in June 2007 and continued through July 2008. During this phase, MAHP executed agreements with local jurisdictions to establish where and under what circumstances MAHP units could be placed. Program applicants were responsible for securing a site for the Cottage on land they owned, borrowed or rented. Once an applicant and site were approved, MAHP installed the unit. Chapter Two describes program start-up activities and the temporary installation process.

The permanent phase officially began in April 2008, although MAHP had been working on developing permanent housing projects since the start of the program. Chapter Three details the shift to permanent installations.

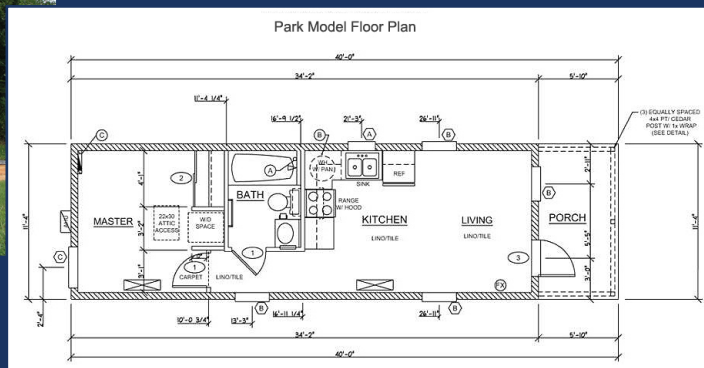
MAHP Units

Ultimately the program will include four unit types, including:

- ◆ One-bedroom Park Models;
- ◆ Two- and three-bedroom Mississippi Cottages;
- ◆ Handicapped accessible, two- and three-bedroom Mississippi Cottages; and
- ◆ One- and two-bedroom Eco Cottages, both of which are accessible.

The Park Model and Mississippi Cottages are manufactured, modular, HUD-code certified housing units that meet the 2003 International Residential Code (IRC) and can withstand 150 mile per hour wind speeds. Both unit types reflect the regional Gulf Coast architecture, with hipped and gabled roofs, front porches and a cottage aesthetic. They are delivered on wheels and can be installed temporarily or permanently because the

Exhibit 1-5: Park Model Exterior and Floor Plan



removable under-carriage allows for installation on a permanent foundation.

Park Models are one-bedroom units with 396 square feet of living space and are intended as a direct replacement for the 256 square foot FEMA travel trailers. In addition to being somewhat larger, the Park Model offers significant advantages in its structural design and floor plan; use of environmentally safer, energy efficient and more durable materials; and the addition of attic storage space. Exhibit 1-5 includes an exterior view of the Park Model and its floor plan.

The two-bedroom Mississippi Cottages have 728 square feet of living space and the three-bedroom has 840 square feet. The Cottages were originally intended to replace FEMA mobile homes, which are typically 840 square feet. The two- and three-bedroom units are available in fully accessible versions that are compliant with the Uniform Federal Accessibility Standards (UFAS). These Cottages include interior adaptations and ramp access to the unit for individuals with mobility disabilities. The exterior of a Mississippi Cottage and the three-bedroom floor plan are featured in Exhibit 1-6. Exhibit 1-7 displays photographs of a typical Cottage interior.

Exhibit 1-6: The Mississippi Cottage

Right: An exterior view of a Mississippi Cottage.

Below: The floor plan for the three-bedroom Mississippi Cottage.

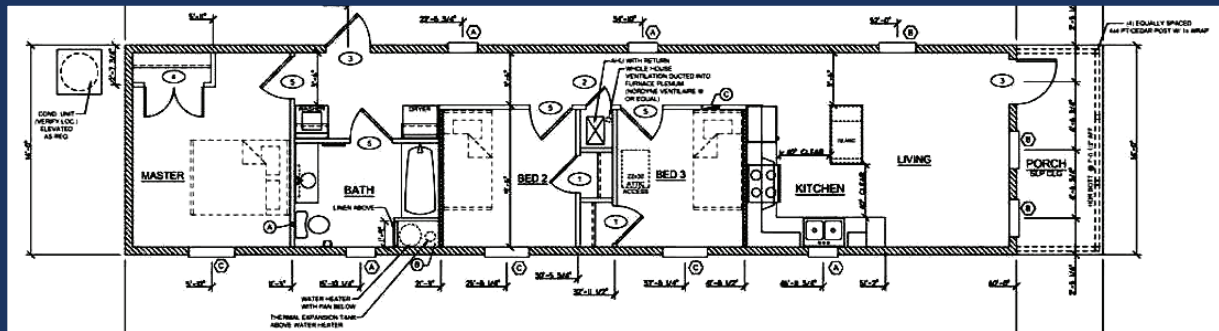


Exhibit 1-7: Typical Park Model and Mississippi Cottage Interiors



Additions can be easily added to increase interior living space. The unit design was still underway as of August 2008. Exhibit 1-8 displays the preliminary Eco Cottage design and a one-bedroom floor plan.

In keeping with efforts to simulate disaster circumstances, FEMA required that the units come furnished with a sofa, dining table and chairs and bed frames and mattresses. The AHPP grant also required that MAHP provide “living kits” with each unit that included basic household items, such as linens, dishes, silverware and cleaning supplies.

Originally, Mississippi anticipated producing about 3,500 units, consisting of 3,400 Park Models and Mississippi Cottages and 100 Eco Cottages. These estimates have been reduced to 3,025 Cottages and Park Models and 80 Eco units as a result of increased costs for transitioning from temporary to permanent installations. As of August 28, 2008, Mississippi had installed and occupied 2,806 units. Exhibit 1-9 shows the pace of installation from the first unit on June 20, 2007 through August 2008. Exhibit 1-10 shows the location and distribution of occupied units across the six counties. Attachment 1 includes more detailed maps for coastal jurisdictions.

The Eco Cottage is an energy efficient, “green” modular unit that will be sited as permanent housing and will be available in one- and two-bedroom versions. It will be held to a higher environmental standard than the other designs, is fully compliant with the 2006 International Residential Code and uses Structural Insulated Panel (SIP) design.

Exhibit 1-8: The Eco Cottage

Right: A preliminary rendering of the Eco Cottage.

Below: The one-bedroom floor plan.

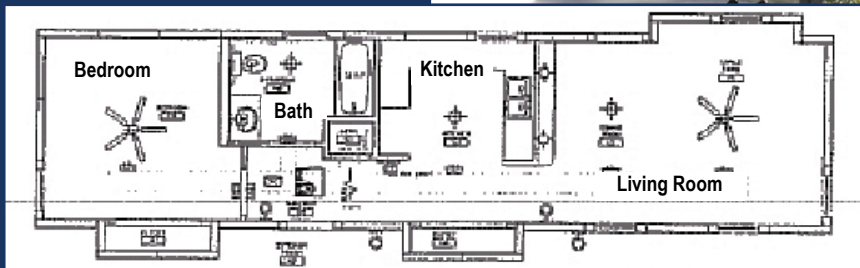


Exhibit 1-9: Number of MAHP Units Occupied by Month June 2007 to August 2008

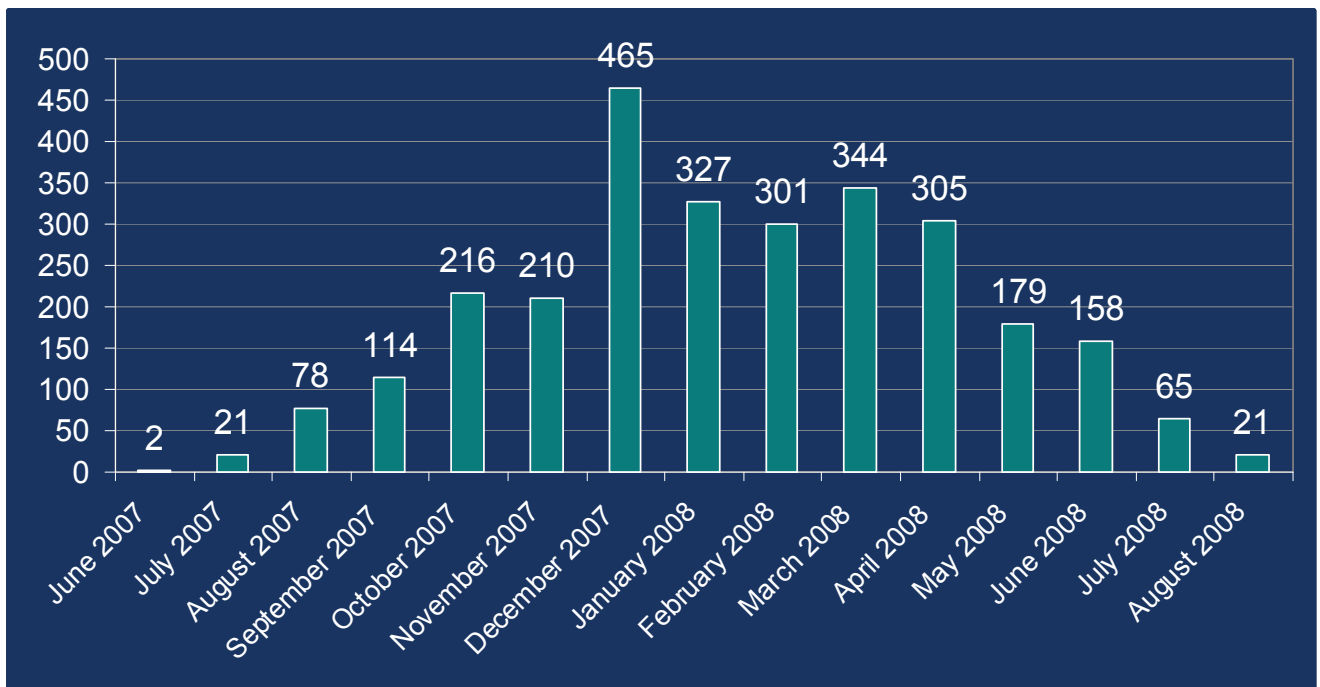
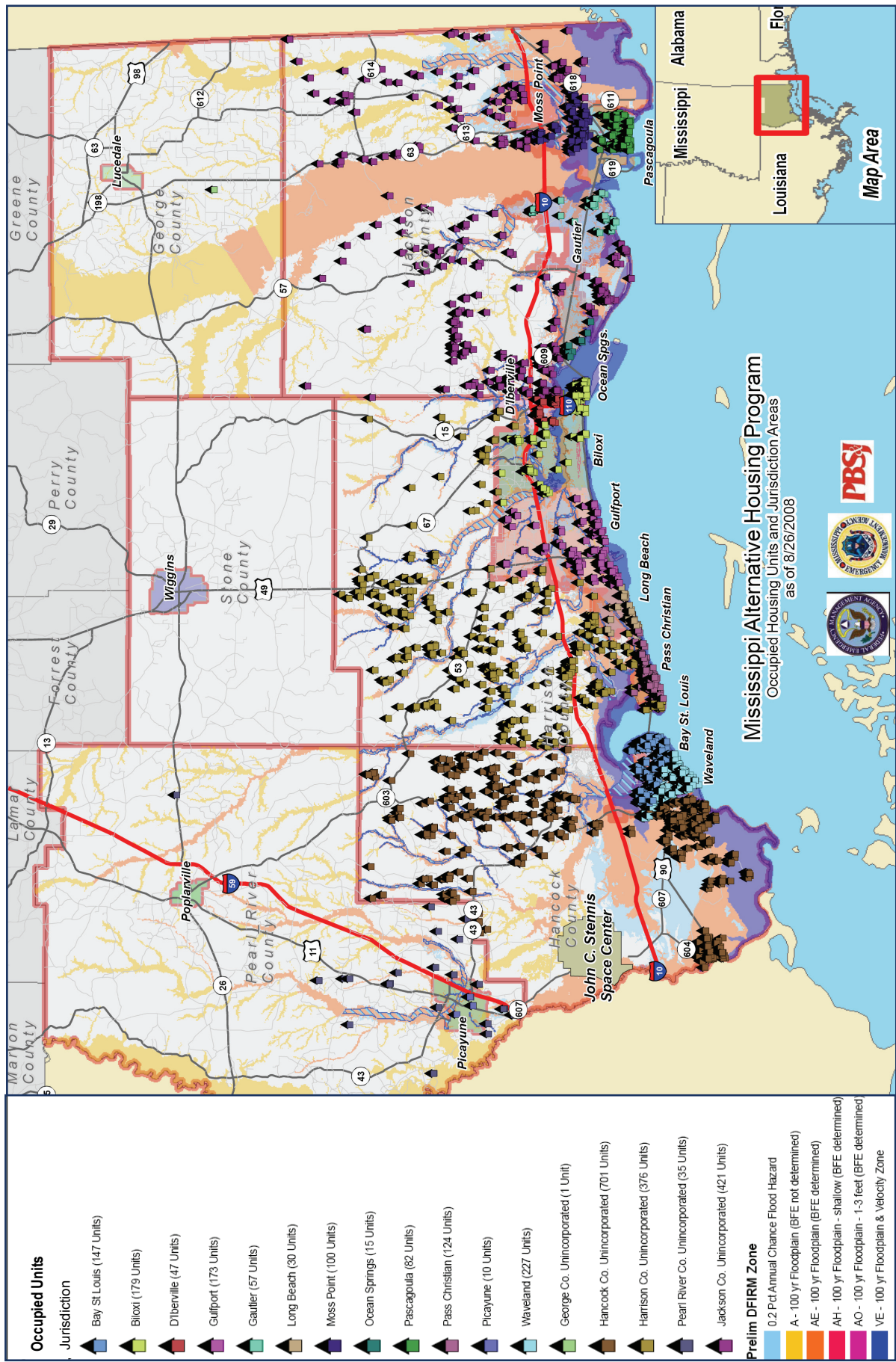


Exhibit 1-10 shows the distribution of occupied MAHP units over the program's six-county geography.



Case Study Methodology

This case study is the first evaluation report for MAHP. A two-person evaluation team collected data for this report during three on-site visits, remote monthly monitoring of grantee activities via conference calls and ongoing reviews of program documents and reports.

The team visited the Mississippi Gulf Coast in November 2007, May 2008 and July 2008 and participated in FEMA-sponsored grantee conferences in February 2008 in Biloxi and June 2008 in New Orleans. They conducted in-depth interviews with MAHP staff—both MEMA employees and contractors—in individual and group interviews. They also conducted focus groups with staff persons who held the same MAHP positions in different counties, as well as staff who were working on a specific issue, such as permanent housing.

While on-site in November 2007 the evaluators informally interviewed eight MAHP participants, that is, no structured interview protocol was used. The evaluators sought to understand participants' impressions of the units and their experience with the program. The MAHP participants who were

interviewed were dispersed among the three coastal counties and selected by MAHP staff based on the availability of the participants. The conversations were intended to be used to inform the development of the participant survey and to obtain an early read on MAHP participants' opinions and experiences. (The fall 2008 participant survey will collect data in a structured, representative survey.)

Nearly 20 community stakeholders were also interviewed during three site visits. They included town mayors, city managers, zoning and building code officials, city council persons, representatives of non-profit organizations and a representative from a public housing authority. In a few instances, the evaluators conducted follow-up interviews with the same stakeholder to understand if and how attitudes towards the program had changed over time.

During the May and July 2008 visits, the evaluation team also observed a county board of supervisors meeting, a city council meeting and a meeting for an affordable housing coalition when MAHP was on the agenda. The evaluators also reviewed detailed program records and reports that were developed and archived by MAHP.