

Research Track Year Three

(1) Eliminating State and Local Barriers to Upgrading Existing Mobile Homes and Communities

Work under this research topic will emphasize the collection of data from actual case studies that should help illustrate the various types of barriers encountered, the result of the process and which will also assist in evaluating potential remedies or solutions for the elimination of such barriers. Work will build upon research conducted during the year 2001-2002 in Broward, Hillsborough, Miami-Dade, Pinellas and Polk counties. In addition work under this research track will also look into potential remedies to correct some of the contributors to given barriers. For example: during the current year knowledge gaps have been detected among public agency staff responsible for informing the public. The IHC will work in two areas, Hillsborough- Pinellas-Polk and Miami-Dade-Broward, to design and test an educational program to correct said knowledge gaps.

(2) Development of a Replacement Program for Existing Older Mobile Homes

Work will concentrate on the completion of specific work initiated during the 2001-2002 cycle that requires more time and a much more comprehensive analysis due to the complexity of issues. Specifically this effort will focus on:

- (a) Funding alternatives for how a proposed older mobile home replacement program could be funded;
- (b) Resolution of critically complex social issues that have been identified through research during 2001-2002, and
- (c) How would potential stakeholders in an eventual older mobile home replacement program react or contribute to the replacement program.
- (d) Time and motion and cost study for the actual replacement of at least one unit to further verify the findings resulting from work during 2001-2002. This will take the form of a practical exercise to verify all of the technical and regulatory steps involved in the removal and disposal of a mobile home.

(3) Research and Development on Hurricane Loss Reduction Devices and Techniques for Site-built Housing

Work under this topic will focus on three areas as follows:

3.1 Continuation of Structural Testing on at Five of the Areas Listed Below:

- (a) Role of various fasteners and fastening schedules in the performance of connection of roof sheathing panels to their supporting structure under hurricane wind conditions;
- (b) Expand previous test by introducing new damage components. For example the outdoor testing of roofing assemblies using fans to generate the appropriate wind loads will be modified by adding a source of water spray in order to study the contribution of wind driven water [rain] to potential damage to the roof. This test will help in assessing the performance of various materials in reducing or preventing roof leaks and water penetration, providing credible data in the capability of specific combination of building components in hurricane loss reduction;
- (c) Improve the roof covering tests by adding a scanning pressure system to measure the pressure distribution over roofing components. This research will complement work done to determine the wind flow over specific roof shape. Results will help in devising methods to better assess the performance of various roof coverings and assemblies;
- (d) Assess the influence of various housing components such as dormers, parapets etc. over adjacent areas of the roof, and their contribution to potential damage under hurricane conditions. This work may also include assessing the role of roof overhang on gable ends in the sequence of damage leading to potential breaching of the envelope.
- (e) Instrument flat roof housing units to gather empirical data on stress induced by hurricane conditions. This work will use a prototype instrument developed at FIU for specific use on a flat roof. The objective of this work is to calibrate via empirical methods that data collected from model tests. This may eventually lead to recommendations for improved building design or construction methods.

3.2 Evaluation of Effectiveness of Hurricane Loss Reduction Program

IHC will evaluate the effectiveness of the various components of the hurricane loss reduction program in meeting the specific objectives of the same. This evaluation will be carried out by way of qualitative surveys of the various parties engaged through the Hurricane Loss Reduction Project and remote surveys of the target audiences for each of these parties. One additional objective of this work would be the creation of a repository of knowledge that could contribute a foundation for future work.

The main objective of this evaluation will be to provide the Department, as well as the legislature through the instrument of the annual report, with an objective picture of how effective the program has been in promoting hurricane loss reduction and in creating a public culture that accepts and/or promotes various hurricane loss reduction devices and techniques.

This evaluation will also help the state in identifying specific areas where educational/training and/or outreach efforts may be needed to improve the effectiveness of the program, by assessing how much users of or contributors in various components benefit from the program or know about it.

a) The IHC will design and conduct a broad statewide baseline survey designed to measure movement in consumer awareness, understanding, acceptance and behavioral change over time regarding hurricane mitigation

c) The IHC will design and conduct additional target surveys developed to measure the performance/ effectiveness of certain FY 02-03 RCMP contracts and grants.

3.3 Research Feasibility of Programs to Create Incentives for or Improve Performance of Hurricane Loss Reduction Techniques for Site-built Housing

The IHC will assess the feasibility of developing initiatives involving financial institutions and insurers in combining various components for potential hurricane loss reduction into programs of incentives for developers or homeowners to adopt the same. These programs might work along the lines of those that have been developed by financial institutions and insurers to create incentives for the adoption of energy efficient building methods.