



A Resource of the State of Florida

**HURRICANE LOSS REDUCTION
FOR
RESIDENCES AND MOBILE HOMES
IN FLORIDA**

**A Research Project Funded by
The State of Florida Department of Community Affairs
Through Contract 01-RC-11-13-00-22-004**

**WORK PLAN
AND MILESTONE CHART**

**DELIVERABLE # 1
DUE BY FEBRUARY 18, 2001**

PREPARED BY
THE INTERNATIONAL HURRICANE CENTER
FLORIDA INTERNATIONAL UNIVERSITY

PURPOSE

This report describes the *Work Plan* for the research being undertaken by the International Hurricane Center (IHC) in conjunction with its research team comprised of researchers and research assistants from five universities that are members of the State University System of Florida (SUS).

This report lists all main tasks, milestones and critical dates including dates by which various deliverables required by the grant contract are due.

In addition this report also includes an itemized budget detailing anticipated expenditures under the \$660,000 funding for the research component of the project titled "Hurricane Loss Reduction for Residences and Mobile Homes in Florida"

The report also includes a narrative describing the main research tasks and associated support functions as well as a description of the research team that has been assembled for this project. This also includes two organizational charts to illustrate the descriptive narrative.

This report has been prepared for delivery to the State of Florida Department of Community Affairs (DCA) in compliance with the requirements of Department Contract Number 01-RC-11-13-00-22-004 (contract) executed on September 8, 2000 and modified through Amendment #1 executed on January 18, 2001.

This report specifically complies with the following language of contract:

Within 30 days from the execution of Amendment # 1 of this Agreement, the Contractor shall submit both in hard copy and electronic format an updated Work Plan and milestone chart detailing all tasks to be undertaken, milestones, meetings, and other critical dates. This updated Work Plan shall serve as the primary management tool for on-time performance between the Department and the Contractor. The Work Plan shall include an itemized budget which details all anticipated expenditures associated with the \$660,000 research portion of the total award. Upon receipt and approval by the Department, a payment will be paid to the Contractor in the amount of \$60,000.

BACKGROUND

During its 1999 session the Legislature of the State of Florida enacted a *Hurricane Loss Mitigation Program* (s. 215.559) also known as the “Bill Williams Residential Safety and Preparedness act”. This program, managed by the Department of Community Affairs (DCA), is funded by an annual legislative appropriation of \$7 million from the Florida Hurricane Catastrophe Fund (s. 215.555). Ten percent (10%) of said annual appropriation is to be allocated for two years for use by the International Hurricane Center (IHC), the State University System dedicated to hurricane research, for the following purposes:

- a) *To support programs of research and development relating to hurricane loss reduction devices and techniques for residences and mobile homes and relating to the development of credible data on potential loss reduction.*
- b) *The State University System (SUS) shall consult with the Department of Community Affairs and assists the department with the report required under subsection (7) [Annual report for the Speaker of the House of Representatives, the President of the Senate, and the Majority and Minority Leaders of the House of Representatives and the Senate]*

Funding under this appropriation was to have commenced at the start of the state fiscal year on July 1, 2000.

DCA executed Department Contract Number 01-RC-11-13-00-22-004 on September 8, 2000 awarding an amount of \$98,700 to initiate work on this project.

On January 18, 2001 executed a “Modification of Agreement” awarding an additional sum of \$601,300 bringing the total award amount under Contract Number 01-RC-11-13-00-22-004 to the full \$700,000 appropriated by the legislature. Under this amended contract a total of \$660,000 is allocated to cover the research portion of the total award.

This contract requires eleven specific deliverables associated with various component of the research portion of the funding grant for the project. This report has been prepared to comply with deliverable #1 that is due 30 days after the execution of Amendment # 1 to the contract that took place on January 18, 2001.

Based on above, this report is due for delivery to DCA today, Monday, February 19, 2001.

RESEARCH TRACKS

To address the purpose of this research project as stated in the language of the *Bill Williams Residential Safety and Preparedness Act* (see above) the IHC and DCA, after consultation with an ad-hoc subcommittee of the Advisory Council agreed on a set of five research tracks described in the contract as follows:

II. RESEARCH: The Contractor will perform research relating to hurricane loss reduction devices and techniques for residences and mobile homes relating to the development of credible data on potential loss reduction. The Contractor will emphasize research designed to identify the scope of the problem including the range of factors, from physical and structural to the social and regulatory, that may contribute to or influence hurricane losses for residences and mobile homes in the State of Florida. The main objectives will be to assess the absolute and relative vulnerability of the housing stock in Florida with an emphasis on mobile homes, and to gain as clear an understanding as possible of the issues that may act as barriers or motivations to hurricane loss mitigation, and to identify those issues that are relevant to the Department of Community Affairs, other interested parties and the residents of the State of Florida. Research topics will include:

1. Sheltering for Mobile Home Parks. This research effort will examine whether sheltering-in-place is feasible in mobile home parks. The examination will be framed within the concept that sheltering-in-place, in the case of mobile home parks, means sheltering within an appropriate structure with the park as opposed to an individual mobile home. Current programs and initiatives will be analyzed, including:

- (a) Work funded by the Department of Community Affairs Division of Emergency Management regarding the feasibility of retrofitting mobile home park communities centers to be used as shelters; and
- (b) New community shelter standards recently development by the Federal Emergency Management Agency.

This research will also address, without limitation, the following issues:

- (c) How receptive are park owners and residents to the idea of sheltering-in-place?;
- (d) Will park residents use an on-site shelter?;
- (e) What regulatory criteria govern such on-site shelters?;
- (f) What liability barriers are there to overcome, such as who is responsible for people using on-site shelters?;
- (g) Successes and barriers in the implementation of on-site sheltering programs;
- (h) Necessary criteria to make implementation acceptable and feasible; and
- (i) The necessary regulatory environment to make on-site sheltering programs feasible.

2. Mobile Home Recycling Program. Research will focus on the parameters of recycling programs implemented by other states, including both the technical and regulatory issues involved. The Contractor will coordinate with the Department of Environmental Protection to investigate the feasibility of creating a similar program in the State of Florida. The issues that will be addressed by this research include:

- (a) The incentives needed to make a recycling program work in the State of Florida;

- (b) Does the existing regulatory environment in Florida facilitate the administration of such a program in the state; and
 - (c) Would such a program be feasible across the board or will there be significant impediments for mobile home residents at the lower end of the social-economic spectrum?
3. Land Development and Zoning. A host of economic, political and regulatory factors that affect housing in the State of Florida have an adverse impact on mobile home parks. Research will focus on land use and zoning issues as well as the combination of economic and regulatory factors that negatively impact mobile home parks. The research will identify and analyze alternatives that may mitigate such negative impact.
4. Incentives and Barriers to Mitigation within Homeowners Insurance: Research will be conducted to determine if government promoted and homeowner-funded loss reduction measures are being supported in tangible ways by insurers. The research will specifically address the following:
- (a) Are conventionally site-built homeowners being offered insurance premium reductions for shutters or for a higher rating from the Building Code Effectiveness Grading System and if so to what extent;
 - (b) Are insurers recognizing the difference in construction and setup standards for the newer, wider and stronger manufactured housing units through lower rates;
 - (c) What incentives are already in place and what other incentives may the insurance industry be willing to consider and on what basis; and
 - (d) What is the potential for hurricane loss reduction that may result from insurance incentives?
5. Loss Reduction Retrofits and Structural Performance: This research will identify and assess the effectiveness of various hurricane loss reduction measures that could be incorporated in the retrofitting of existing housing units, both conventionally site-built or manufactured, or even in their design and construction. The research will focus on:
- (a) Ways to retrofit existing housing units, both site-built and manufactured homes,
 - (b) A review of research and testing related to loads, structural system performance and anchoring system performance for manufactured homes of different ages and types of construction,
 - (c) Identification of potential retrofitting systems measures that may be effective in reducing the potential for damage from hurricanes.
 - (d) Assessments of the mitigation effectiveness (damage reduction capability) of various, and retrofitting devices and techniques and their respective benefit-cost ratios.
 - (e) The regulatory environment under which such loss reduction retrofitting may be allowed and recognized, and

- (f) Jurisdiction and authority regarding mitigation measures that may be incorporated during mobile home manufacturing/design processes.

RESEARCH SUPPORT FUNCTIONS

The actual research effort, as required for the five research tracks described above, will require the support of several team members performing various important functions as follows:

1. Literature Review

The total team, including researchers and research assistants will engage in literature review to gather pertinent information for the five research tracks. Such literature review includes both paper-based and electronic (via the Internet) searches, the acquisition of various publications, and numerous interviews or communications with agencies or individuals who might be sources of information regarding various aspects of the five research tracks.

Results of this search are shared among all team members usually via electronic means (e-mail), but the IHC will also accumulate actual printed documentation that will be catalogued and held in a central repository for usage by any of the team members.

The IHC expects to create a continuous bibliographic record, based on such literature review, to be included as an appendix to the final project report.

2. Regulatory Environment

One very specific subset of the literature review is the *review of the regulatory environment* as related to the issue of housing and mobile homes, from the perspective of the five research tracks.

This function is important because it provides a good understanding of the regulatory framework under which issues pertaining to various aspects of housing, and mobile homes, are addressed by interested parties. Also, this knowledge and analysis of the regulatory environment will assist the IHC and the SUS research team in identifying potential policy alternatives to be considered by DCA and policy-makers in their efforts for hurricane loss reduction.

This function is already underway and shall continue for the duration of the project. A *Report on the regulatory Environment for Mobile Homes* has already been prepared and delivered to DCA.

3. Surveys

Work on all of the five research tracks will require information/data to be collected by way of surveys (meaning systematic interviews via telephone or face to face of samples of pertinent population in Florida) to be conducted in various areas of Florida.

In addition the project also requires a foundation of data and information that are specific to the topic of research. Information needs to be collected that will help define the magnitude and quality of the problem, the issues and also assist in identifying potential solutions to problems and alternatives for eventual policy decisions.

To address this, the IHC will use the services of FIU Institute of Public Opinion Research (IPOR) to collect data via a telephone survey using a survey instrument and sampling plan designed by team members from the Laboratory for Social and Behavioral Research (LSBR) at the IHC.

Various qualitative face-to-face surveys will also be conducted in various sub-regions of the state to collect data relevant to the five research tracks. These surveys will include researchers and research assistants from the IHC, the LSBR, FIU, FSU, FAU, UFL and USF.

4. Data Analysis

The IHC has obtained a large data set from the Florida Department of Motor Vehicles that includes close to one million records of mobile homes installed in Florida. Analysis of these data can contribute to the assessment of the problem from the perspective of the various research tracks.

To analyze these data the IHC has enhanced its hardware and software capabilities. Data analysis itself will be conducted in-house by the IHC. Findings will be shared with the research team as needed.

5. Imaging

The contract for this project requires several *deliverables* in the form of preliminary reports and a final report. In addition to the research component, the contract for this project also requires the IHC to assist DCA in the preparation of an annual report to the leadership of both state legislatures houses.

To support these deliverables as well as the annual report assisting functions the IHC intends to create an electronic graphical component within the project. This will utilize the expertise and capabilities of the High Performance Database Research Center (HPDRC) at FIU, including its TerraFly technology. This project element will be *web-enabled* to facilitate access to information.

RESEARCH TEAM

In keeping with its mission as the SUS Type 1 Center dedicated to hurricane research, the IHC has assembled a multidisciplinary research and support team that includes researchers and assistants from the following SUS member universities: a) Florida International University (FIU), b) Florida Atlantic University (FAU), c) Florida State University (FSU), d) University of Florida (UFL), and e) University of South Florida (USF).

In addition the IHC will use the expertise of researchers within its own core including: a) the Laboratory for Coastal Research, and b) the Laboratory for Social and Behavioral Research.

The work of these IHC and SUS researchers will be complemented by support from experts in specific fields, related to hurricane mitigation and mobile homes, from outside the SUS community.

Please see Organization Table 1 and Organization Table 2 following this page for a description of how the research team is organized, what SUS institutions are represented, who the researchers and research assistants are, and how each individual and institution is involved in the various research tracks.

THE WORK PLAN

In terms of functions the work plan for this project involves the following:

1. Support Functions

These include those functions designed to support the five research tracks directly as well as those activities that will generate a foundation of information to help in assessing the overall problem, and how the project objectives can be met.

These include:

- a) Literature search
- b) Regulatory environment review
- c) Phone survey
- d) Creation of graphical (imaging) database
- e) Various qualitative face-to-face surveys

2. Research Functions

These include all data analysis, information processing and other findings relative to the five specific research tracks listed before.

For the current project the aim of these research functions is to define the problem, identify critical issues, identify main causes of hurricane loss within the mobile home and conventional housing environment and to assess the regulatory framework pertinent to these issues. This will set a foundation for identification of loss reduction solutions as well as policy alternatives during the second year of this project.

3. Reporting Functions

These include the following:

- a) Preparation and delivery of the various preliminary reports (deliverables) required by the contract.
- b) Preparation delivery of a final report at the end of the current project (by June 30, 2001)
- c) Creation of a web-enabled image-based graphical element to support the depiction of key findings from this research effort.
- d) Collection of data and gathering of information to assist DCA in the preparation of the annual report required by the Act. This includes preparing a draft annual report for DCA.

Please review a three-page project schedule chart following this page. Said chart lists main activities and milestones for this project including dates for deliverables.