



## **HURRICANE LOSS REDUCTION FOR HOUSING IN FLORIDA**

**A Research project of the  
International Hurricane Research Center  
At Florida International University  
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### **FINAL REPORT**

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**PREPARED BY  
THE INTERNATIONAL HURRICANE RESEARCH CENTER  
FLORIDA INTERNATIONAL UNIVERSITY  
Miami, FL 33199**

## Volume 2 Chapter 1



### **Eliminating State and Local Barriers to Upgrading Existing Mobile Homes and Communities**

#### **Scope of Work:**

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.

- (a) Work will build upon research conducted during the year 2001-2002 in Broward, Hillsborough, Miami-Dade, Pinellas and Polk counties.
- (b) The specific geographical areas where research data will be collected, including specific counties or municipalities, will be identified in consultation with a subcommittee designated by the Advisory Council to include Mr. Robert S. Cohen, Mr. Don Hazelton and Ms. Lori Killinger or their designees.

(c) The specific area or areas to be included in the 2002-2003 research cycle will depend on priorities set by DCA, other research objectives required by DCA and budgeting constraints.

(d) 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.

### **Research Titles and Players:**

#### **1.1 Eliminating State and Local Barriers to Upgrading Existing Mobile Homes and Communities**

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## 1.1 ELIMINATING STATE AND LOCAL BARRIERS TO UPGRADING EXISTING MOBILE HOMES AND COMMUNITIES

### I. EXECUTIVE SUMMARY

The IHRC Team focused on two key areas of study:

- Upgrading mobile home parks
- Case studies of closed mobile home parks

The team focused primarily on west central Florida. This report is based on:

(a) analyses of local land use laws, codes and plans; (b) interviews with manufactured home park residents, managers, manufacturers, and agents/brokers; (c) interviews and discussions with architects and engineers who practice in hurricane prone areas; (d) meetings with staff from building and planning offices, and mobile home park owners; (e) observations of mobile home parks; (f) literature and internet searches.

Key findings include:

- Subsidies and/or inducements (including monetary) could be developed to assist the poorest residents of these parks to afford safer housing.
- Definitions of *mobile, manufactured, and modular housing* is ambiguous and confusing to the public, planning staff, developers, and the press
- Education has been given insufficient attention, but must be linked to the land-tenure conclusion. It is clear that most owners of mobile homes simply do not understand the economics underlying their ownership, nor the ways in which these affect them.
- The redevelopment of leasehold communities as single-family subdivisions may be unrealistic for a substantial number of reasons. However the team found examples of mobile home subdivisions that are being redeveloped as permanent housing communities.
- The research indicates that about half of the displaced mobile home residents continue living in mobile homes that are usually newer and in better condition than the ones they abandoned. The other half of the displaced residents move to a variety of housing types including apartments, single family houses, and rooms in family members' houses.

- While the process of moving is emotionally and financially challenging, a large majority of the displaced residents indicated that they were “better off” after the move.
- Virtually all of the displaced residents who moved to other mobile home parks in west central Florida, moved to leasehold communities
- Many displaced residents expressed regret at the loss of community and convenience of their former mobile home parks.
- Because of the specific requirements of the Mobile Home Relocation Trust program, few displaced mobile home residents have benefited from the program.

## **II. INTRODUCTION**

### **A. OBJECTIVES**

#### **Track 1: Upgrading mobile home parks**

The purpose of this track was to analyze issues relative to the upgrading of mobile home communities. The team looked at existing mobile home parks in west central Florida that are marginal with a view to their redevelopment into zoning-conforming lots appropriate to more permanent affordable housing.

#### **Track 2: Case Studies of closed mobile home parks**

The purpose of this track was to develop case-studies of mobile-home parks that have, or are about to be, closed as a result of given pressures. The team studied the specific pressures that came to bear on these parks, and the ultimate factors causing each park’s closure or abandonment. This process of study included the following questions: (a) What remedies were attempted, if any, and why did they fail? (b) What happened to the residents of the park? (c) Where did they move to? (d) Are they still residing in the area? (e) How many are still residing in mobile home parks? These case studies include an analysis of the specific contributors, reasons for the eventual outcome and recommendations for potential remedies.

## **B. RESEARCH TEAM**

Members on the IHRC Team responsible for these specific studies are all associated with the University of South Florida School of Architecture and Community Design (Florida Center for Community Design and Research). The principal investigator is Associate Professor Stephen Schreiber. Faculty contributors include Professor Alexander Ratensky and Associate Professor T. Trent Green. Research assistants on the project are architecture students Swapnali Salunkhe, Kevin Nickorick, and Laura Lake.

## **III. UPGRADING MOBILE HOME PARKS**

### **A. BACKGROUND**

The purpose of this track was to analyze issues relative to the upgrading of mobile home communities. The team looked at existing mobile home parks in west central Florida that are economically marginal to assess the feasibility of their redevelopment into zoning-conforming lots that would be appropriate to other types of affordable housing. The intent was to identify potential impediments to the redevelopment of the parks as affordable single-family subdivisions. The work was to build on earlier studies that looked at the physical implications of re-platting existing mobile home parks.

Because of the growth of the county and state there is no lack of new residential developments at all but the very lowest economic level. These include manufactured home communities, several of which were visited by the IHRC team. While the layout of mobile home parks is in general very tight, this is a factor of the affordability of manufactured houses, and appears to foster a positive sense of community among the residents as many observers have noted. These newer communities appear to be meeting the demand for HUD certified manufactured housing for newcomers or for those who can afford to move and have become aware of the deficit of the older, grand-fathered parks and housing stock. Nevertheless, this older stock is serving a vital function in housing the poorest segment of the population.

Most mobile home parks resemble each other more than they differ. Generally the lots are configured for single unit homes and are closely spaced, with minimal side yards. Their roads are typically narrow, more along the lines of driveways [technically *easements*], and are minimally improved. Densities are as high as 50 units per acre. The typical mobile home dweller feels a degree of autonomy afforded by the freestanding home.

Individual sites in a licensed mobile home park are not legally described parcels. The entire mobile home park is a single parcel. Internal lot lines and setbacks in a community are features of landowner policy. Some local governments or similar entities of jurisdiction impose setback standards to effectively reduce the number of usable lots and consequently the number of homes in the community. “This practice discourages homeowners from upgrading and promotes sprawl.” (Governor’s Blue Ribbon)

The efforts focused on Hillsborough and Pinellas Counties, The team feels that the findings for Hillsborough County will have general applicability within the state, because changes in the use of mobile home parks require planning authorization, and also because comprehensive planning is mandated for all counties. While the procedures in other counties may differ in detail, the basic process and other requirements will be the same.

As part of our initial fact gathering phase the team looked at the following parks:

In Pinellas County:

Louis Palms	Rainbow Court
Belleair Village	Whispering Pines
Sunpiper Trailer Park	Keystone

and these parks and subdivisions in Hillsborough County:

Lamplighter on the River	Westshore Mobile Home Park
Davpam	Tropical Acres
Lake Fantasia	Shady Acres

In addition, we looked at a modern manufactured-home community in Pasco County:

Pine Ridge Estates

The main objective of the IHRC team was to typify the patterns of land use at each community to identify similarities among the various locations. The IRC Team found that the layouts of the parks are very similar, as are the patterns of re-use. Another finding was that with respect to re-development issues can be grouped into two main categories as follows:

## 1. Regulatory

- minimum lot areas - required in some communities
- set backs - side, front, rear yards
- existing easements, covenants, deeded rights of way (typically for utilities)
- fire safety - typically turning radii, height clearances
- storm water retention
- other regulatory, including land use restrictions, development rules (must use municipal or county water and sewer, etc)

## 2. Infrastructural

- roads
- sewers
- water supplies
- electricity
- telephone

Park owners that are trying to improve the distressed appearance of their parks are often hampered by the lack of available and affordable rehabilitated mobile home units.

Therefore, the park needs to bring in nicer older homes that are appropriate for the park and the incomes of the persons demanding this product. Older parks are further limited by lot dimensions that cannot accommodate the newer wider and generally larger units. Manufactured home size trends mirror those in site-built homes; they are getting larger.

Even in cases where new homes are only slightly larger, the original layout and existing setback allowances between homes and from homes to roadways make retrofitting older parks with new homes difficult or impossible. An option in this case could be to request a variance, but the granting of such a variance could cause concerns in terms of access for emergency vehicles (if roadways are infringed upon by the new homes) as well as represent a higher risk of fires spreading (if homes are located closer together).

Another possible option to adapt to larger homes would be to reduce the number of sites in the park. In addition to being logistically difficult (since neighboring sites would need to be vacant at the same time to implement such a strategy), this activity would tend to reduce the cash flows associated with ownership of the park. Though rents for larger sites will tend to be higher, it is unlikely that they could be increased sufficiently to compensate for the sites lost in the renovation



(including the loss of use of electrical, water, and sewer infrastructure which was already in place to the removed sites). (*Taking Stock*)

A similar issue of concern is the number of single-wide manufactured homes that are being replaced by double-wide homes in mobile home parks. The industry claims the double-wide homes are more marketable, but from the perspective of the residents they can be seen as reducing the affordable housing options that the single-wide units provide.

In addition to the affordability issue, a preponderance of double-wide units can quickly change the character of a mobile home park by reducing available open space. Privacy is also affected by the reduced separation between units. The majority of the open space that is available on a mobile home lot is within a single side yard between two homes. While most lots within a park can accommodate a doublewide, the substitution comes at the expense of outdoor living areas (decks, patios, carports, etc) within these side-yard setbacks. The code requires a minimum of fifteen feet of separation between homes and a minimum of ten feet between an adjacent home and an accessory structure. For the purpose of the mobile home regulations, accessory structures include decks, patios, carports, sheds, etc. In a majority of situations, a single-wide lot includes an outdoor deck within the side yard and also accommodates the required separation from the deck to the adjacent home within the same area. When a doublewide is placed on the same lot, the ability to have the outdoor living area or carport is sacrificed to meet the minimum separation requirements. (de Raismes)

## **B. METHODS**

The IHRC Team focused primarily on west central Florida in the analysis of barriers to upgrading mobile home parks. Team members met with developers, real estate consultants who were familiar with issues related to developing and upgrading mobile home parks. Much of the analysis in the section on Hillsborough County developed from discussions with Hillsborough County Planning Commission staff, who were helpful and forthcoming.

The team also developed case studies on other mobile home communities, related to the issue of upgrading.

- Yachthaven, a mobile home subdivision in Largo (Pinellas County), is in the process of upgrading to permanent housing because of the neighborhood's vulnerability to coastal hazards. The team discussed this process with Largo planning staff, reviewed neighborhood plans, and analyzed city land use standards.
- Affordable Residential Communities (ARC), based in Colorado, acquires and upgrades distressed mobile home parks, and continues to manage them. ARC owns several parks in Florida. Team members talked to ARC staff on the phone and in person, researched articles about the company, and visited two ARC communities' projects with the company's staff.
- Through mobile home park developers in Tampa, the team learned about Cannery Village in California. Developers acquired a distressed mobile home park, replatted and redeveloped it into a modern mobile home park.

### **C. HILLSBOROUGH COUNTY CASE STUDY**

#### **Redevelopment**

Land use designations of lands occupied by existing mobile/manufactured home parks in Hillsborough County were brought into conformity with existing conditions at the time of the adoption of the Comprehensive Plan or before (early to mid 1980s). These multiple occupancies, typically as land tenants of unitary owners, are therefore reflected in the land use designations/distributions in the Comprehensive Plan. What this means is that the parks are on land already designated for multiple occupancies and inappropriate, for various reasons, for redevelopment in other patterns. The redevelopment of these properties will logically be as apartment buildings, where the need exists, since the re-platting of them to accommodate single-family affordable units will in most cases not be economically feasible. Where the parks lie outside the municipal or county service area the redeveloped sites would be required to include wells and septic systems, and these are not allowed on less than one-half acre lots. Where the parks are within the county or municipal service area current county policy requires connection of county water and sewers for new development. The cost of the hook-ups, where county water and sewer do not presently run, will be prohibitive for such developments. Where redevelopment does work is within metropolitan areas where county or municipal water and sewer are likely to already be present. But there the land values are higher resulting in pressure to redevelop as multi-story apartment buildings that would generate higher income.

While the application process is relatively straightforward. And no consultants are required through the initial phase, they are likely to be needed by most owners/ redevelopers due to potential complexities and the technical jargon associated with land use issues.

Leeway exists, and the redevelopment application is really a negotiated process. In the end the request is typically termed a planned development that goes through several stages of review and public participation, as described below, before it is approved or rejected the Hillsborough County Commission. To better understand the process we selected an older mobile home park and walked through the redevelopment process with Planning Commission and Planning and Growth Management staff. In the first go round they were concerned with a great deal of information about the proposed development:

- general information about the context
- land use by type
- transportation
- utilities, including water and sewer

### **The Application Process**

All of the matters listed above are part of a pre-application conference with county staff, during the course of which a consensus is arrived at as to what will be supported by staff when the matter comes to the hearings described below. After this conference the owners or their representatives make a formal application (on forms provided by the county) and pay the appropriate fees. The County Administrator sets a hearing date, and public notice is provided. The staff prepares a report, including its recommendations, and those of other interested governmental agencies. The public hearing is held in front of a Land Use Hearing Officer, often referred to as a *hearing master*. This is an open event, noticed to the public and to the interested parties. The hearing master makes his findings, which are filed with the county. Only after this minimum of two reviews (one formal, one informal) does the matter make its way to the Board of County Commissioners. This is also a public event, noticed to all parties. The Commissioners review the application and all evidence, the opinions of staff and of the hearing master, listen to the public, and arrive at a decision.

## Definitions

Staff of both the Hillsborough County City/County Planning Commission (responsible for state-mandated comprehensive planning) and of the County's Planning and Growth Management Division used the terms *mobile, manufactured, and modular housing* in ambiguous and sometimes confusing ways. Each member of staff had a definition that was not necessarily shared by others, though each is confident he knows the correct meaning. One member of the Growth Management staff told us that the term *modular* applies only to office and other commercial uses, never to residential. When we asked him whether there was a standard definition he referred us to the County's Land Development Code, which in chapter 12 has a long section on definitions. He looked there and read the following:

*Manufactured/Modular Building:* A structure manufactured in manufacturing facilities for installation or erection as a finished building or as part of a finished building on the building site. This shall include, but not be limited to, residential, commercial, institutional, storage and industrial structures. The building must bear an insignia of approval from the Florida Department of Community Affairs.

This is followed by a definition of *Manufactured Home/Mobile Home* that makes reference to HUD standards, but combines two home types that HUD differentiates. These local Land Use Code definitions, which county staff do not know or use, differ from HUD's in that they lump manufactured, mobile, and modular buildings into overlapping definitions, and create confusion.

A transcript of the County Commission's hearing of an application for an upgrade to an existing zoning designation, described to us as a change from mobile homes to manufactured homes, in fact refers to them as modular homes. A visit to the subdivision in question reveals nothing but manufactured homes, which is what the staff we discussed the situation with understood to have been the developer's and the County Commission's intentions. But it is not what the transcript says. To the extent that we represented the public, the public should expect to be confused by these ambiguities. This is a potential bureaucratic impediment to the redevelopment of mobile home parks, since the record, open to the public, is obscure and misleading. A greater effort to educate the public as to what is intended by these various designations is very much needed at all levels of government

## D. OTHER CASE STUDIES

### Yachthaven

This case study investigates issues faced by a mobile home community in Largo (Pinellas County). The community is made up of three subdivisions (Yachthaven Estates, Yachthaven Estates Addition, and Sleepy Hollow).

Yachthaven Estates community area was developed in unincorporated Pinellas County in the 1950s and through resident petition annexed into Largo in 1966 by referendum. There is currently a total of 73 lots that were created through metes-and-bounds lot splits and the dedication of additional right-of-way to access the lots. The area was originally platted as a two-phase, 34-lot single-family subdivision. Since its inception, the property has been predominantly developed with mobile homes. In 1986, the one large lot known as Sleepy Hollow was created through the subdivision replatting process to allow construction of the existing single-family residence. (Largo City Commission)

Residents discovered that they were in difficult position of being unable to replace their mobile homes (because they were in a flood zone) or construct site built houses (because lot sizes were too small). Thus the neighborhood was unable to upgrade the deteriorating mobile home stock.

[A home owner] discovered, at the worst possible time, that she and the other residents in the Yachthaven Estates mobile home community are stuck in a web of city, state and federal regulations, unable to replace their homes even if they are damaged or destroyed by hazards. They can't replace them with mobile homes because their community is in a flood zone and coastal high hazard area, and because it is not legally described as a mobile home park. So when their old, 1950s-era, mobile homes deteriorate to the point of needing replacement the only option is to build houses on site. But other laws require site-built houses have to be on minimum lots of 5,808 square feet. Almost all the lots in Yachthaven are smaller than that. Some are half that size. Factor in required city setbacks of up to 20 feet, and that doesn't leave room for much of a house, even if a house were allowed. (Benham, "Neighborhood")

The *Largo Comprehensive Development Plan* states, for Coastal High Hazard areas:

1. Only [mobile home] units located within existing mobile home developments, where the land is under single ownership, may be replaced.

2. Mobile Home units located on individually platted lots shall be replaced with standard housing construction material such as single-family homes regardless of lot size.

Similarly, the Largo Comprehensive Plan “Prohibit[s] mobile homes within Coastal High Hazard Areas.”

In June 2003, the City Commission of Largo approved a neighborhood plan that made all the lots legal, creating an exception to city codes. Mobile homes are still not being allowed, but modular, wood, masonry or any other construction that meets Florida Building Codes is approved. The plan also would reduce the required front setback from 20 feet to 10 feet.

The smaller lots (e.g., 40 ft. x 60 ft. and 45 ft. x 90 ft.) are allowed to redevelop in one of three ways:

- Individually as single-family residences following the same standards applied to the other lots;
- "Together" as two single-family attached (zero lot line) residences with a single-family appearance. Each unit must be maintained on as a separately deeded parcel capable of being independently owned and sold;
- Be combined into one lot (without requiring replat), allowing them to be returned to the same size as the other surrounding lots.  
(*Yachthaven Estates Neighborhood Plan*)

## **Cannery Village**

The team found few examples of manufactured housing communities that have been completely replatted, upgraded, and reused as manufactured housing communities. One example is in Newport Beach, California, where a park owner replaced old distressed units with new two-story units. Because the use stayed the same (mobile home park), the owners were not required to re-zone the land.

In 1999, Carlsberg Management Company...purchased the Cannery Village mobile home park in Newport Beach, California. It was 50% occupied with rental homes that were themselves 20 or 30 years old. Amenities consisted of a very small swimming pool and a laundry room that had been closed down.

The property had gone through bankruptcy proceedings and foreclosure. It had been for sale for two years. Prospective buyers wanted to change the zoning and convert the property to another use, but met resistance from the City of Newport Beach.

The plan was to keep Cannery Village as a manufactured home community and upgrade it into one of the finest communities in the United States. The rental homes were sold and the few homes owned by others were purchased and removed from the park. (Cannery village web site)

The owner built the following infrastructure for the property:

- Installed all-new utilities, including a new sewer and water system, new electrical and gas lines. All utilities are dedicated to the utility companies and residents pay utility charges directly to the utility company.
- Constructed new, colored, stamped concrete streets.
- Built a new, large Jacuzzi along with a shared gathering place and restrooms.
- Installed a security gate. (Cannery village web site)

All housing units are owned by Carlsberg. While the web site does not give any indication of previous rents, new rents are over \$2500/month (for house plus land). By comparison, the national average for land leases is \$300/month.

### **Affordable Residential Communities**

Affordable Residential Communities (ARC) is a Colorado-based company that buys distressed mobile home parks throughout the country, performs some upgrades, and manages the parks. It is one of the largest mobile home park owners in the country, with over 200 parks and 50,000 spaces.

Following are some newspaper accounts of their efforts to upgrade:

In 2000, the company bought Portside at The Beaches in Jacksonville. The property was owned by Harvey S. Berg of California, according to records at the Duval County Property Appraiser's Office. "Portside is our fourth and largest acquisition in Jacksonville," said John Brown, a spokesman for Affordable Residential Communities, or ARC. Between 875 and 900 units are occupied, said leasing agent Rebecca Sterner. Within 30 days, ARC expects to begin repaving roads at Portside, Brown said. The park's pavilion will be expanded from its 1,000-person capacity to a 2,000-person facility. ARC expects to spend \$150,000 on the improvements -- \$90,000 for the roads and \$60,000 for the pavilion,

Brown said. Two clubhouses, one of which is scheduled for repainting, also are on the property. (Guity)

In 1999, the company bought a mobile home park in Manhattan, Kansas. John Brown, ARC public relations official, "residents who own a 1982 manufactured home or older model, and want to sell their home, will have to make changes meeting the U.S. Department of Housing and Urban Development standards." Homes built prior to 1982 will be able to remain in Blue Valley," Brown said. "Should they decide to sell their older homes, they would have to be brought up to HUD 1976 standards." (Kistner)

The team met with David Prejean and Mike Proulx, from ARC, in June, and visited two of the company's mobile home parks in Broward County. In choosing a new community to invest in, ARC establishes a budget and evaluates the due diligence of the property. In most cases, old sewer systems are the most common factor that deters the company from investment in a park. The established budget is then used to improve the infrastructure, do extensive clean up and add amenities to the community. The usual amenities added include club-rooms, community pools, play parks, landscaping, laundry facilities and road improvements (when the road system is not municipality owned). The full report on the site visit is in the appendix

## **E. FINDINGS**

For most mobile home parks an upgrade in the housing stock to better resist hurricane force winds is the obvious needed change. Replacing older mobile homes, especially those manufactured prior to 1976, with newer post-1994 manufactured homes would be a desirable upgrade. Unfortunately the newer units are typically wider than older mobile homes they would replace. In consequence the IHRC Team's initial exploration was to determine ways to re-plate existing parks to accommodate either the newer and larger (wider) manufacture housing units or perhaps even site-built housing. Communications and contacts with county staff and others to explore the ramifications of re-platting identified and even larger problem, namely, the scarcity of low-cost housing alternatives, and programs to assist the poor in ameliorating their housing. Typically, the oldest and most decrepit mobile homes are occupied by the poorest members of society. The occupants cannot afford to pay for the newer, better and safer units. To the extent that the mobile home market operates like the automotive market it accommodates all comers – but the fundamental notion of upgrading mobile home parks by re-platting and installing newer and larger manufactured homes contains a fallacy: the poorest segment of the existing mobile home parks will be squeezed out, and will be left homeless. Also, manufactured units that would fit on many existing lots



are available, but typically are not promoted by the industry, according to some sources, which prefers to sell double-wide units.

Various subsidized housing programs that began in this country in the 1930s have been largely eliminated starting in 1973, and the trickle-down of the used and older mobile homes has for many of the poor been the only available housing stock. Eliminating them without replacement would be a disaster. However there are several steps that could be taken before attempting to re-plat existing mobile home parks.

- **Subsidies and/or inducements** (including monetary) could be developed to assist the poorest residents of these parks to afford safer housing.
- **Land-tenure** must be addressed, since the incremental increase in value of the homes is in fact typically tied up in the increase in value of the land, which the land-tenant doesn't benefit from. Where parks are failing or have failed the change of land ownership should be pursued both for humanitarian reasons and for the benefit of the larger community.
- **Education** has been given insufficient attention, but must be linked to the land-tenure conclusion. It is clear that most owners of mobile homes simply do not understand the economics underlying their ownership and how this really affects them. Studies point to the fact that capital growth associated with mobile homes inheres in the land they are located on. An educational program must address not only hurricane safety but also the larger issues of mobile home ownership or occupancy. Only then will an enlightened occupant desire and work for the safety that underlies the Hurricane Loss Mitigation Project under which this research is being conducted.

The IHRC Team has identified several factors that could adversely affect the potential redevelopment of mobile home parks as single-family subdivisions, rendering them as unrealistic. Such factors include:

- **Cost** – in many cases re-development would require the extension of municipal utilities to the parks at substantial cost to the owner/developer that would then need to be passed on to tenants
- **Bureaucratic or Regulatory impediments** – in cases where the mobile home parks are zoned for multiple occupancies, any proposed change could involve major revisions to the Land Use Code, involving hearings, professional

consultants (and their fees), etc., again the issue of costs that would be passed on to the tenants.

- **Demand** – among certain segments of the population current demand is for independent, inexpensive housing or the perception thereof, which the mobile home parks provide, not for single-family subdivisions with larger but more expensive lots, etc.
- **Re-development pressure** – as Florida’s cities expand, mobile home parks that were once on the periphery have been engulfed. Many of these parks have been or are being redeveloped, though typically as apartment buildings and at rents the former occupants cannot afford. Outside of metropolitan areas the pressure to re-develop may be non-existent, as the state has an ample supply of existing and current single-family developments.

People living in mobile homes are a growing segment of the population among the lower economic sectors of society. Manufactured homes already represent an important portion of the housing stock in Florida. From the research findings disclosed before it can be seen that upgrading of mobile home parks is very difficult and nearly impossible without special zoning considerations, except when they are dedicated to other uses such as apartment units and others. Apartment living is unacceptable to many people who now live in mobile homes. The result of these barriers is that many of the less privileged members of society live in the older generation of mobile homes, those that are the most vulnerable to hurricane impacts. It is apparent that policy is needed that will facilitate the upgrading of mobile homes and communities in order to reduce the potential for damage from hurricanes.

#### **IV. CASE STUDIES OF CLOSED MOBILE HOME PARKS**

##### **A. BACKGROUND**

The purpose of this track was to develop case-studies of mobile-home parks that have, or are about to be, closed as a result of given pressures. The team studied the specific pressures that came to bear on these parks, and the ultimate factors causing each park’s closure or abandonment. This process of study included the following questions: (a) What remedies were attempted, if any, and why did they fail? (b) What happened to the residents of the park? (c) Where did they move to? (d) Are they still residing in the area? (e) How many are still residing in mobile home parks? These case studies

include an analysis of the specific contributors, reasons for the eventual outcome and recommendations for potential remedies.

Throughout the state of Florida, and particularly in the west central Florida region, there are significant numbers of older mobile homes in use today. Many of these structures were installed between the early 1950's and late 1980's and have been consistently inhabited ever since. This category of mobile home tends to be the most vulnerable under adverse weather conditions. A combination of factors-- age, sustained use, inability to be upgraded or renovated, substandard and often unauthorized modifications-- contribute to unsafe and hazardous conditions. The fact that most of these structures were built under less stringent regulations that did not take into consideration the problems of hurricane impacts, suggests that many of these mobile homes should be retired from further use. Invariably, these structures incorporated approximately 500 to 700 square feet of floor area in a rectangular unit, and occupy regular-shaped parcels. Typical dimensions are 25 feet by 40 feet.

There are two principal ownership structures of mobile home parks (also called manufactured housing communities): homes placed on land owned by the mobile home residents, and homes placed on land rented from a landlord (leasehold communities).

The former includes mobile home subdivisions, mobile home park cooperatives, and mobile homes placed on discrete lots. In those cases, the homes are generally treated like conventional single-family housing units with respect to financing and unit resale.

More common are leasehold communities. Lease rates vary based on the quality of the community, its location, amenities and services included in the rent. The services may include water, sewer, trash collection and cable television. Tenants of rental parks, however, do not generally use conventional loans. Moreover, tenants in rental parks face many of the same risks as other renters, including potential rent increases, poor maintenance of common areas and eviction. The actual mobile homes are either owner occupied or also rented (from the mobile home park or from a third party).

Mobile homes are an important part of the affordable housing stock in Florida and are often the only home ownership opportunity many families and retirees have. According to *Manufactured Housing as a Community and Asset Building Strategy*:

Problems with older units are more common among rented manufactured homes. While 95 percent of homes built since 1993 are owner-occupied, only 73 percent of those built prior to 1976 are. The low-income households that often occupy these older rented units

have few housing options, making problems in this section of the nation's housing inventory particularly troubling. Consequently, many of the nation's lowest-income families, both owners and renters, continue to live in deteriorating manufactured units that have long outlasted their useful life.

As a result these older units are a critical housing source for many low-income people. Strategies are needed to assist the thousands. Who live in these units, with particular emphasis on those leaving in rental units, which often are in substandard condition?

Homes manufactured before 1976, when the HUD code was enacted, present the greatest challenges, due to their small size and often advanced state of physical deterioration. While only 26 percent of owner-occupied manufactured units built since 1993 are smaller than 1,000 square feet, two-thirds of those built prior to 1976 are. For renters the gap is even greater, as fully 83 percent of rented units built before 1976 are 1,000 square feet or less, while just 31 percent of rented units built since 1993 are as small.

## **B. WEST CENTRAL FLORIDA**

Florida ranks third in the United States, trailing only Texas and California, for the number of people living in manufactured homes and manufactured home communities. Nearly one in eight housing units in the state is a manufactured home. Pinellas County, and the surrounding counties of Hillsborough, Pasco, and Polk, has consistently been among the top five counties in Florida for their number of manufactured homes. Pinellas County now has the second largest share of the manufactured home market in the State of Florida.

Pinellas, Hillsborough, and Polk Counties have a large concentration of mobile home parks. There are 60,000 mobile homes in all of Pinellas County, housing almost 20% of the population. Mobile home parks account for 3% of the county's land. One third of Largo residents (Pinellas County) live in mobile homes. Mobile home parks cover 12 percent of the city's land. According to the *St. Petersburg Times*:

With a dearth of vacant property leaving Pinellas County built out, Largo and other cities are left with only one option for development -- tearing down aging structures and replacing them with new buildings. And when you get down to it, what you see in Largo are more than 11,000 mobile homes in 61 parks. (Sandler)

## **C. CONVERSION**

State and local regulations generally allow mobile home park owners to close and convert mobile home parks to other uses consistent with local zoning ordinances. A significant proportion of mobile home parks are located in land zoned for non-residential use, enabling straightforward conversions.

Under present law, homeowners and buyers often have no way of knowing whether a park might come up for sale or redevelopment, said Frank Williams, executive director of the Florida Manufactured Housing Association. Most of the parks being redeveloped, he said, were built more than 30 years ago. "The economics no longer work" for park owners, he said. If buyers see an old community suddenly being surrounded by supermarkets and upscale developments, Mr. Williams said, "a light bulb should go off," adding, "But if they're moving into a modern retirement community, the chances of change are almost nil." (Eaton)

The decision to convert a park to another use necessarily involves the displacement of existing residents, forcing them to move or abandon their mobile homes. Many of the older mobile homes cannot be moved. The process of moving a mobile home is similar in intensity and cost to moving a stick built house, for several reasons. Temporary axles and wheels are bolted to the chassis by the movers and then removed once the mobile home is delivered and set on its chocks or placed on a foundation at the new location. The costs associated with moving a mobile home are substantial, often ten thousand dollars or more. (Sheehan)

Mobile home parks containing a total of 3,000 homes closed in the last three years, according to Don Hazelton, president of the Federation of Manufactured Home Owners of Florida (Eaton).

## **D. DEMOGRAPHICS**

Mobile home owners are typically younger or older than owners of site-built homes. Owning or renting a mobile home is appealing to the elderly, because less of their wealth is tied up in real estate, making it accessible for emergencies. Furthermore, this group tends to be less concerned about building up equity.

Manufactured units also have many characteristics favored by empty-nest households, particularly smaller yards and living space contained on one level. Some manufactured-home communities focus on the needs of older homeowners, even restricting residents to age 55 and older. The low costs are appealing to first time homebuyers, “especially those with limited incomes or savings, such as single-parent households and single females” (Apgar).

## **E. COMMUNITY**

Urban mobile home parks are attractive to developers because they are often on large tracts of commercially zoned property in rapidly developing areas, with a single owner. By definition, the “mobile homes” on that property are not permanently fixed to the ground, thus facilitating their removal. And mobile home park residents are often politically marginalized. However there is a significant human dimension to each mobile home park.

Mobile home residents are typically poorer than the average renter household, with incomes of roughly two-thirds the renter level, and many, are elderly residents whose friends, contacts, and community have centered on the park for years, if not decades. Traditionally, mobile home residents are stable. Upwards of 80 percent of all mobile home park residents “their current location is the first mobile home residence they have had. When mobile homes are sold, they are almost universally sold *in place* to a new resident who buys the mobile home from the current owner and becomes the new renter of the park space”. (Sheehan)

It is not uncommon for residents of manufactured home communities, particularly those on leased lots, to refer to the community or park as their neighborhood. In fact, with relatively high densities compared to other housing in rural or suburban areas, manufactured-home communities often represent tightly woven social networks more commonly thought of in urban areas. (Apgar)

This sense of community was expressed by many of the mobile home park residents interviewed by the team. Former residents of Sunnydale indicated to the research team:

“I choose to live in a mobile home park as I love to live there. I enjoy the close knit community feeling and the interaction among neighbors.”

"I prefer to live in a Mobile Home Park because of the freedom it gives and community interaction. This one in particular is very good with a community space and a swimming pool around which we hold gatherings."

Residents interviewed by newspapers gave similar accounts:

[Kapok] feels like "country living," said one Canadian winter resident, Leonard St. Pierre. "There's no other park like this," added his wife, Lina. (*St. Petersburg Times*)

"[Kapok] feels like you're camping all the time," said Nancy Chiormitro, who lives in Friendly Village with her boyfriend. "There are otters, gators, eagles and hawks. (*St. Petersburg Times*)

"We had a lot of good years [at Bamboo Village]... I was hoping they'd give us at least a year to stay," Gray says. "It was so handy here." "If you run out of milk, you just go to Benson's," said Shaw, of the historic supermarket next-door to the park. "We always considered this our Bamboo family." (*Bonita News*)

There's no spa, no golf course, no private access to a palm- studded beach. But Buddy Young and Linda Meier call their home "The Resort" just the same. They live at the Bay Breeze Motor Home Park on S West Shore Boulevard. It's safe, and quiet, and beautiful in its own scrappy way, they say. And best of all: Rent is \$155 a month. (*St. Petersburg Times*)

## F. STATE LAWS

Several laws protect displaced residents of mobile home parks that are being converted. The laws fall under Chapter 723 of Florida Statute. Generally the laws protect mobile home owners but not necessarily home renters.

### **723.071 Sale of mobile home parks.**

(1)(a) If a mobile home park owner offers a mobile home park for sale, she or he shall notify the officers of the homeowners' association created pursuant to ss. 723.075-723.079 of the offer, stating the price and the terms and conditions of sale.

(b) The mobile home owners, by and through the association defined in s. 723.075 shall have the right to purchase the park, provided the home owners

meet the price and terms and conditions of the mobile home park owner by executing a contract with the park owner within 45 days, unless agreed to otherwise, from the date of mailing of the notice and provided they have complied with ss. 723.075-723.079. If a contract between the park owner and the association is not executed within such 45-day period, then, unless the park owner thereafter elects to offer the park at a price lower than the price specified in her or his notice to the officers of the homeowners' association, the park owner has no further obligations under this subsection, and her or his only obligation shall be as set forth in subsection (2).

### **723.061 Eviction: grounds, proceedings**

(1) A mobile home park owner may evict a mobile home owner or a mobile home only on one or more of the grounds provided in this section.

(d) Change in use of the land comprising the mobile home park, or the portion thereof from which mobile homes are to be evicted, from mobile home lot rentals to some other use, provided all tenants affected are given at least 6 months' notice of the projected change of use and of their need to secure other accommodations. The park owner may not give a notice of increase in lot rental amount within 90 days before giving notice of a change in use.

### **723.612 Change in use; relocation expenses; payments by park owner.**

If a mobile home owner is required to move due to a change in use of the land comprising the mobile home park as set forth in s. 723.061(1)(d) and complies with the requirements of this section, the mobile home owner is entitled to payment from the Florida Mobile Home Relocation Corporation of:

(a) The amount of actual moving expenses of relocating the mobile home to a new location within a 50-mile radius of the vacated park, or

(b) The amount of \$5,000 for a single-section mobile home or \$10,000 for a multi-section mobile home, whichever is less. Moving expenses include the cost of taking down, moving, and setting up the mobile home in a new location.

### **723.83 Governmental action affecting removal of mobile home owners.**

No agency of municipal, local, county, or state government shall approve any application for rezoning, or take any other official action, which would result in the



removal or relocation of mobile home owners residing in a mobile home park without first determining that adequate mobile home parks or other suitable facilities exist for the relocation of the mobile home owners.

## **G. METHODOLOGY**

The team identified numerous mobile home parks in west central Florida that had closed, or were in the process of closing. It developed case studies of each (see appendix) including project profile, project, vulnerabilities, and literature search for each. The team selected two parks for in-depth study: Sunnydale in Tampa, and Kapok in Clearwater.

Sunnydale was selected because it was a contentious recent closing that was market driven. The closing the park was covered by the local media, and inspired the new Mobile Home relocation program. It appeared that the park had some vocal former residents who would be willing to talk to the team.

Kapok was selected because it is currently in the process of closing. The park is currently owned by the city (who will turn the property into a retention pond). Thus, the park closing is in the public eye, and has been carried out in a much more positive manner than Sunnydale.

In addition the team studied information about displacement of mobile home park residents from a master's thesis, from the state's mobile home relocation trust, and from news articles.

### **Sunnydale**

Sunnydale, in South Tampa, closed in 2000. The community's owners gained notoriety when the owners evicted its largely elderly and disabled residents from the 200-home complex so that the site could be developed into luxury apartments. That led in part to state legislation creating a \$500,000 trust fund that helps pay to move people who own their mobile homes, along with a contribution from landowners.

The following sources were used to find names of former Sunnydale residents:

- The team studied Tampa reverse phone directories from 1999 to 2000 to determine residents who lived at Sunnydale. The directory lists names of residents by address. The process was complicated because some residents

indicated that they lived at the park’s main address (4207 S. Dale Mabry) while others used internal driveways as their addresses (e.g., “Avenue C”). As the property has been replatted, the team had to find old property appraisers’ maps to find the names of those internal streets. From this process, the team got a list of approximately 110 names.

- The team studied the minutes from city council meetings, in which the Sunnydale closure was discussed. As many residents were present at those meetings, their names were included in the public documents. From this process, the team developed a list of about 10 names.
- The team found approximately 2 other names from newspaper articles written about Sunnydale

<b>Residents at time of closing</b>	<b>Likely current address found?</b>	<b>Confirmed</b>	<b>Interviewed</b>
<b>121</b>	<b>51</b>	<b>22</b>	<b>13</b>

From the City Directory, the team found the names of 121 residents, who lived at Sunnydale at the time it closed. The team used current on line phone directories to find likely current addresses for those residents. If there was only one listing in Florida under that person’s full name, that address was considered to be a likely current address. If there were 2 listings, the closest address to Sunnydale (and/or the one the address with the closest demographics to Sunnydale) was considered to be the likely current address. Using this method, 51 likely current addresses were found. The team then called all 51 and was able to confirm that 22 had lived in Sunnydale—the remaining 29 did not answer the phone, had non-working numbers, or did not return calls. The team was able to interview 12 of the confirmed former residents

<b>Current address found</b>	<b>Number in mobile home parks?</b>	<b>Distance from Sunnydale</b>	
<b>51</b>	<b>26</b>	mile	11
		1-5 miles	16
		5-10 miles	2
		10-25 miles	2
		25-50 miles	10
		50-100 miles	1
		Over 100 miles	9

The team compared likely current addresses to known addresses for mobile home parks in Florida. If there was any doubt, the team double-checked aerial photos available on terrafly.com.

For those residents who confirmed that they had lived at Sunnydale, the team asked permission to conduct short interviews, regarding current living arrangements, financial and emotional status.

## **Kapok**

City of Clearwater Flood Plain Restoration Project requires acquisition, relocation, property management, demolition and disposition of the Friendly Village of Kapok. The project involves the purchase of a 37-acre mobile home park and acquisition or relocation of more than 236 mobile homes. The city will use the land to create a nature park with wetlands and a small lake. The lake will allow the city to drain excess rainwater from other developments along Alligator Creek in northeast Clearwater, preventing flooding. The city received a \$3.5-million grant to buy the Friendly Village of Kapok mobile home park and relocate the residents.

The team used a similar process as that used for Sunnydale. Kapok is in the process of closing, and thus it was easier to track down residents who had moved or were about to move. During the interviews, team members met a relocation specialist, Des Kirkland, from Florida Acquisition and Appraisal, Inc. who was managing the relocation process. He provided specific information regarding of the displaced residents.

## **H. FINDINGS**

### **Sunnydale**

The team interviewed 13 former Sunnydale residents, representing over 10% of the families who lived in the park at the time it was closed (about 1/3 of the 200 spaces were abandoned in August 2000, when Tampa city council voted to approve the closing). The team was able to locate current addresses for about another 25% of the former residents. Fifty percent of the former residents of Sunnydale, interviewed by the team, continue to live in mobile home parks (and 40% of those live in parks owned by the park's former owners). However, none of these residents were able to move the mobile homes they occupied at Sunnydale. The remaining 50 % live in rental apartments (including senior housing) or with family.

These percentages are consistent with the group of former residents for whom the team found addresses but were not able to interview.

All former Sunnydale residents, who were interviewed by the team, indicated the relocation from the mobile home park was a financial hardship. All but one indicated the move was an emotional hardship. However, two years after the move two-thirds of the relocated residents told the team that they are “better off” now than when they lived at Sunnydale.

The table that’s follows summarizes answers received when interviewing individuals who had relocated from Sunnydale:

Live in MHP?	If yes, why?	If yes, own Mobile Home	Financially hurt by move?	Emotionally hurt by move?	Better off now than Sunnydale?
yes	community	yes	yes	yes	yes
no (apartment)			yes	no	yes
no (senior)			yes	yes	yes
yes	community	yes	yes	yes	yes
no (senior)			yes	NA	NA
no (apartment)			yes	NA	NA
yes	cost	yes	yes	NA	NA
yes		yes	yes	yes	no
No (apartment)			yes	NA	no
yes		yes	yes	NA	NA
yes			yes	NA	NA
yes			yes	NA	NA

For full interview sheets, see appendix

## **Kapok**

According to Des Kirkland, 95% of the people relocated from this park are satisfied with the process.

All the mobile homes in this park were too old and fragile to be moved. Hence most of the park tenants were given options to buy new mobile homes or conventional housing or move into rental houses. Most of the senior residents preferred mobile home parks as they are cheaper than buying residences.

The city of Clearwater has been generous in helping residents move. The assistance provided by the city exceeds that of the mobile home relocation trust or similar programs.

Of the 230 displaced residents:

- 80 bought mobile homes
- 20 rented apartments
- 50 bought site-built residences
- 80 went to other mobile home parks on their own

About 80% of the residents moved within Florida with the rest going to states such as California, Ohio and Kentucky.

## **Evans Park and Park Place**

In 1996, Catherine Sugg, a graduate student in anthropology studied the relocation of displaced tenants from two mobile home parks in Tampa. The parks, near Tampa International Airport, were being purchased by the Hillsborough Aviation Authority for expansion of the airport. Both parks primarily housed economically challenged families. The parks themselves were in severely distressed condition. Ms. Sugg used a range of research methods including direct observation, interviews, questionnaires, and literature research. The Hillsborough County Aviation Authority was reasonably generous with relocation benefits for the displaced families, because federal funds were involved and because of the visibility of the relocation.

Among the key findings:

- Ms Evans tracked the relocation choices of 71 residents in the two parks. Many of the displaced residents moved into other mobile homes in parks that were situated on the outskirts of the city. Almost an equal third of the residents of one park (Park Place) moved into another mobile home, an apartment, or a house.
- Over 40% of the residents of the other park (Evans) moved into mobile homes
- All residents that moved to mobile homes moved to leasehold communities.
- Most of the displaced elderly residents moved to newer mobile homes in the same area.
- In a 6-month follow up after relocation, a third of the displaced residents had moved again.
- Relocation was a “break” for many of the residents. The relocation funds afforded them opportunities to buy houses, or rent better apartments or mobile homes. Only 18% of displaced residents said they were worse off financially after the displacement. (Sugg)

### **Conversions partially supported by Mobile Home Relocation Trust**

The IHRC Team also contacted the Mobile Home Relocation Trust Corporation, the publicly funded (partially) organization that assists mobile home owners in parks that are closing. The corporation provided the team with the names of all residents helped since the program began in 2001.

Following is a list of number of people helped by the mobile home relocation trust fund from each park:

<b>Name of Park</b>	<b>Address</b>	<b>No of People Helped</b>
Trailer groove Trailer Park	730 NE 90 St, Miami, FL 33143	21
KOA Kamp Ground	1475 S Walnut St, Starke, FL 32091	15
Greco’s Mobile Home Park	1410 Beach Blvd, Jacksonville, FL 32250	13
Azalea Mobile Home Park Est.	6301 Roosevelt Blvd, Jacksonville, FL 32244	10
Tyres Mobile Home Park		8
Seagull Trailer Park	14700 Front Beach Rd, Panama City Beach, FL 32413	8

Reaves Trailer Port	1400-1438 Beach Blvd, Jacksonville, FL 32250	7
Big Gator Trailer Park West	24 <sup>th</sup> St, Mexico Beach, FL 32410	6
Griffin Lakes Park	2300 Griffin Rd, Ft Lauderdale, FL 33312	4
Panorama Mobile Home Park	215 Courtenay Pkwy S, Merritt Island, FL 32952	2
Hibiscus Trailer Park	3131 W 16 <sup>th</sup> Ave, Hialeah, FL 33012	2
Palace Mobile Home Park	2500 54 <sup>th</sup> Ave N, St Petersburg, FL 33714	2
Quail Run Mobile Home Park	2445 Eber Rd, W Melbourne, FL 32904	2
Sebring Mobile Home Village	648 N Ridgewood Dr, Sebring, FL 33870	2
A- Riverside	N/A	1
Charlotte Harbor RV Park	4838 Tamiami Trail, Charlotte Harbor, FL 33980	1
Safari Pines Estate	4600 26 <sup>th</sup> St, Vero Beach, FL 32960	1

To date just over 100 people have been helped by the program, which is a surprisingly low number given the large number of mobile home parks that have closed in Florida. Only 3 people from west Florida (2 in St. Petersburg and 1 in Charlotte Harbor, have apparently received assistance. The team was not able to contact those residents. The low number of Mobile Home Relocation Trust claims is partly because of the program specific requirements, which result in applications for abandonment compensation or for relocation assistance being initially denied for a range of reasons, such as:

(a) Discrepancies between the name (s) listed on the application and the name (s) appearing on the eviction notice, or on the title, or on the installer’s contract, or on the paperwork for relocation assistance; (b) The “wrong” designation of body type as given by the Department of Highway Safety and Motor Vehicles. Only the “HS” designation is considered a mobile home, but not the “MH” or the “TV” designations.

### **Other Parks**

From newspaper articles, planning officials, and word of mouth, the team identified numerous parks in west Florida that have closed in the last few years, or are in the process of closing, and developed case studies for each.

A summary of those reports follows below:

<b>PROPOSED CLOSURES—PINELLAS</b>				
<b>Name</b>	<b>MH spaces</b>	<b>Proposed Use</b>	<b>Currently Public or Private?</b>	<b>Comments</b>
Belleair	81	Residential/ commercial	Private	Community Redevelopment incentives
Blue Skies	53	Residential/ commercial	Private	Community Redevelopment incentives
Braginton Oaks	70	Residential/ commercial	Private	Community Redevelopment incentives
Clearwater Trailer	156	Residential/ commercial	Private	Community Redevelopment incentives
Gulf Breeze	49	Residential/ commercial	Private	Community Redevelopment incentives
Holiday	650	Residential/ commercial	Private	Developing area—all RV spaces
Keystone	84	Residential/ commercial	Private	Community Redevelopment incentives
Louis Palms	19	Residential/ commercial	Private	Community Redevelopment incentives
Rainbow	126	Residential/ commercial	Private	Community Redevelopment incentives
Shady Dell	33	Residential/ commercial	Private	Community Redevelopment incentives
Skylark	120	Commercial	Private	
Skyview	39	Residential/ commercial	Private	Community Redevelopment incentives
Sunpiper	66	Residential/ commercial	Private	Community Redevelopment incentives



Whispering Pines	68	Residential/ commercial	Private	Community Redevelopment incentives
<i>Affected spaces=1614</i>				
<b>PROPOSED CLOSURES—Hillsborough</b>				
<b>Name</b>	<b>MH spaces</b>	<b>Proposed Use</b>	<b>Currently Public or Private</b>	<b>Comments</b>
Bay Breeze	15	Residential	Private	Developing area—all RV spaces
Westshore	105	Residential	Private	Developing area
<i>Affected spaces=120</i>				
<b>IN PROCESS OF CLOSING—PINELLAS, HILLSBOROUGH, LEE</b>				
<b>Name</b>	<b>MH spaces</b>	<b>Proposed Use</b>	<b>Currently Public or Private</b>	<b>Comments</b>
Kapok	236	Retention pond	Public	Pinellas—Full report in this document
Oakwood	75		Private	Hillsborough
Bamboo	89	Residential/ Commercial	Public	Lee-- Community Redevelopment incentives
Palace	91	Commercial	Private	Pinellas
<i>Affected spaces=491</i>				
<b>CLOSED—PINELLAS</b>				
<b>Name</b>	<b>MH spaces (estimated)</b>	<b>New Use</b>	<b>Currently Public or Private</b>	<b>Comments</b>
Lake Seminole	50	Commercial	Private	
Silvercrest	100	Commercial	Private	
Largo Village	25	Retention pond	Public	

Pine Grove	16	Park	Public	
Snug Harbor	100	Residential	Private	
<i>Affected spaces=291</i>				
<b>CLOSED—HILLSBOROUGH</b>				
<b>Name</b>	<b>MH spaces (estimated)</b>	<b>New Use</b>	<b>Currently Public or Private</b>	<b>Comments</b>
Sunnydale	200	Residential	Private	Full report in this document
Drew Park/ Evans Park	200	Airport expansion	Public	
<i>Affected spaces=400</i>				
<b>TOTAL AFFECTED SPACES=2600 approx</b>				

This partial list indicates that 2600 mobile home spaces (over 6500 residents, using the standard of 2.5 residents/household) are affected by these conversions of 27 parks. The team studied the whereabouts of two of the parks in detail (Sunnydale and Kapok). Detailed information is available in a master’s thesis about two additional parks (Drew and Evans).

The research indicates that about half of displaced mobile home residents continue living in mobile homes. These new residences are usually newer and in better condition than the ones that were abandoned. The other half of the displaced residents move to a variety of housing types including apartments, single family houses, and rooms in family members’ houses. While the process of moving is emotionally and financially challenging, a large majority of the displaced residents indicated that they were “better off” after the move. Many displaced residents expressed regret at the loss of community and convenience of their former mobile home parks.

## V. APPENDICES

- A. Case studies
- B. Photos of case study parks
- C. Yachthaven
- D. Sunnydale Interview summaries
- E. Letter from Mobile Home Relocation Trust
- F. Site visit to ARC communities in Broward county

## VI. REFERENCES

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### **Statutes**

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Zoning codes and comprehensive plans: Pinellas, Hillsborough Counties and their incorporated communities, especially Largo and Tampa.

## Letters

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## APPENDIX A: CASE STUDIES OF MOBILE HOME PARKS THAT ARE CLOSED OR IN THE PROCESS OF CLOSING

### LAKE SEMINOLE

10550 Park Blvd,  
Seminole, Pinellas County

#### Project Profile

Mobile home spaces:

Acres

New land use/date of change: Home Depot/1998

Value of land:

Vulnerabilities:

- Commercial area X
- Dense residential area
- Nearby public amenity
- Flood plain
- Distressed condition X
- Other

#### Description of change:

Lake Seminole Campsite closed in 1998 to make room for a Home Depot. By law, Home Depot didn't have to give the residents a cent. All the company had to do was give the mobile home owners a year to move, as the law stipulates. But the company had its image to think of and gave financial help to the campsite's mobile home residents. Home Depot would not disclose the amount.

#### Photo

Yes--appendix

#### Source:

Byrne, Maureen, "Park's tenants brace for possible move", *St. Petersburg Times*, March 23, 2001

## HOLIDAY CAMPGROUND

10000 Park Blvd.

Seminole, Pinellas County

### Project Profile

Mobile home spaces: 650 (labeled as “recreational vehicle” spaces)

Acres 101 (55 unbuildable)

New land use/ date of change: single-family homes, town homes and condominiums/proposed

Value of land: \$11.4-million (assessed)

Vulnerabilities:

- Commercial area X
- Dense residential area X
- Nearby public amenity (park) X
- Flood plain X
- Distressed condition
- Other

### Description of change:

Developers want to build a \$100-million residential community that would replace the 30-year-old park. The property's land use and zoning designations allow for hotels, motels, inns, resorts and recreational vehicle parks. As the park has no permanent mobile home spaces, all residents are assumed to be seasonal.

### Photo

Yes--appendix

### Source

Byrne, Maureen, “Park’s tenants brace for possible move”, *St. Petersburg Times*, March 23, 2001



## **PINE GROVE MOTEL/MOBILE HOME PARK**

4630 East Bay Drive  
Largo, Pinellas County

### **Project Profile**

Mobile home spaces: 16 (plus permanent duplexes)

Acres: 1.76 acre

New land use/date of change: Park/pending

Value of land: \$370,000 (appraised)

Vulnerabilities:

- Commercial area X
- Dense residential area
- Nearby public amenity X
- Flood plain X
- Distressed condition X
- Other

### **Description of change:**

The City Manager, Assistant City Manager, and Recreation and Parks Department Director recommended purchase of this property to improve access to and utilization of Northeast Park. Purchase of this property would allow for a new entrance road and parking lot with direct access to East Bay Drive. The Recreation and Parks Department has proposed that in addition to a new entrance road and parking and associated drainage improvements, the two duplexes could be renovated, one for use as public restrooms and one for use as a police office.

### **Photo**

Yes--appendix

### **Source**

City of Largo, Commission minutes, 2/10/98

## LARGO VILLAGE MOBILE HOME PARK

175 Seminole Blvd  
Largo, Pinellas County

### Project Profile

Mobile home spaces:

Acres

New land use and date of change: Retention pond

Assessed Value of land:

Vulnerabilities;

- Commercial area X
- Dense residential area
- Nearby public amenity
- Flood plain X
- Distressed condition X
- Other

### Description of change:

In 1997 the city bought Largo Village Mobile Home Park and transformed it into a retention pond to accommodate drainage along West Bay Drive. Residents who owned homes but rented the lots were given 12 months to find new homes, a requirement under state law. City officials said the park had outlived its useful life.

### Photo

Yes--appendix

### Bibliography

Sandler, Michael, "Not so mobile anymore", *St. Petersburg Times*, November 3, 2002

## KAPOK MOBILE HOME PARK

2950 Glen Oak Ave  
Clearwater, Pinellas County

### Project Profile

Mobile home spaces: 236

Acres: 37

New land use/date of change: Park/in process 2003

Appraised Value of land: \$7,200,000 (appraised)

Vulnerabilities;

- Commercial area
- Dense residential area
- Nearby public amenity
- Flood plain X
- Distressed condition X
- Other

### Description of change:

City of Clearwater Flood Plain Restoration Project requires acquisition, relocation, property management, demolition and disposition of the Friendly Village of Kapok. The city will use the land to create a nature park with wetlands and a small lake. The lake will allow the city to drain excess rainwater from other developments along Alligator Creek in northeast Clearwater, preventing flooding. The lake also will filter pollution from the creek before it flows into Tampa Bay, city officials say.

This is the first time Clearwater has purchased a mobile home park, and residents will have a year's notice before they have to move, city engineer Mike Quillen said. The city got two appraisals on the property, \$7.55-million and \$7.1-million, city records indicate, and then negotiated the \$7.3-million price. The city expects a \$3.5-million grant from the Florida Communities Trust to help finance the land purchase.

HDR Engineering Inc. of Tampa even gave the city a preliminary survey of vacancies in 82 local mobile home parks, showing 283 open spots in local senior parks -- plenty of room for elderly residents who could be displaced. But HDR found only 59 vacancies at local parks for families, and reported it might be necessary to relocate families up to 50 miles away. Another option would be to give families "supplemental housing payments" to help them find new housing nearby their current homes, HDR suggested.

### Photo

Yes--appendix

### Source:

Headrick, Christina, "Wetlands plan would uproot Friendly Village", *St. Petersburg Times*, March 12, 2001  
City of Clearwater, council minutes

## KEYSTONE

620 Clearwater-Largo Road  
Largo, Pinellas County

### Project Profile

Mobile home spaces: 84

Acres: 3

New land use/ date of change: Mixed use/proposed

Value of land: \$775,000 (assessed)

Vulnerabilities:

- Commercial area X
- Dense residential area
- Nearby public amenity
- Flood plain
- Distressed condition X
- Other

### Description of change:

The city has targeted Rainbow Court, Belleair Village, Keystone and Skyview for redevelopment. To beautify the area and boost the tax base, the city wants to change the land use and density allowed at the dilapidated parks. The intended redevelopment of the parks in the Clearwater-Largo Road CRID is for multi-family residential, but some parks may be redeveloped as mixed use or public uses. That will be achieved by increasing the density restrictions to 24 units per acre in some parts, and would enable apartments to be offered at affordable housing rates.

While Chapter 723 of the Florida Statutes provides protection for the owners, not the renters of mobile home units, parks situated in desirable locations are nonetheless subject to conversion.

The City will require that all of the provision of Chapter 723 of the Florida Statutes are met. Additionally, those residents who are eligible to receive assistance through the Florida Mobile Home Relocation Corporation will be provided with at least one (1) year to relocate in the event that a redevelopment proposal is forthcoming on one of the affected mobile home parks.

### Photo

Yes--appendix

### Source:

Benham, Kelley, "This is my Home", *St. Petersburg Times*, February 23, 2003

Sandler, Michael, "Not so mobile anymore", *St. Petersburg Times*, November 3, 2002

Largo City Commission meeting minutes

## RAINBOW COURT

1159 Clearwater-Largo Road  
Largo, Pinellas County

### Project Profile

Mobile home spaces: 130

Acres: 7.86

New land use/ date of change: Mixed use/proposed

Value of land: \$600,000 (assessed)

Vulnerabilities:

- Commercial area X
- Dense residential area
- Nearby public amenity
- Flood plain
- Distressed condition X
- Other

### Description of change:

The city has targeted Rainbow Court, Belleair Village, Keystone and Skyview for redevelopment. To beautify the area and boost the tax base, the city wants to change the land use and density allowed at the dilapidated parks. The intended redevelopment of the parks in the Clearwater-Largo Road CRID is for multi-family residential, but some parks may be redeveloped as mixed use or public uses. That will be achieved by increasing the density restrictions to 24 units per acre in some parts, and would enable apartments to be offered at affordable housing rates.

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### Photo

Yes--appendix

### Source:

Benham, Kelley, "This is my Home", *St. Petersburg Times*, February 23, 2003

Sandler, Michael, "Not so mobile anymore", *St. Petersburg Times*, November 3, 2002

Largo City Commission meeting minutes

## **BELLEAIR VILLAGE**

1025 Clearwater-Largo Road  
Largo, Pinellas County

### **Project Profile**

Mobile home spaces: 84

Acres: 1.44

New land use/ date of change: Mixed use/proposed

Value of land: \$676,000 (assessed)

Vulnerabilities:

- Commercial area X
- Dense residential area
- Nearby public amenity
- Flood plain
- Distressed condition X
- Other

### **Description of change:**

The city has targeted Rainbow Court, Belleair Village, Keystone and Skyview for redevelopment. To beautify the area and boost the tax base, the city wants to change the land use and density allowed at the dilapidated parks. The intended redevelopment of the parks in the Clearwater-Largo Road CRID is for multi-family residential, but some parks may be redeveloped as mixed use or public uses. That will be achieved by increasing the density restrictions to 24 units per acre in some parts, and would enable apartments to be offered at affordable housing rates.

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### **Photo:**

Yes--appendix

### **Source:**

Benham, Kelley, "This is my Home", *St. Petersburg Times*, February 23, 2003

Sandler, Michael, "Not so mobile anymore", *St. Petersburg Times*, November 3, 2002

Largo City Commission meeting minutes

## SHADY DELL

263 1st St NW

Largo, Pinellas County

### Project Profile

Mobile home spaces: 33

Acres: 1.55

New land use/ date of change: Mixed use/proposed

Value of land:

Vulnerabilities:

- Commercial area X
- Dense residential area
- Nearby public amenity
- Flood plain
- Distressed condition X
- Other

### Description of change:

The city has targeted 8 mobile home parks for redevelopment. To beautify the area and boost the tax base, the city wants to change the land use and density allowed at the dilapidated parks. The intended redevelopment of the parks in the Clearwater-Largo Road CRID is for multi-family residential, but some parks may be redeveloped as mixed use or public uses. That will be achieved by increasing the density restrictions to 24 units per acre in some parts, and would enable apartments to be offered at affordable housing rates.

Already, the city has talked to a developer about turning Shady Dell into single family homes. As a child, Commissioner Charlie Harper used to play in Skyview, where his grandparents lived. He has been an advocate for mobile home residents, but a trip through the parks last weekend changed his idea of what that means. "I had no idea we had places like that in Largo," said Harper, who compared the conditions in some of the parks to those of migrant workers in the documentary *Harvest of Shame*. "It's almost tragic." (Benham) The City will require that all of the provision of Chapter 723 of the Florida Statutes are met. Additionally, those residents who are eligible to receive assistance through the Florida Mobile Home Relocation Corporation will be provided with at least one (1) year to relocate in the event that a redevelopment proposal is forthcoming on one of the affected mobile home parks.

### Source:

Benham, Kelley, "2 mobile home parks worth saving", *St. Petersburg Times*, June 13, 2003

Benham, Kelley, "This is my Home", *St. Petersburg Times*, February 23, 2003

Sandler, Michael, "Not so mobile anymore", *St. Petersburg Times*, November 3, 2002  
Largo City Commission meeting minutes

## SKYVIEW

812 8<sup>th</sup> Avenue NW  
Largo, Pinellas County

### Project Profile

- Mobile home spaces: 38  
Acres: 1.23  
New land use/ date of change: Mixed use/proposed  
Value of land:  
Vulnerabilities:
- Commercial area X
  - Dense residential area
  - Nearby public amenity
  - Flood plain
  - Distressed condition X
  - Other

### Description of change:

The city has targeted Rainbow Court, Belleair Village, Keystone and Skyview for redevelopment. To beautify the area and boost the tax base, the city wants to change the land use and density allowed at the dilapidated parks. The intended redevelopment of the parks in the Clearwater-Largo Road CRID is for multi-family residential, but some parks may be redeveloped as mixed use or public uses. That will be achieved by increasing the density restrictions to 24 units per acre in some parts, and would enable apartments to be offered at affordable housing rates.

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### Source:

Benham, Kelley, "This is my Home", *St. Petersburg Times*, February 23, 2003  
Sandler, Michael, "Not so mobile anymore", *St. Petersburg Times*, November 3, 2002  
Largo City Commission meeting minutes



## SILVERCREST MANOR MOBILE HOME PARK

4040 Park Blvd.

Pinellas Park, Pinellas County

### Project Profile

Mobile home spaces:

Acres: 9.7

New land use/date of change: Home Depot /1997

Value of land: \$2,100,000 (market)

Vulnerabilities:

- Commercial area X
- Dense residential area
- Nearby public amenity
- Flood plain
- Distressed condition X
- Other

### Description of change:

Tenants bought the park for \$770,000 in 1990 and later sold it to Home Depot for more than \$2-million in 1995

### Source

Sandler, Michael, "Not so mobile anymore", *St. Petersburg Times*, November 3, 2002

## BAMBOO MOBILE VILLAGE

27131 Old 41 Road,  
Bonita Springs, Lee County

### Project Profile

Mobile home spaces: 60

Acres 5.2

New land use and date of change:

Value of land: 2.6 million (market)

Vulnerabilities:

- Commercial area X
- Dense residential area X
- Nearby public amenity
- Flood plain X
- Distressed condition X

**Description of change:** The city is removing the 60 mobile homes, 11 cabins, 18 travel trailers and four motel units from Bamboo Mobile Village and offer the property to the highest bidder with the most creative use. Those uses could include a mixed-use development with riverfront restaurants, shops and housing, some city officials said.

The city is trying to work with each resident and help them find housing. The city is offering \$1,000 on top of the \$5,000 for relocation of the mostly working-class and retired residents if they leave by the end of May 2003. Some of the residents have moved out of state, either back north or to another Southern state. One purchased land and is building a home. Some went to San Carlos Park or other places in Bonita Springs. Still others have moved to similar parks in Sebring. The fair market rent on a two-bedroom unit in Lee County is \$608 a month, according to the county planning division, though rents are generally higher in Bonita Springs.

Some are looking to the manufactured home communities of Leitner Creek and Imperial Bonita Estates, or to Rosemary Park, she said. Mary Sorge, executive director of the Bonita Spring Area Housing Development Corp., estimated 10 Bamboo residents came to the HDC looking to purchase the low-to-moderate homes the non-profit offers at prices from \$70,000 to \$90,000. None qualified. To qualify, a family of four must have an income between \$26,050 and \$62,500, Sorge said. Many Bamboo families make under that amount while some don't even make \$10,000, she said. Others had bad credit. Officials with Habitat for Humanity in Lee County said no Bonita Springs residents have applied for homes recently. Sorge said she has referred several Bamboo residents to Pueblo Bonito, a low-income community, where there's been a long waiting list since it opened.

### Sources:

Krzos, Mark, Council approves Bamboo Village purchase, *News Press*, October 17, 2002, Zeitlin, Janine, Options few for park residents, *News Press*, April 12, 2003

## Largo Village Mobile Home Park

175 Seminole Blvd  
Largo, Pinellas County

### Project Profile

Mobile home spaces:

Acres

New land use/ date of change: Retention pond/1997

Market Value of land:

Vulnerabilities:

- Commercial area X
- Dense residential area
- Nearby public amenity
- Flood plain X
- Distressed condition X
- Other

### Description of change:

In 1997 the city bought Largo Village Mobile Home Park and transformed it into a retention pond to accommodate drainage along West Bay Drive. Residents who owned homes but rented the lots were given 12 months to find new homes, a requirement under state law. City officials said the park had outlived its useful life.

### Photo

### Source:

Sandler, Michael, "Not so mobile anymore", *St. Petersburg Times*, November 3, 2002

## SUNNYDALE

4207 S. Dale Mabry  
Tampa, Hillsborough County

### Project Profile

Mobile home spaces: 200

Acres:

New land use/ date of change: Apartment complex /2000

Value of land: \$5,300,000 (Market)

Vulnerabilities:

- Commercial area X
- Dense residential area X
- Nearby public amenity
- Flood plain
- Distressed condition X
- Other

### Description of change:

As property values have climbed in South Tampa, the pressure to convert mobile home parks into something else has grown. That's what happened at the former Sunnydale Mobile Home Park in 2000. Sunnydale's owners gained notoriety when the owners evicted its largely elderly and disabled residents from the 200-home complex so that the site could be developed into luxury apartments. Many of the mobile homes were too old to move. Technically, City Council members were only to decide whether the residents of the Sunnydale Mobile Home Park on S. Dale Mabry could find other places to live. If the council decided the residents could do so, the land the park sits on could be rezoned, sold and turned into the site of an apartment complex. In the end, the City Council voted unanimously that there are enough places for the residents to go.

### Photo:

### Source:

Washington, Wayne, "Park residents must go", *St. Petersburg Times*, September 1, 2000

## **WESTSHORE MOBILE HOME PARK**

6601 Westshore Blvd.  
Tampa, Hillsborough County

### **Project Profile**

Mobile home spaces: 107

Acres: 7.5

New land use and date of change: Apartment complex /projected

Value of land: \$1,473,500 (assessed)

Vulnerabilities:

- Commercial area X
- Dense residential area X
- Nearby public amenity
- Flood plain
- Distressed condition X
- Other

### **Description of change:**

The owner of Westshore Mobile Home Park has filed paperwork with the city that indicates he intends to develop or sell the property, which houses 106 mobile homes. That may be a sign of things to come in South Tampa, where rising land values are squeezing parks out of the market. In a space that seeks a reason for the request, an agent for the Weis Group wrote: "To facilitate redevelopment of Westshore Mobile Home Park from mobile home use to a multifamily development consistent with existing RM-24 zoning." It also mentions the dumping and vandalism concerns.

### **Source**

Varian, Bill, "Park tenants fear development", *St. Petersburg Times*, February 14, 2003

## **PARK PLACE EVAN'S PARK**

Tampa, Hillsborough County

### **Project Profile**

Mobile home spaces: Evans=50; Park=33

Acres: 3

New land use/date of change: Airport expansion/1996

Assessed Value of land:

Vulnerabilities;

- Commercial area X
- Dense residential area
- Nearby public amenity (airport) X
- Flood plain
- Distressed condition X
- Other

### **Description of change:**

Evans Park and Park Place were distressed properties located in an industrial Park called Drew Park adjacent to Tampa airport. The average length of tenancy was 13 months which did little to create a sense of community. The owners of the parks were absentee landlords. Many people chose to live in the parks because of their proximity to work in the industrial park. The parks were acquired in 1995 by the Hillsborough County aviation authority for future expansion of the airport .

After the parks were closed, 30 percent of Park Place residents chose to continue living in mobile homes, 36 percent moved to apartments, 33 moved to houses; and 42 percent of Evans park residents move to mobile homes, 24 percent moved to apartments, 16 percent moved to houses. Most indicated that they were better off financially by moving

### **Source**

Catherine L. Sugg, *Relocation case study and evaluation of displaced tenants in two mobile home parks*, Masters Thesis, USF, 1996

## **PALACE MOBILE HOME PARK**

2500 54th Ave. N,  
St. Petersburg, Pinellas County

### **Project Profile**

Mobile home spaces: 91  
Acres: 5  
New land use/ date of change: Publix/2003  
Value of land:  
Vulnerabilities:

- Commercial area X
- Dense residential area
- Nearby public amenity
- Flood plain
- Distressed condition
- Other

### **Description of change:**

The property went through the first step in the county's zoning process Thursday. The owners wanted to change the zoning from residential to retail. Retail zoning would clear the way for Publix to build there, and county officials agree that appears to be the plan.

### **Photo:**

**Source:** Lindberg, Anne, Publix may replace a mobile home park, *St. Petersburg Times*, October 2, 2002

## WHISPERING PINES

701 8th Av NW

Largo, Pinellas County

### Project Profile

Mobile home spaces: 68

Acres: 4

New land use/ date of change: Mixed use/proposed

Value of land:

Vulnerabilities:

- Commercial area X
- Dense residential area
- Nearby public amenity
- Flood plain
- Distressed condition X
- Other

### Description of change:

The city has targeted 8 mobile home parks for redevelopment. To beautify the area and boost the tax base, the city wants to change the land use and density allowed at the dilapidated parks. The intended redevelopment of the parks in the Clearwater-Largo Road CRID is for multi-family residential, but some parks may be redeveloped as mixed use or public uses. That will be achieved by increasing the density restrictions to 24 units per acre in some parts, and would enable apartments to be offered at affordable housing rates.

While Chapter 723 of the Florida Statutes provides protection for the owners, not the renters of mobile home units, parks situated in desirable locations are nonetheless subject to conversion.

The City will require that all of the provision of Chapter 723 of the Florida Statutes are met. Additionally, those residents who are eligible to receive assistance through the Florida Mobile Home Relocation Corporation will be provided with at least one (1) year to relocate in the event that a redevelopment proposal is forthcoming on one of the affected mobile home parks.

### Photo:

### Source:

Benham, Kelley, "2 mobile home parks worth saving", *St. Petersburg Times*, June 13, 2003

Benham, Kelley, "This is my Home", *St. Petersburg Times*, February 23, 2003

Sandler, Michael, "Not so mobile anymore", *St. Petersburg Times*, November 3, 2002

Largo City Commission meeting minutes



## LOUIS PALMS

621 Stemma Rd  
Largo, Pinellas County

### Project Profile

- Mobile home spaces: 21  
Acres: 1.84  
New land use/ date of change: Mixed use/proposed  
Value of land:  
Vulnerabilities:
- Commercial area X
  - Dense residential area
  - Nearby public amenity
  - Flood plain
  - Distressed condition X
  - Other

### Description of change:

The city has targeted 8 mobile home parks for redevelopment. To beautify the area and boost the tax base, the city wants to change the land use and density allowed at the dilapidated parks. The intended redevelopment of the parks in the Clearwater-Largo Road CRID is for multi-family residential, but some parks may be redeveloped as mixed use or public uses. That will be achieved by increasing the density restrictions to 24 units per acre in some parts, and would enable apartments to be offered at affordable housing rates.

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### Photo:

### Source:

Benham, Kelley, "2 mobile home parks worth saving", *St. Petersburg Times*, June 13, 2003  
Benham, Kelley, "This is my Home", *St. Petersburg Times*, February 23, 2003  
Sandler, Michael, "Not so mobile anymore", *St. Petersburg Times*, November 3, 2002  
Largo City Commission meeting minutes

## BLUE SKIES

614 Woodrow Av NW  
Largo, Pinellas County

### Project Profile

- Mobile home spaces: 53  
Acres: 2.87  
New land use/ date of change: Mixed use/proposed  
Value of land:  
Vulnerabilities:
- Commercial area X
  - Dense residential area
  - Nearby public amenity
  - Flood plain
  - Distressed condition X
  - Other

### Description of change:

The city has targeted 8 mobile home parks for redevelopment. To beautify the area and boost the tax base, the city wants to change the land use and density allowed at the dilapidated parks. The intended redevelopment of the parks in the Clearwater-Largo Road CRID is for multi-family residential, but some parks may be redeveloped as mixed use or public uses. That will be achieved by increasing the density restrictions to 24 units per acre in some parts, and would enable apartments to be offered at affordable housing rates.

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### Source:

Benham, Kelley, "2 mobile home parks worth saving", *St. Petersburg Times*, June 13, 2003  
Benham, Kelley, "This is my Home", *St. Petersburg Times*, February 23, 2003  
Sandler, Michael, "Not so mobile anymore", *St. Petersburg Times*, November 3, 2002  
Largo City Commission meeting minutes

## CLEARWATER TRAILER CITY

1650 Clearwater Largo Rd  
near Largo, Pinellas County

### Project Profile

Mobile home spaces: 156

Acres:

New land use/ date of change: Mixed use/proposed

Value of land:

Vulnerabilities:

- Commercial area X
- Dense residential area
- Nearby public amenity
- Flood plain
- Distressed condition X
- Other

### Description of change:

The city has targeted 8 mobile home parks for redevelopment. The city has also identified four county parks as blighted, which means developers could get the incentives if they annexed the property into the city.

While Chapter 723 of the Florida Statutes provides protection for the owners, not the renters of mobile home units, parks situated in desirable locations are nonetheless subject to conversion.

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### Source:

Benham, Kelley, "2 mobile home parks worth saving", *St. Petersburg Times*, June 13, 2003

## SUNPIPER

1760 Clearwater Largo Rd  
near Largo, Pinellas County

### Project Profile

Mobile home spaces: 66

Acres:

New land use/ date of change: Mixed use/proposed

Value of land:

Vulnerabilities:

- Commercial area X
- Dense residential area
- Nearby public amenity
- Flood plain
- Distressed condition X
- Other

### Description of change:

The city has targeted 8 mobile home parks for redevelopment. The city has also identified four county parks as blighted, which means developers could get the incentives if they annexed the property into the city. Already, the city has talked to a developer about turning Shady Dell into single family homes, and about turning Sunpiper into townhouses

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### Photo:

### Source:

Benham, Kelley, "2 mobile home parks worth saving", *St. Petersburg Times*, June 13, 2003

## **BRAGINTON OAKS**

near Largo, Pinellas County

### **Project Profile**

- Mobile home spaces: 70  
Acres:  
New land use/ date of change: Mixed use/proposed  
Value of land:  
Vulnerabilities:
- Commercial area X
  - Dense residential area
  - Nearby public amenity
  - Flood plain
  - Distressed condition X
  - Other

### **Description of change:**

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### **Photo:**

### **Source:**

Benham, Kelley, "2 mobile home parks worth saving", *St. Petersburg Times*, June 13, 2003

## **GULF BREEZE**

512 Braginton St  
near Largo, Pinellas County

### **Project Profile**

- Mobile home spaces: 49  
Acres:  
New land use/ date of change: Mixed use/proposed  
Value of land:  
Vulnerabilities:
- Commercial area X
  - Dense residential area
  - Nearby public amenity
  - Flood plain
  - Distressed condition X
  - Other

### **Description of change:**

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### **Photo:**

### **Source:**

Benham, Kelley, "2 mobile home parks worth saving", *St. Petersburg Times*, June 13, 2003

## **BAY BREEZE**

5302 S. Westshore Blvd.  
Tampa, Hillsborough County

### **Project Profile**

Mobile home spaces: 15 (RV)

Acres:

New land use/ date of change: Townhouses/proposed

Value of land: \$475,000 (market)

Vulnerabilities:

- Commercial area X
- Dense residential area
- Nearby public amenity
- Flood plain
- Distressed condition X
- Other

### **Description of change:**

Thirty townhouses will be built where hundreds of recreational vehicles have come and gone. The City Council okayed a rezoning last week. Construction will begin in October.

### **Photo:**

### **Source:**

St. Petersburg Times, June 13, 2003

## Oakwood

2102 W Baker St  
Plant City, Hillsborough County

### Project Profile

Mobile home spaces: 75

Acres:

New land use/ date of change: Walgreen/2003

Value of land:

Vulnerabilities:

- Commercial area X
- Dense residential area
- Nearby public amenity
- Flood plain
- Distressed condition X
- Other

### Description of change:

A new Walgreens drugstore is expected to replace an old trailer park, recently cleared at the corner of U.S. 92 and Thonotosassa Road. Pinellas-based Aljinon Corp. has submitted plans to Plant City to use about half of the 4-acre parcel for the new drug store, with the remainder of the property, bordering Woodrow Wilson Road, remaining vacant for retail construction later

### Photo:

### Source:

“Walgreens Is Coming To Corner Near You”, *Tampa Tribune*, November 23, 2002



## **SNUG HARBOR MOBILE HOME PARK**

10200 Snug Harbor Lane  
St Petersburg, Pinellas County

### **Project Profile**

Mobile home spaces: 100 (est)

Acres: 38

New land use/ date of change: Multi family residential /2003

Value of land: \$1,700,000 (market)

Vulnerabilities:

- Commercial area X
- Dense residential area
- Nearby public amenity
- Flood plain X
- Distressed condition X
- Other

### **Description of change:**

In November 1998, owner of Snug Harbor Mobile Home Park in St. Petersburg sold her 38 acres for nearly \$1.3 million. Multi family housing is planned for the site.

**Photo:**

**Source:**

Pinellas County Commission minutes

**Appendix B: Photos of Case study parks**  
(from Pinellas property appraiser)



Former Lake Seminole



Holiday Campground



Pine Grove



Largo Village



Kapok



Keystone,



Rainbow Court, top  
Belleair Village, bottom





Shady Dell

## SKYLARK MOBILE HOME PARK

2526 State Road 580  
Clearwater, Pinellas County

### Project Profile

Mobile home spaces: 120

Acres:

New land use/ date of change: Commercial /2003

Value of land:

Vulnerabilities:

- Commercial area X
- Dense residential area
- Nearby public amenity
- Flood plain
- Distressed condition X
- Other

### Description of change:

In June 2003, the Pinellas County Commission voted to allow commercial development on the site of Skylark Mobile Home Park, which is currently cooperatively owned by the residents of the park.

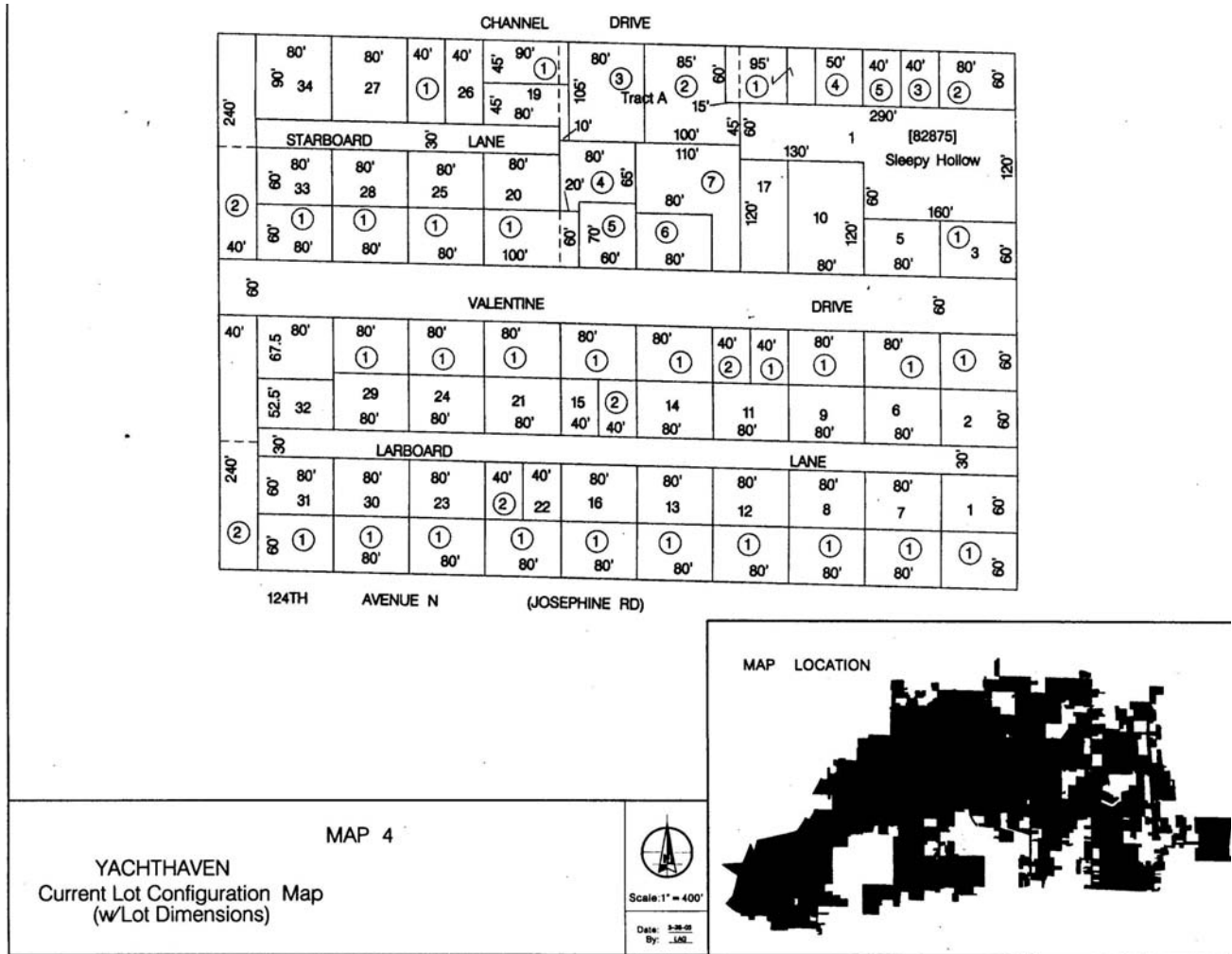
### Photo:

### Source:

Greene, Lisa, "Shopping club okay might set precedent", *St. Petersburg Times*, May 22, 2003.

Dailey, Lester, "Shopping Center approved for mobile home park site", *Citizen-Journal*, June 5-11, 2003

# APPENDIX C: YACHTHAVEN



Yachthaven, site plan  
 (from *Neighborhood Plan*)



Yachthaven, aerial photo  
(From Pinellas property appraisers web site)

## **APPENDIX D: SUNNNYDALE INTERVIEW SUMMARIES**

### **INTERVIEW #1**

**Huhn Marion R**

**5501 Pinewood Dr NE**

**Palm Bay, FI 32905**

**321 768 1102**

**1. Do you still live in a mobile home?**

No, I moved in with my son, who lives in an apartment.

**2. Was the relocation from Sunnydale Mobile Home Park a financial hardship for you?**

Yes it was, as I was not able to afford another mobile home. Anyways, here we have to buy the mobile home and the land as well.

I was helped financially by the mobile home park owner at Sunnydale.

**3. Was the relocation from Sunnydale Mobile Home Park an emotional hardship for you and your loved ones?**

No it was not.

**4. Are you better off now than you were before you moved?**

Yes.

## **INTERVIEW # 2**

**Horne D E**

**4851 W Gandy Blvd**

**Tampa, FI 33611**

**813 839 0482**

**1. Do you still live in a mobile home?**

Yes.

**2. Do you still own the mobile home?**

Yes, I own the mobile home but lease the land from the park owner.

**3. Was the relocation from Sunnydale Mobile Home Park a financial hardship for you?**

Yes it was to some extent. I didn't have a trouble with my job but just finding a mobile home and settling down again was a hardship.

**4. Was the relocation from Sunnydale Mobile Home Park an emotional hardship for you and your loved ones?**

Yes it was as I had to leave my mobile home. It was an old home and thus was difficult to move.

**5. Why did you move to another mobile home park?**

I choose to live in a mobile home park as I love to live there. I enjoy the close knit community feeling and the interaction among neighbors.

**6. Are you better off now than you were before you moved?**

I think so. I like the park that I live in now.

The park owner at Sunnydale owned other parks and wanted us to move there. But I choose otherwise, because if he can throw us out of one park he can do it in others.

**7. Do you know about your neighbors at Sunnydale?**

An elderly couple had moved in the adjacent lot a few months before the park was closed. They had to leave this home and buy another.

Another neighbor bought a mobile home and moved it from another lady who had moved to an apartment.

Most people had already moved before me and many had left their mobile homes behind.

### **INTERVIEW # 3**

**Correll R P**

**4011 S Manhattan Ave**

**Tampa, FL 33611**

**813 831 2155**

**1. Do you still live in a mobile home?**

No, I live in a senior retirement place named Presbyterian Homes of Florida Inc.

**2. Was the relocation from Sunnydale Mobile Home Park a financial hardship for you?**

Yes. I had a lot of investment in the home. Had to sell it for only \$2500-\$3000 to a lady who moved it. I bought another and remodeled it. But then had to leave that one as well due to a bad heart.

**3. Was the relocation from Sunnydale Mobile Home Park an emotional hardship for you and your loved ones?**

Yes it certainly was. The owner had told me that it was a permanent park but then he had us thrown out. I think he was very underhanded with the whole situation.

**4. Are you better off now than you were before you moved?**

Yes I am and have recovered completely financially and emotionally from the relocation. But it's a rental place and I don't own a home now.



**INTERVIEW # 4**

**Riddell M**

**3714 Winward Lakes Dr**

**Tampa, FL 33611**

**813 831 5125**

**1. Do you still live in a mobile home?**

Yes, I live in a mobile home park owned by the same owner as Sunnydale Mobile Home Park.

**2. Do you still own the mobile home?**

Yes.

**3. Was the relocation from Sunnydale Mobile Home Park a financial hardship for you?**

Yes, it certainly was, as I got only 1000 dollars for my previous mobile home.

**4. Was the relocation from Sunnydale Mobile Home Park an emotional hardship for you and your loved ones?**

Yes.

**5. Are you better off now than you were before you moved?**

Yes, I think so. I prefer to live in a Mobile Home Park because of the freedom it gives and community interaction. This one in particular is very good with a community space and a swimming pool around which we hold gatherings.

**INTERVIEW # 5**

**Howard Beech**

**4011 S Manhattan Ave**

**Tampa, Fl 33611**

**813 837 0629**

**1. Do you still live in a mobile home?**

No, I live in Presbyterian Homes of Florida Inc., a senior retirement place.

**2. Was the relocation from Sunnydale Mobile Home Park a financial hardship for you?**

Of course, I had lots of trouble relocating. Where I live now is also very expensive.

**3. Was the relocation from Sunnydale Mobile Home Park an emotional hardship for you and your loved ones?**

Refused to answer.

**4. Are you better off now than you were before you moved?**

Refused to answer.

**INTERVIEW # 6**

**Barbara Speck**

**4711 S Himes Ave**

**Tampa, FL 33611**

**813 832 4312**

**1. Do you still live in a mobile home?**

No. I live in a rental apartment complex. (Cameron Bay Shore Apartments)

**2. Was the relocation from Sunnydale Mobile Home Park a financial hardship for you?**

Yes it was. Had to face a lot of trouble.

**3. Was the relocation from Sunnydale Mobile Home Park an emotional hardship for you and your loved ones?**

Was reluctant to answer.

**4. Are you better off now than you were before you moved?**

Did not answer.

## **INTERVIEW # 7**

**Skalla June**

**10603 Walnut St NE**

**St. Petersburg, FL 33716**

**727 570 2277**

**1. Do you still live in a mobile home?**

Yes. The park that I live in now is owned by the same person as Sunnydale Mobile Home Park. (Gateway Mobile Home Park)

**2. Do you still own the mobile home?**

Yes I own the mobile home but rent the land.

**3. Was the relocation from Sunnydale Mobile Home Park a financial hardship for you?**

Yes it was, as I sold the mobile home there and had to buy another. Didn't get a good deal for my earlier home.

**4. Was the relocation from Sunnydale Mobile Home Park an emotional hardship for you and your loved ones?**

Yes, as I was pretty set there.

**5. Are you better off now than you were before you moved?**

Yes I have recovered now; I was looking for an elderly home but then found this park to be cheap. I also feel more secure in this park than in the earlier one. But if I have to move again I will not prefer a park.

**INTERVIEW # 8**

**De Marco Francis**

**10541 Poplar St NE**

**St. Petersburg, FL 33716**

**727 217 9885**

**1. Do you still live in a mobile home?**

Yes. (Gateway Mobile Home Park)

**2. Do you still own the mobile home?**

Yes I own the home but rent the land.

**3. Was the relocation from Sunnydale Mobile Home Park a financial hardship for you?**

Yes, I had owned the home there and also had a sale sign on it just before the owner decide to close the park. Due to this I was not able to find a buyer and hence had to leave it to the park owner. He did not give me any money for it.

**4. Was the relocation from Sunnydale Mobile Home Park an emotional hardship for you and your loved ones?**

Yes. (He was not at all happy at the owner and had many bad memories which made him burst in a fit of anger.)

**5. Are you better off now than you were before you moved?**

I think I am much better off here as the neighbors are quite and I like the neighborhood. But I would have preferred to live in an apartment but was forced to live in a park due to my low income.

**INTERVIEW # 9**

**Lennox B**

**7001 Interbay Blvd**

**Tamap, FL 33616**

**813 837 2049**

**1. Do you still live in a mobile home?**

Yes. (Holiday Mobile Home Park)

**2. Do you still own the mobile home?**

Yes. I traded the earlier one which was single wide and 30 yrs old to buy a new double wide. I needed a bigger home as my niece was going to move in with me.

**3. Was the relocation from Sunnydale Mobile Home Park a financial hardship for you?**

Yes it was. The earlier home had been paid off and now I had to pay for this one. I could have bought a piece of land for my mobile home instead.

**4. Was the relocation from Sunnydale Mobile Home Park an emotional hardship for you and your loved ones?**

Yes, my husband had died there and I didn't want to leave the place.

**5. Are you better off now than you were before you moved?**

I don't think so. Also I would rather buy a house than live in a mobile home but I didn't qualify for it.

**INTERVIEW # 10**

**Morain Charles  
4802 W Fair Oaks Ave  
Tampa, FL 33611  
813 831 8561**

**1. Do you still live in a mobile home?**

No. I live in a rental apartment.

**2. Was the relocation from Sunnydale Mobile Home Park a financial hardship for you?**

Yes. I had about \$20,000 to \$25,000 invested in my mobile home. Had to sell it for only \$3000 to another trailer park owned by the same man.

**3. Was the relocation from Sunnydale Mobile Home Park an emotional hardship for you and your loved ones?**

Yes. I sold my home in Missouri to live in a mobile home park as I love it. But then had to move again and lost money as well.

**4. Are you better off now than you were before you moved?**

I am not sure. The relocation also caused me a lot of health problems as I suffered from a stroke.

**INTERVIEW # 11**

**Boulanger M  
9152 Berkshire Lane  
Tampa, FL 33635  
813 249 7873**

**1. Do you still live in a mobile home?**

Yes.

**2. Do you still own the mobile home?**

Yes.

**3. Was the relocation from Sunnydale Mobile Home Park a financial hardship for you?**

That has happened a long time ago. I don't want to answer.

**4. Was the relocation from Sunnydale Mobile Home Park an emotional hardship for you and your loved ones?**

**5. Are you better off now than you were before you moved?**



**INTERVIEW # 12**

**Ashe J K  
214 Como St  
Tampa, FL 33606  
813 254 3216**

**1. Do you still live in a mobile home?**

yes

**2. Do you still own the mobile home?**

**3. Was the relocation from Sunnydale Mobile Home Park a financial hardship for you?**

**4. Was the relocation from Sunnydale Mobile Home Park an emotional hardship for you and your loved ones?**

**6. Are you better off now than you were before you moved?**

**INTERVIEW # 13**

**Gilreath Walter  
230 Danube Ave  
Tampa, FL 33606  
813 254 3961**

- 1. Do you still live in a mobile home?yes**
- 2. Do you still own the mobile home?yes**
- 3. Was the relocation from Sunnydale Mobile Home Park a financial hardship for you?n/a**
- 4. Was the relocation from Sunnydale Mobile Home Park an emotional hardship for you and your loved ones?n/a**
- 5. Are you better off now than you were before you moved?**

## **APPENDIX E: LETTER to USF TEAM**

April 4, 2003

**FLORIDA MOBILE HOME RELOCATION CORPORATION  
PO BOX 14125  
TALLAHASSEE, FL 32317-4125  
Telephone: 1-888-862-7010; Telefacsimile: 1-850-385-4422**

Ms. Swapnali Salunkhe  
4119 Quixote Road, Apt. 7  
Tampa, FL 33613

Dear Ms. Salunkhe:

Thank you for your interest in the Florida Mobile Home Relocation Corporation (FMHRC). I hope the following information will be useful to you.

The FMHRC was created in July 1, 2001 when the Florida Legislature enacted the Florida Mobile Home Relocation Act. Generally, the enactment of the Relocation Act provided for two major changes for mobile home owners who live in mobile home parks regulated by Chapter 723, Florida Statutes (FS), the Florida Mobile Home Act, when they are evicted for change in land use: (1) Mobile home owners who are evicted for change in land use were given 6-months rather than 1 year's written notice prior to eviction for change in land use; and (2) Mobile home owners evicted for change in land use were afforded compensation for abandonment of singlewide and greater sectioned mobile homes, and for assistance in relocating their mobile homes, respectively; through sections 723.0612(7) and 723.06116, FS

Compensation for mobile home owners who abandon their mobile homes is: \$1,250.00 per singlewide mobile home; and \$2,500.00 per doublewide or greater sectioned mobile homes. This compensation is provided to mobile home owners who duly endorse their clear-or lien-free-titles to their park owners, and who submit a complete application to the FMHRC upon vote of the FMHRC Board. The Board requires the following requirements to be met prior to providing abandonment compensation: (1) The mobile home owner must submit a completed application for abandonment compensation form; (2) This form has to be accompanied by a written notice of eviction for change in land use to the mobile home owner, and this notice has to be dated after the effective date of the Relocation Act, or subsequent to July 1, 2001; (3) The mobile home owner must provide a copy of an original certificate of mobile home title in the applicant(s)' name(s), duly endorsed to the park owner.

Although not stated in the statutes or rules, the Board has determined that due endorsement means that the mobile home owner(s) name(s) shall appear on the title line stating seller, and that the mobile home park/park owner name shall appear on the title line stating purchaser. This means the Board denies applications in which the mobile home owner and/or park owner sign the title in

Ms. Salunkhe  
April 4, 2003  
Page 2 of 3

any other place.

Additionally, if the Board learns that the mobile home owner is involved- or may be involved- in litigation with the park owner, the Board has voted to deny such applications, pending a written release from the mobile home owner that the mobile home owner will not -or has not- received compensation from the park owner for abandonment or relocation.

Regarding applications for relocation assistance, the mobile home owner must submit a mobile home owner application for assistance with relocation. The mobile home must also provide a copy of a written notice of eviction for change in land use dated after July 1, 2001, an itemized contract for relocating the mobile home with a Florida licensed mobile home installer, and a copy of the original certificate of title to the mobile home. (In this case not endorsed to the park owner.)

In all cases-both those applications for abandonment compensation and relocation assistance- the Board has stated that the name or names on the applications shall match the name or names on the eviction notice, name or names on the title, and -in the case of relocation assistance- the name or names on the installer contract. It should also be noted that only titles designating body type as "HS" are mobile homes, according to the Department of Highway Safety and Motor Vehicles, and as such, any other body type designations, which we have seen as "MH" or "TV" are denied.

Ultimately the Board, pursuant to section 723.06116, FS, may award up to \$5,000.00 contractor voucher assistance for the relocation of singlewide mobile homes, and up to \$10,000.00 contractor voucher assistance for relocation of doublewide or greater sectioned mobile homes. To evidence doublewide or greater sectioned status, the mobile home owner is required to produce copies of original certificates of title, indicating such-which means in plain terms, that a doublewide shall have two certificates of title; a triple wide shall have 3 certificates of title, etc. I have not seen an application for a greater sectioned mobile home than a doublewide. As with applications for abandonment assistance, the Board has determined that mobile home owners who are or who may be involved in litigation with the park owner, provide a release that they have not- nor will they be compensated by the park owner for relocation, although at this time this is not provided for in the statutes.

The Board has determined concerning relocation contracts that the relocation of existing structures attached to the mobile home as well as the mobile home itself, and connection to basic water, sewer, and utilities may be paid for-although the Board has denied new electric poles. The Board has determined that concrete work, necessary moving permits, state decals, and new work required to bring the mobile home up to state code will not be covered. This typically means the Board will not pay for the permits required to move the home on the highway as required by the Department of Transportation, nor will the Board approve steps for the home, or permits for inspection.

Ms. Salunkhe  
April 4, 2003  
Page 3 of 3

That said, prior to the enactment of the Florida Mobile Home Relocation Act mobile home owners who were evicted due to change in land use were not statutorily afforded compensation for abandonment or relocation. For additional information on this issue you may wish to contact Ms. Betty Allen of the Department of Business and Professional Regulation (DBPR) at 1-850-4881122.

Regarding park owner payment to the FMHRC for mobile home owners the FMHRC Board determines are entitled to compensation- as per sections 723.0612(7) and 723.06116, FS, or for abandonment compensation or relocation assistance- the park is required to pay \$1,250.00 for singlewide abandonment and \$2,500.00 for doublewide or greater sectioned abandonment; and the park owner is required to pay \$2,000.00 for singlewide relocation compensation, and \$2,500.00 per doublewide or greater sectioned relocation. It should be noted that park owner payment for abandonment is the exact amount awarded by the Board, while park owner payment for relocation assistance is disparate in that the park owner pays \$2,000.00 per singlewide relocation while the Board may award up to \$5,000.00 contractor voucher assistance; and the park owner pays \$2,500.00 for doublewide or greater sectioned relocation assistance, while the Board may award up to \$10,000.00 for doublewide or greater sectioned contractor voucher assistance. All park owner payments are made to the FMHRC.

Regarding mobile home owners who have been compensated by the FMHRC, I have listed them on an attached spreadsheet as follows: By date of Board meeting, name of mobile home owners, park name, and amount of compensation approved. The DBPR can provide you specific information on these parks.

I hope this information is useful to you, and thank you again for your inquiry. Do not hesitate to contact me directly if you have any questions or concerns at 1-850-294-1055.

I remain respectfully at your service.

Sincerely  
FL RIDA MOBILE HOME RELOCATION CORPORATION

Elizabeth Wilson  
Executive Director

Enclosure

## **APPENDIX F: Affordable Residential Communities**

## 1.2 REQUIREMENTS FOR THE INSTALLATION OF MANUFACTURED/MOBILE HOMES IN FLORIDA

### Background

The Hurricane Loss Reduction for Housing in Florida, 2002-2003, Final Report noted two perceived problem areas with respect to the siting of manufactured/mobile homes in Florida and recommended these areas for additional study:

“There is duplication and/or contradiction of information in zoning codes and building codes regarding mobile homes. The resulting lack of clarity (as to which code addresses important health safety and welfare issues) causes accountability problems.

“Information gaps, such as inaccessible information regarding codes, inhibit oversight of mobile home installation and maintenance by renters, owners, and building officials.”<sup>1</sup>

As a result of the recommendation, the IHRC Team involving a study group from the Department of Construction Management at Florida International University undertook an analysis and evaluation of the current state of the information available and the enforcement of the site installation requirements for manufactured/mobile housing within the State. In the work that was performed, site installation requirements were considered to include zoning laws and regulations, requirements of the Florida Building Code, and installation requirements promulgated by the State and Federal Government.

The initial effort of the group centered around an examination of two facets of the perceived problems: (1) the role of the State and local government in site requirements for manufactured/mobile housing and (2) the requirements of various building or zoning codes for the installation of the structures. The study effort considered the audience for which certain information is intended, i.e., homeowners, installers, and individuals in the regulatory process. Ancillary to the initial part of the work was to identify regions or locations with high concentration of mobile homes in order to look at those geographic areas more closely.

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<sup>1</sup> “Hurricane Loss Reduction For Housing In Florida: Final Report.” Volume 2, pg 3

## **Location of manufactured/mobile homes throughout Florida**

Within the State, manufactured/mobile homes can be treated as a motor vehicle, subject to annual licensing fees, or as real property subject to local real estate taxes, but not an annual licensing fee. A manufactured house located on property owned by the same individual as owns the home, and permanently fixed on the property [i.e. attached to a permanent foundation], is considered to be real property and subject to normal real estate taxes. In these instances, the Department of Motor Vehicles (DMV) will issue a manufactured/mobile home tag only at the initial purchase of the home. Once situated on and attached to the real estate, the manufactured/mobile home tag is no longer required. However, if the manufactured house is only tied down on the property it is still considered a mobile home as defined by DMV. On the other hand, manufactured housing located on rented real estate (such as in a mobile home park) or which is not permanently attached to real property owned by the home's owner, is considered a vehicle and subject to annual registration and licensing.

Consequently, one can determine the location and density of manufactured/mobile homes in Florida by reviewing the DMV statistics for the annual tags and county property rolls for those considered as real property. Data from the Florida Statistical Abstract 2002 (FSA 2002) show that 93.5% of the manufactured houses licensed during the 2000-2001 fiscal year were installed in mobile home parks and registered as mobile homes, while 6.5% of the units were actually transferred to the real property rolls after installation.

As might be expected, there was a wide variation between counties. In more rural areas, such as Levy County, the number placed on permanent sites and considered as real property exceeded the number licensed as vehicles (1,125 as real property, 1,092 as vehicles). At the other extreme, the number of units on rental property in Miami-Dade County far exceeded those transferred to the real property rolls. Table 1 provides a summary of the 2000-2001 data for the 10 counties with the largest number of mobile home tags for the period. The study group used this ranking in determining the geographical areas to be examined. Together, the 10 counties accounted for 55% of all of the mobile home tags installed in mobile home parks issued by the DMV during the period. Please see Table 1 (next page)



**Table 1**  
Manufactured/Mobile Home Tags Issued (2000-2001)

County	Mobile Home Tags for Units on Rental Property (Mobile Home Parks)	Mobile Home Tags to Units Transferred to Real Property Tax Rolls
Polk	46,834	2,030
Pinellas	46,161	969
Hillsborough	35,679	1,379
Lee	30,496	739
Volusia	26,371	434
Manatee	23,352	1,507
Pasco	20,844	1,782
Lake	18,122	966
Broward	16,906	297
Sarasota	16,035	565

### Federal & State Requirements

The structural requirements for the construction of manufactured/mobile homes are promulgated by the Federal government. The U.S. Housing and Community Development Act of 1974 provides that preemptive national standards for the design and construction of manufactured homes shall be developed and administered by the U.S. Department of Housing and Urban Development (HUD). The Department is responsible for the administration of the Federal Manufactured Housing Program and has, since 1976, set forth regulations and requirements for the design and construction of manufactured/mobile housing. HUD has entered into contracts with 37 states that have established State Administrative Agencies (SSAs) which enforce the standards in those states. Other states have opted to allow HUD to hire private firms for the inspection and enforcement function.<sup>2</sup> Florida is one of the states that carries out the federally mandated inspections for manufactured/mobile homes constructed within the

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<sup>2</sup> The legal authority is the National Manufacture Housing Construction and Safety Standards Act of 1974, 42 USC 5401 et seq. The federal program is implemented through 24 CFR 3280, the standards for design and construction, and 24 CFR 3282, which sets up the enforcement of the standards.

State. The program falls under the jurisdiction of the Department of Highway Safety and Motor Vehicles (DHSMV).<sup>3</sup>

The federal program enforced through DHSMV includes details of construction, wind load requirements (as of 1994), requirements for structural integrity, minimum sizes of members, and other requirements, such as smoke alarms. However, it currently excludes the detailed requirements for structural integrity in the actual set-up and installation of the manufactured/mobile housing. The Manufactured Housing Improvement Act of 2000 required the Secretary of HUD to establish a Consensus Committee for Manufactured Housing (CCMH). This is an advisory body consisting of 21 members representing producers, users, public officials, and general interest participants. They are charged with, inter alia, developing proposed model installation standards for the industry. However, no report has been issued at the present time.

The State of Florida SSA has adopted rules and regulations covering this extremely important topic. Chapter 15C-1 of the Rules of the DHSMV, available on line or from the Department, are the installation standards for manufactured/mobile homes.<sup>4</sup> The rules specifically state that the “set-up of new or used manufactured homes ... shall be in compliance with the manufacturer’s installation instructions unless otherwise specified in this rule.”<sup>5</sup> The remainder of this particular section of the rules describes technical details of installation, sensible to contractors and other individuals who are normally engaged in construction and in the regulatory inspection process. The State has also published a catalog of products, such as earth anchors, shims, and bolts, which have been approved for use (in Florida) when installing a manufacture/mobile home, and which is obtainable on line.<sup>6</sup>

The IHRC Team did not do an engineering analysis of the material covered by the rules and regulations as that was beyond the scope of the study. However, the team determined that the details contained in the rules are of relatively limited use to the average purchaser or renter of a manufactured/mobile home. Succinctly, the material is

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<sup>3</sup> It should be noted that not all manufactured/mobile housing is covered by federal law or regulation. Units built within a state and not for sale or transport out of the state need not comply. However, only those units constructed in conformance with HUD standards are eligible for loans which, either in part or wholly, utilize federal funds.

<sup>4</sup> <http://casey.hsmv.state.fl.us/Intranet/dmv/forms/BHMRV/15c1final.pdf> or [15c2final.pdf](http://casey.hsmv.state.fl.us/Intranet/dmv/forms/BHMRV/15c2final.pdf)

<sup>5</sup> Rules of Department of Highway Safety and Motor Vehicles Division of Motor Vehicles Chapter 15C-1, Section 15C-1.0102.

<sup>6</sup> <http://casey.hsmv.state.fl.us/Intranet/dmv/Forms/BMHRV/ANCHLIST.pdf>

beyond the depth of knowledge required or desired of the average individual with respect to the purchase and installation of manufactured/mobile housing. In this respect, the study group concluded that buyers of mobile homes are no different than buyers of site built residences. The architects, engineers, contractors, builders, and inspectors understand the details of the plans, while the average purchaser of a home does not have and, arguably, may not need such an understanding.

The State has also established qualifications for manufactured/mobile home installers.<sup>7</sup> Essentially, no person, regardless of other licenses held (such as general contractor, etc.) “ ... may perform manufactured/mobile home installation unless licensed by the department ...” Licensure requirements include, amongst other things, specific training, insurance, and bonding. A licensed installer is expected to perform all of the work necessary to set up and connect the manufactured/mobile home to all services other than to the main electrical supply in order to make the structure habitable. As with most other licenses of this type, direct employees working under the license holder are not required to be licensed.

The State allows dealers and manufacturers of mobile homes to perform the installation as long as one of their employees has attended the required training and that they provide the certificate of training to the Department. As with the individual licensee, other employees working under the direct supervision of the certificate-holder need not be licensed.

In order to determine if there was any lack of understanding or lack of enforcement as to the regulations affecting the installation of manufactured/mobile homes, the IHRC team interviewed sales personnel in Polk, Pinellas, Hillsborough, and Broward Counties. The interviews were brief, conducted by telephone, and were generally limited to the following questions:

- a. If I purchase a manufactured home, am I required to have it installed by the dealer?
- b. If not by the dealer, can I find my own installer?
- c. Is there a license required to install a manufactured home?
- d. Can a general contractor install a manufactured home without getting a separate license?

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<sup>7</sup> of Highway Safety and Motor Vehicles Division of Motor Vehicles Chapter 15C-2, Section 15C-2.0073

Twenty-seven such interviews were conducted. Table 2 presents a summary of the findings.

**Table 2**  
Interviews with Sales Personnel

Question	<b>No. of Responses</b>	
	Yes	No
<b>a.</b>	13	14
<b>b.</b>	15	12
<b>c.</b>	27	0
<b>d.</b>	0	27

From these responses to our limited survey it was apparent that in mobile home communities/parks, dealers both sell and install mobile homes. Consequently, the use of a private installer is not encouraged, but for installations in private lots the buyer could opt for his own licensed installer. However the responses to questions a) and b) appear to indicate misleading information was given, whether intentionally or not is another matter. For question a) 48.2% of the responders basically said a buyer is required to have the mobile home installed by the dealer. This is not the case. With respect to question b) a total of 44.4% responder said that the buyer cannot get his or her own installer, the implication being that installation must be done by the dealer. It was also found that none of the individuals interviewed were unaware of the fact that the State had established requirements for the installation of manufactured/mobile homes. Similarly, none were unaware of the fact that a special license was required. Consequently, the team concludes that the installation requirements are understood by those in a position to provide the information to the prospective buyer and to whom the buyer would look for the information. The team did not find any ambiguity or contradictions in the rules which would lead to confusion as to the individuals or firms that are licensed to install manufactured/mobile housing. Although it is obvious that misleading, or at the very least inaccurate, information was delivered to prospective buyers regarding a requirement to have the dealer install the mobile home.

### State and Local Requirements

State and local jurisdictions have separate but joint requirements in the on-site installation of manufactured/mobile housing. Under State law, the enforcement of minimum standards for the construction of buildings, is governed by the Florida Building Code. Enforcement is the responsibility of the local jurisdiction while the standards are

established by the State. However, in the case of manufactured housing all construction [manufacturing] standards have been pre-empted by federal statute.

The Florida Building Code was adopted in by act of the legislature in 2001 and has replaced all other codes utilized within the State except for the Epcot Code, which pertains only to the special taxing district that contains Disney World. Despite the fact that there are manufactured/mobile homes located within that confine, they represent a small number as compared to the rest of the state and the requirements of Epcot will not be discussed in this report.

The team examined the various codes previously utilized in Florida and elsewhere to determine the effect, if any, on the installation of manufactured/mobile housing, and utilized the information gained to prepare Table 3. (see next page)

**Table 3**  
Requirement of Various Building Codes  
Concerning the Installation of Manufactured/Mobile Homes

Code Requirement	Florida Building Code 2001	Standard Building Code 1999	Standard Building Code 1997	Standard Building Code 1991	Standard Building Code 1988	Standard Building Code 1985	Uniform Building Code 1990	BOCA Building Code 1991	HUD Title 24	South Florida Building Code
Required Piers and Anchorage	N	Y	Y	Y	Y	Y	N	N	N	N
Tie downs – Min Number	N	Y	Y	Y	Y	Y	N	N	N	N
Tie downs spacing	N	Y	Y	Y	Y	Y	N	N	N	N
Alternative Systems	N	Y	Y	Y	Y	Y	N	N	N	N
Testing Anchors	N	Y	N	N	N	N	N	N	N	N
Anchor Certification	N	Y	Y	Y	Y	Y	N	N	N	N
Anchorage and Spacing	N	N	N	N	N		N	Y	N	N
General Anchorage Requirements	N	N	N	N	N	N	N	N	Y	N

Despite the fact that approximately one third of all new housing in Florida is manufactured housing, the table shows that the new Florida Building Code is essentially silent with respect requirements for their on site installation.

Although the Florida Building Code does not contain information on securing the manufactured/mobile home to the site, a mobile home is a structure and on site installation cannot take place without a building permit issued by the local jurisdiction. However, the structural, mechanical, and electrical review and inspection services performed by the jurisdiction are vastly different than that done for a site built residence.

The jurisdiction has no review or inspection authority over the structural details or electrical and mechanical subsystems. The provisions of the Florida Building Code, with respect to these and other details found in most structures, are preempted by Federal law and regulation. (It should be noted that any structural, mechanical, or electrical modifications to the original unit, including exterior items such as porches and screened enclosures, will be subject to local approval and inspection if they exceed the dollar value or other limitations of the Florida Building Code.)

Enforcement of zoning laws and regulations normally comes under a separate agency for most jurisdictions, and not the building department. In the permitting procedure, approval by the zoning agency is a prerequisite step in obtaining the building permit and one will not be issued unless the selected site meets the land use or zoning requirements for the jurisdiction. There is no difference in this aspect of obtaining a permit for the set-up of a manufactured/mobile home and the permitting of a site built home. Zoning ordinances specify the types of structures (commercial, residential, etc.) that may be built on the land, the setback requirements, the occupancy allowed etc.

Some jurisdictions in the State, such as Broward County, do not allow mobile homes except in restricted areas, such as mobile home parks. In such cases the regulations or ordinances specify density, proximity restrictions, and occupancy limitations that are applicable only to these parks. Others, such as Hillsborough County, allow manufactured/mobile homes not only in restricted areas such as mobile home parks, but also in residential neighborhoods and/or on most land zoned for agricultural purposes.

The team prepared a survey to determine, among other things, if there was any confusion or misunderstanding on the part of local building departments with respect to their function or role in issuing building permits for the installation of, or modifications to, manufactured/mobile housing. The survey was furnished to members of the Building Officials Association of Florida, and, in selected cases, followed up with telephone interviews. A total of thirty-eight responses were received. None of the individuals responding indicated any confusion as to the role of their agency in the site installation or remodeling of a manufacture/mobile home. Similarly, each was aware of the zoning laws in their jurisdiction that govern where manufactured/mobile homes are allowed. Although not a survey question, all of those interviewed individually by telephone were aware of the State's licensure requirement for installers.

As a result of the interviews and survey responses, the team concluded that there was no indication that building or zoning departments throughout the State were unaware of

the requirements for issuing permits, proper zoning, and licensure requirements for the site installation, maintenance, or repair of manufactured/mobile homes. Similarly, the group did not find that there was inconsistency or contradictory material that would lead to confusion as to the appropriate steps to be followed by the building departments in permitting the set up, maintenance, or repair of a manufactured/mobile home.

### Sellers' Responsibility

The data displayed in Table 2 indicated no confusion or lack of awareness of the requirements for the installation of manufactured/mobile homes on the part of dealers. It does not, however, address the question of the knowledge of appropriate land use and zoning. Land use and zoning requirements vary in every jurisdiction and cannot be adequately addressed without knowledge of the specific property in question. In this respect, the requirements for manufactured/mobile housing does not vary from that for site built residences except in the time line involved. The prospective purchaser of a site built home, planned, under construction or existing, may not be aware of the fact, but a permit to build would not have been issued if the land use was not appropriate. Mobile home dealers for a particular manufactured housing community do not necessarily have to be well informed on land use and zoning matters as long as the unit is to remain within the community. Dealers or sellers of units that may be transported and erected elsewhere cannot be expected to know the land use and zoning requirements for all possible jurisdictions. It can be argued that they have no responsibility to ensure that the intended site is acceptable. However, since one does not observe a large number of manufactured/mobile units parked in vacant lots or stranded in highway rest areas, the pertinent information must have found its way to the consumer before the purchase was made.

As a result of interviews and discussions, the team is of the opinion that the seller of manufactured/mobile housing units is under no obligation to question the prospective purchaser's knowledge of specific land use and zoning, particularly if the unit is to be transported to another jurisdiction. Simply, it is not the duty of the seller to enforce state or local laws and regulations. However, the team did consider that providing generic information of use to the prospective purchaser would be appropriate and a sound business practice.



## Buyer Responsibility

A retail clothing chain uses the motto, “ An informed consumer is our best customer.” It is as appropriate for the prospective purchaser or renter of manufactured/mobile housing as it is for sweaters. As previously stated, in this respect there is no essential difference between the prospective purchaser or renter of a manufactured/mobile unit and the prospective purchaser or renter of a site built residence.

The report has documented the team’s assessment that in general there is no lack of information and no ambiguity in the laws and regulations which would preclude prospective mobile home buyers from knowing the requirements for land use and zoning, installation, or maintenance of the units. Although the IHRC Team also found some dealers provided inaccurate or misleading information to prospective buyers regarding who is required to install the unit. The question remains however as to the responsibility of the consumer in ferreting out the information. One would like to be able to assume that the individual would be well prepared and aware of the laws, rules, and regulations affecting their purchase or lease agreement. However, just because information is available does not mean that it is located. Additionally, when found, it may not be in a format that is easily understood. It is intuitively appealing and absolutely true to state that the prospective owner or renter has the duty to be informed of the requirements for permitting, land use, zoning, installation, and repair of manufactured/mobile housing. Still, the fact remains that many will not be aware of the necessity of the availability of the information and how to access it.

## Consumer Awareness.

A significant portion the study effort was devoted to determining the information that is available to the purchasers of manufacture/mobile homes. In addition to the interviews and surveys mentioned previously, members of the team explored the websites of State and local agencies, the Florida Statutes, and the Florida Building Code. The amount of material that is available to the consumer, without charge other than for paper and printer ink, is extensive and voluminous. The question seems not to be availability, but dissemination.

Architects, engineers, contractors, and developers are generally aware of zoning and permitting issues. No developer would purchase land and go through the design and sales effort without first being aware of the zoning regulations for that land. Similarly, a contractor would not expect a building permit to be issued for a residential structure without first determining the zoning laws and regulations allowed a residence in that

location. Individuals purchasing homes in developing markets can, but unfortunately do not always do so, determine the zoning of the vacant lots in their neighborhood. They may check the availability of schools, proximity of parks, sewerage instead of septic tanks, and the amount of traffic that they may expect due to the presence of a church or other institution in their neighborhood. However they express surprise and concern when the sign goes up two blocks away announcing the construction of a fast food/convenience store. Despite the fact that a particular piece of real estate has been zoned as commercial for many years, and despite the fact that the information on the land use and zoning has been readily available, for the asking, no one had asked.

The study team considers that a similar phenomenon exists with prospective owners of manufactured/mobile homes. Information is available but they are unaware that they need it. For those individuals who are accustomed to searching for information, either on-line or at an agency office, information concerning land use, zoning and the installation of manufactured/mobile homes is abundant and readily available. For individuals less likely to know the places to look, the information may be essentially unobtainable.

Consequently, the team developed a public information package that could be made available to consumers. The information is contained on either a single sheet of paper or in pamphlet/brochure format and is intended for distribution through manufactured/mobile home dealers or building departments. It covers the basics information for installing a manufactured/mobile home from the point of view of an individual that does not need to know the specific details of anchorages and tie downs. The document also provides other useful information, such as the basics of the lien law, and where to call or go when the prospective buyer has additional questions. The team proposes to provide 1500 copies, in pamphlet form, to manufactured/mobile home dealers in Polk County on a trial basis.

**Appendix A: Public Information Document**

## Volume 2 Chapter 2



### Development of a Replacement Program for Existing Older Mobile Homes

#### Scope of Work:

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:

- (e) Funding alternatives for a proposed older mobile home replacement program could be funded;
- (f) Resolution of critically complex social issues that have been identified through research during 2001-2002, and
- (g) How would potential stakeholders in an eventual older mobile home replacement program react or contribute to the same.
- (h) 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.

**Research Titles and Players:**

**2.1 Pilot Study of a Mobile Home Replacement Program in Florida**

Hemispheric Center for Environmental Technology, Florida International University

Alfredo Ravinet

Edgar Polo

Krishnan S. Raghavan

**2.2 Florida Mobile Home Replacement Program**

Department of Sociology, University of North Texas

Nichole Dash

## **2.1 PILOT STUDY OF A MOBILE HOME REPLACEMENT PROGRAMS IN FLORIDA**

### **EXECUTIVE SUMMARY**

Since the devastation caused by Hurricane Andrew in 1992, authorities in Florida have undertaken to improve the performance of all structures that do not perform well in severe storms. Mobile homes are one category of structures that do not perform well in severe storms. They have weak structural frames incapable of resisting such fury. This problem is pronounced in mobile homes built before the introduction of new HUD in 1994 that included structural design criteria for wind loads based on ASCE minimum standards. The problem is even worse for mobile homes manufactured prior to the introduction in 1976 of HUD national standards for manufactured housing construction.. It is estimated that nearly 85.5% of the mobile homes in Florida were built before 1994. Florida has an urgent need to address the hazards to its citizens that stem from this large and aging mobile home stock.

As a continuation of the research into the feasibility of a statewide mobile home recycling program proposed in the report of last fiscal year—whose goal was to cycle older-generation mobile homes out of the housing stock to replace them with newer and safer units built to the more stringent standards of 1994, this project involved the demolition of five pre-1976 mobile homes to examine the materials that constitute them and to calculate an estimated cost from the permitting stage through demolition to final waste disposal. One key objective of this applied research was to compare the results with the theoretical work conducted by the IHRC Team during the 2001-2002 research period; in other words to compare the theory with the practice.

Demolition contractors, transportation companies, recycling facilities, and waste disposal sites are widespread in Florida. These facilities are capable of handling the demolition service, salvaging, and waste disposal needs of the proposed program.

An average deconstruction cost is estimated at \$3,560 per mobile home section, including transportation, off-site demolition, and waste disposal. The 21% recyclable weight of a mobile home can generate approximately \$528 in revenue from the sale of salvaged material, which includes mainly aluminum, copper, and steel frames and axels. However, as a common practice, this revenue is an additional gain to the demolition contractor, not a deduction from the contracted price. Asbestos inspection, which costs approximately \$362 per unit, will be required for older mobile homes.

Additional costs of \$2,000 to \$3,000 per unit for abatement are expected if asbestos is found.

The total cost of the statewide recycling program is estimated to be \$1.7 billion for the removal of all pre-1976 mobile homes. An additional \$1.83 billion would be required to remove all mobile homes built before 1994, assuming the following:

1. All pre-1976 mobile homes will be inspected for asbestos prior to demolition, and 60% of those mobile homes will require asbestos abatement.
2. Mobile homes built between 1976 and 1994 will be exempted from asbestos inspections.
3. All of the mobile homes will be transported to off-site demolition facilities.

It is concluded that the proposed recycling program is a viable yet costly alternative for hurricane loss mitigation.

## 1.0 INTRODUCTION

### **1.1 Background**

Major hurricanes are always dangerous and sometimes fatal to the communities affected. Storm developments in the Atlantic and the Gulf of Mexico expose Florida to tremendous risks in the event of a major hurricane. In addition to its unique location, Florida also has a large stock of mobile homes—the housing most vulnerable to hurricane damage—with approximately 10% of all mobile homes in the nation. The Florida Department of Motor Vehicles (DMV), which registers mobile home titles, has recorded approximately 1.14 million mobile home units in Florida. It is estimated that over 338,000 of those units were built before 1976 and more than 648,000 between mid-1976 and mid-1994. Combined, this sector accounts for 12.8% of the total housing stock and 85.5% of the total mobile home units. The years 1976 and 1994 are significant because, prior to 1976, there was no uniform standard for the construction of mobile homes. The U.S. Department of Housing and Urban Development (HUD) promulgated its first federal Manufactured Home Construction and Safety Standards (commonly known as the HUD Code) on June 15, 1976. A set of more stringent standards went into effect in 1994. The 1994 HUD specifications, which are still being used today, specify design regulations for wind speeds in excess of 110 miles per hour.

The tremendous damage, huge casualties, and costs to the state that can arise in the unfortunate event of a severe storm have been the subject of much research and suggested policy that aims to explore effective loss-reduction measures. As part of these efforts, the International Hurricane Research Center (IHRC) embarked on a project to investigate the feasibility of a mobile home recycling program in Florida. This program proposed to demolish and salvage useful material from the older mobile homes and replace them with alternative housing that can sustain stronger storms. Removing the most vulnerable housing units from the state housing population could potentially reduce the loss when the next major hurricane strikes Florida. As a result, IHRC undertook the first phase of the project, in collaboration with the Hemispheric Center for Environmental Technology (HCET) at Florida International University (FIU), to study the requirements, conditions, and provisions that must be considered in developing and implementing a program of such scope and magnitude. HCET evaluated the critical participants (e.g., demolition contractors, mobile home owners, etc.), activities, and procedures involved in such a recycling program and explored the permitting and environmental compliance issues. HCET incorporated these technical details in last year's final report to the IHRC.



The second phase of the project involved investigating the feasibility of the program by carrying out actual demolition of mobile home units at the test facility at HCET. This report describes all activities pertaining to the demolition of five mobile home units carried out at HCET's test facility and compares the findings to the issues and assumptions made in the first phase of study.

### **1.2 Objectives**

The objective of this study was to collect cost data in a pilot mobile home replacement study by demolishing five mobile home units and to verify the assumptions and conclusions made in the first phase of the project. The scope of this project focused on the following:

- Total cost analysis for the pilot mobile home replacement program (including transportation, demolition, recycling, and waste disposal costs)
- Segregation of the components of each demolished mobile home into various material categories to be weighed and documented
- Recycling, salvaging, burning, or disposing of the components in a landfill, depending on the type of material
- Total projected cost of a mobile home recycling program in Florida
- Comparison of findings with those in the first phase of the report

## 2.0 PRELIMINARY APPROACH

This section focuses on the initial and preliminary approach used to compile information about the mobile home units and various contractors for the testing.

### **2.1 Survey Results**

This phase began with the survey of mobile home demolition contractors. Initially, it was planned to obtain three mobile home units from the southeastern region of Florida (see Figure 1, region 7) and two mobile home units from the west-central region (see Figure 1, region 4). The first three homes were obtained from two mobile home parks in Broward County, in southeastern Florida. All three units were built in the 1970s (see Figure 4). After surveying many contractors, HCET contacted more than 10 contractors located in three counties in the west-central region of Florida: Hillsborough, Polk, and Pinellas counties. Among those, HCET was unable to find a contractor willing to work on the project.

There were two main reasons for the reluctance of contractors to participate. First, the study required contractors to provide a copy of applicable permits, receipts from landfill and recycling facilities, and title information on the mobile homes. HCET also requested access to the mobile homes for the purpose of environmental inspections before demolition. Most contractors were not willing to comply with these requirements. Second, there are not many mobile home removal jobs on the market, and those that exist often become available on short notice. When a home does need to be removed, the mobile home park operator wants it removed as soon as possible so that a new home can be installed in its place. HCET's involvement would necessitate lengthy paperwork and potential delay in mobile home removal.

After consulting with the IHC, HCET decided to conduct the entire study in south Florida, where supportive contractors are available. The only differences, for the purposes of the study, between south Florida and west-central Florida are slight variations in local permit regulations and tipping fees at landfills. Finally, the IHRC secured the donation of a double-wide unit from Rexmere Village in Davie, Broward County, to be used in the project. With the additional two units (a double-wide unit is equivalent to two single-wide units), a total of five units were available for the pilot study.

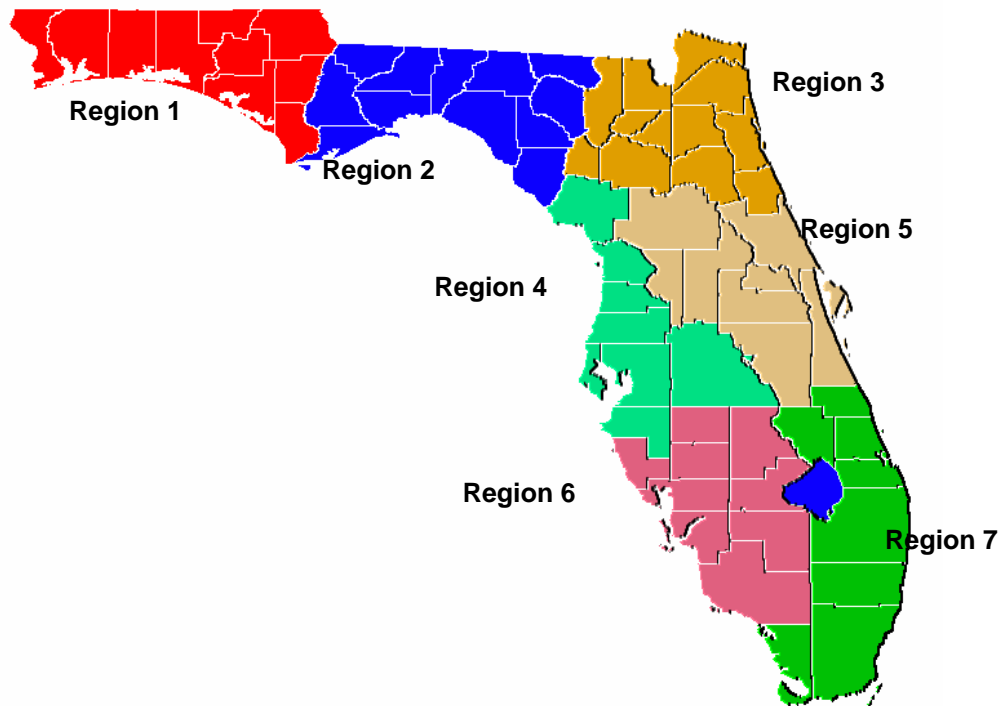
Blanchard's Mobile Home Removals & Transport, Inc., a mobile home contractor located in Hollywood, in Broward County, was selected as the primary contractor for this project because of its extensive experience in the mobile home industry. Blanchard's Mobile Home Removals & Transport agreed to provide three single-wide mobile homes

free of charge and to transport them to HCET's test facility in Miami at a cost of \$450 per unit. Demolition of the first three mobile homes and segregation of the materials generated from demolition was also performed by Blanchard's Mobile Home Removals & Transport. The other two units were demolished by Lango Equipment Service, Inc., a demolition contractor from Miami. Advanced Industrial Hygiene Service, Inc. was selected as the lead-based paint inspector, and ATC Associates, Inc., was given the contract for asbestos inspection. Also, telephone surveys, personal interviews, visits to mobile home parks and demolition sites were conducted, and state and local government regulations were reviewed in an effort to collect additional pertinent data.

Key sources of information were utilized from HCET's report of last year (see reference 6), which includes a feasibility report on a mobile home recycling project conducted in Vermont, information from the Florida Manufactured Housing Association (FMHA), and information from the Florida Department of Environmental Protection (FDEP). The FMHA is actively involved in the mobile home industry. It provided the directory to navigate key businesses and contractors involved in the trade, demolition, and transportation of manufactured housing units. Information pertaining to site locations was derived, and visits and interviews were conducted to get a complete understanding of the climate and personnel involved in the industry. The FDEP was the largest single source of information on solid waste management practices, facilities, and regulations in Florida. Its personnel and website provided names and locations of active landfills and recycling centers, as well as information on the specific laws and regulations governing waste disposal.

## **2.2 Mobile Home Regions in Florida**

As stated in last year's report, information was obtained from various regions in Florida where surveys were conducted in order to achieve a statewide perspective on the mobile home recycling issue. For the initial phase (described in last year's report), the IHRC Team chose to adopt the regional divisions as defined by the Florida Department of Community Affairs, Division of Emergency Management. This regional approach was particularly important because it allowed a thorough investigation into the mode of operation of the industry in specific locations. The regions are identified in Figure 1 and Table 1.



**Figure 1. Florida regions.**

Table 1. Description of Florida Regions

Region Number	Region Name	Counties
1	West	Escambia, Santa Rosa, Okaloosa, Walton, Holmes, Washington, Bay, Jackson, Calhoun, Gulf
2	Big Bend	Gadsden, Liberty, Franklin, Leon, Wakulla, Jefferson, Madison, Taylor, Hamilton, Suwannee, Lafayette, Dixie
3	Northeast	Columbia, Gilchrist, Baker, Union, Bradford, Alachua, Nassau, Duval, Clay, Putnam, St. John, Flagler
4	West Central	Levy, Citrus, Hernando, Pasco, Pinellas, Hillsborough, Manatee, Polk
5	Central	Marion, Sumter, Lake, Volusia, Seminole, Orange, Osceola, Brevard
6	Southwest	Sarasota, Hardee, DeSoto, Charlotte, Lee, Highlands, Glades, Hendry, Collier
7	Southeast	Okeechobee, Indian River, St. Lucie, Martin, Palm Beach, Broward, Monroe, Miami-Dade

Although investigations and surveys were conducted in various regions in Florida, for the pilot mobile home feasibility program, the mobile home units and all contractors were selected from the southeastern region.

### **2.3 Limitations of This Study**

The information compiled in this document is the representation of the data extracted from the testing activities performed on five mobile home units at HCET's testing facility. The accuracy of the information in this report may be affected by the following factors:

1. Only five mobile home units were used in this study to represent a total of 338,000 and 643,000 mobile home units in Florida constructed pre-1976 and between 1976 and 1994, respectively.
2. The recyclable components were separated with the help of laborers and a backhoe, which restricted the separation of clean lumber and other delicate components.
3. The relative percentage of each of the materials that comprise a mobile home was based primarily on HCET's test results, which may not be necessarily representative of all mobile homes in Florida.

### 3.0 MOBILE HOME CHARACTERISTICS

This section focuses on the characteristics and technical aspects of mobile home units. The details contained herein were obtained from HCET's report on the previous phase of this project (reference 6), which included the results of surveys of demolitions contractors and mobile home park owners. The theoretical aspects of mobile home units are presented here and compared with last year's findings in Section 9 of this report.

#### **3.1 Features of Mobile Homes**

Several types, shapes, and models of mobile home units exist, including single-, double-, triple-, and even quadruple-wide units. One unit standing alone is characterized as being a single-wide, and a combination of two, three, and four units are referred to as double-, triple-, and quadruple-wide, respectively. Typically, a single-cell unit is between 12 and 14 feet wide, 50 and 70 feet long, and 11 and 13 feet high.

A vacant single-wide mobile home unit free of furniture and consisting of only the regular housing fixtures, such as bathroom and kitchen installations, weighs an average of 12,000 lbs but can weigh as much as 17,000 lbs, depending on the construction material and fixtures used.

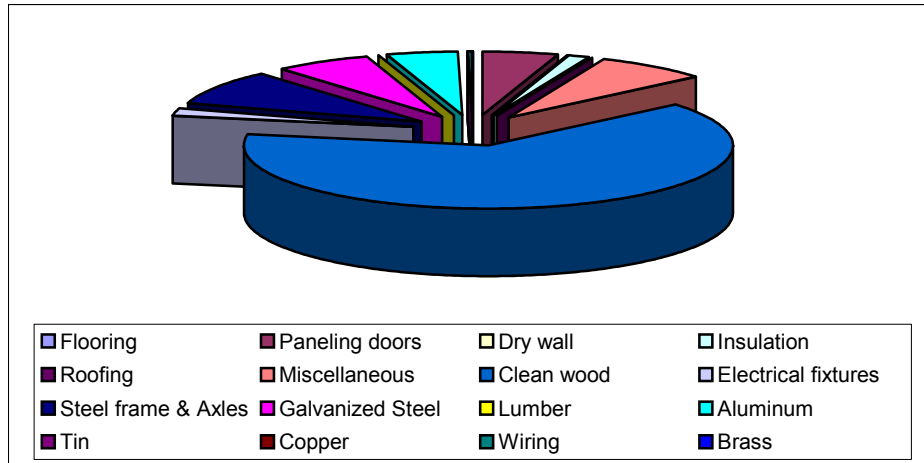
#### **3.2 Materials of Construction**

The construction material of manufactured housing units usually includes ferrous and nonferrous metals, such as galvanized steel, stainless steel, aluminum, copper, lead, and brass. The metals are used in the structural frame, pipe, ducts, and studs. Other prevalent cosmetic material includes wood, gypsum, paper, cardboard, bricks, carpet, padding, and insulation. These materials constitute the interior and exterior walls and roofing of the housing units. Electrical boxes, iron furnaces, and metal exterior doors are also quite common. The recyclable or salvageable materials usually include metals, such as copper, aluminum, and steel, and various utilities. Wood products are the least desired, since they exhibit the weakest resistance to the effects of weathering.

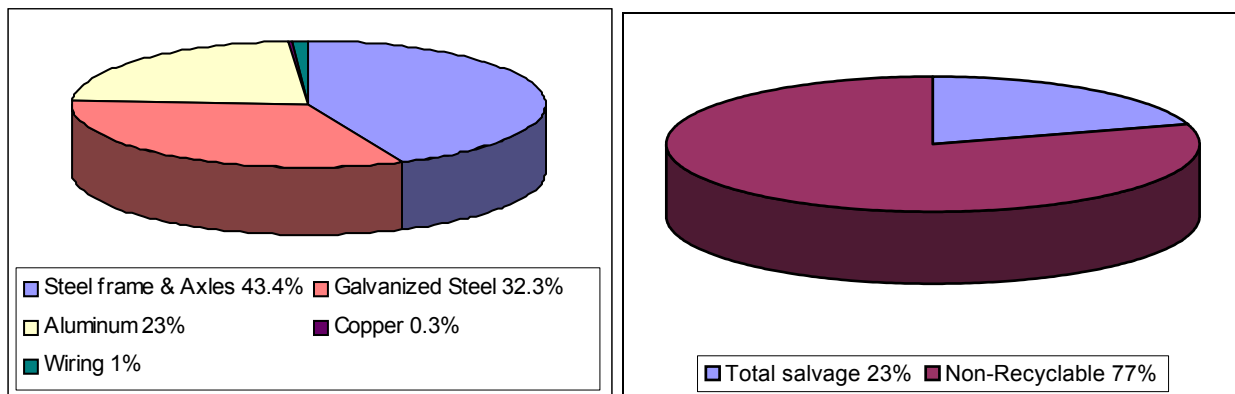
Based on HCET's investigation, recyclable, reusable, and salvageable materials constitute 20% of the total weight of a single trailer, and the remaining 80% is solid waste. Table 2 and Figures 2 and 3 illustrate the materials and their relative contribution to the total weight of the mobile homes tested.

**Table 2. Mobile Home Components and Weight**

Material	Weight of Components (lbs)					Average Weight (lbs)	Relative Percentage
	Trailer 1	Trailer 2	Trailer 3	Trailer 4	Trailer 5		
<b>Solid Waste</b>							
Flooring	0	19	0	324	324	222.33	1.5
Paneling, doors	756	497	53	0	0	435.33	2.93
Dry wall	0	246	0	303	303	284	1.91
Insulation	195	376	196	57	57	176.25	1.2
Roofing	0	59	0	0	0	59	0.4
Miscellaneous	1146	482	248	170	170	443.2	2.98
Clean wood	9,716	9,717	9,717	11,880	11,880	10,582	71.2
Electrical fixtures	273	99	140	0	0	170.67	1.15
<b>Total solid waste</b>	<b>12,086</b>	<b>11,495</b>	<b>10,354</b>	<b>12,734</b>	<b>12,734</b>	<b>11,880.65</b>	<b>79.98</b>
<b>Recyclable, Reusable and/or Salvageable Materials</b>							
Steel frame and axles	1,338	1,339	1,340	1,500	1,500	1,403.4	9.45
Galvanized steel	992	1,435	997	706	706	967.3	6.51
Lumber	0	0	0	0	0	0	0
Aluminum	705	722	687	310	310	546.8	3.68
Tin	0	0	0	0	0	0	0
Copper	9	9	10	40	40	21.6	0.15
Wiring	32	36	33	37	37	35	0.24
Brass	0	0	0	0	0	0	0
<b>Total salvage</b>	<b>3,076</b>	<b>3,541</b>	<b>3,067</b>	<b>2,593</b>	<b>2,593</b>	<b>2,974.1</b>	<b>20.02</b>
<b>TOTAL</b>	<b>15,162</b>	<b>15,036</b>	<b>13,421</b>	<b>15,327</b>	<b>15,327</b>	<b>14,854.75</b>	<b>100.0</b>



**Figure 2. Breakdown of mobile home construction materials by type.**



**Figure 3. (Left) Relative contribution of each material to the total recyclable or salvageable content of mobile homes. (Right) Percentage of salvageable versus nonrecyclable mobile home contents.**

### **3.3 Potential Presence of Hazardous Material**

Mobile homes, especially those built before 1980, may contain asbestos, a material that can cause serious health problems if not handled properly. Asbestos is a mineral fiber found in rocks. It was an extremely popular construction material between 1900 and 1972 because of its excellent fire resistance, insulating ability, and durability. In the early 1970s, it was discovered that inhaled airborne asbestos fibers could cause a number of types of cancer and a severe degenerative lung disease called asbestosis. The Occupational Safety and Health Administration (OSHA) first issued an asbestos regulation in 1972. However, it was not until 1979 that stricter regulations were issued that eventually prohibited the use of asbestos in construction. Structures built prior to these dates, therefore, have a much greater chance of containing asbestos. Asbestos-containing materials were extensively used in pipe and duct insulation, vinyl floor tiles, siding, roofing shingles and felt, spray-on insulation, acoustical ceiling tiles, fuse boxes, window putty, air duct lining, light fixture insulation, and other construction materials. The precise percentage of homes that contain asbestos is unclear, but, given the



extensive use of asbestos in various construction materials prior to the 1980s, the percentage is expected to be very high for pre-1976 mobile homes.

Another significant health hazard associated with mobile homes is lead-based paint, which is toxic and can cause serious health problems, including adverse effects on mental development in children. In 1977, the United States issued regulations that prohibited the use of lead ingredients in paint. However, the use of lead-based paint was not outlawed until 1980. U.S. Department of Housing and Urban Development (HUD) guidelines suggest that 90% of houses built before 1940, 80% of those built between 1940 and 1959, and 62% of those built between 1960 and 1979 used lead-based paint.

The five units used in the HCET study were inspected for lead and asbestos. The lead inspection conducted by Advanced Industrial Hygiene Service, Inc., revealed no lead contamination in the five mobile home units. However, the asbestos inspection, which was conducted by ATC Associates Inc., only found nonfriable asbestos in the floor and ceilings materials in two of the five mobile home units, or 40% of the total units surveyed. Asbestos-contaminated materials were safely and properly disposed of after the demolition process.

## 4.0 PERMITTING AND REGULATIONS

Before performing the demolitions, it was necessary to consider the various permits and regulations involved with transporting and demolishing the mobile units. Also, the regulations for disposing of the wastes generated during the studies were an important issue. This section focuses on the various permits and regulations involved in this study.

### **4.1 Environmental Health and Safety Compliance**

Information regarding various regulations was collected from county agencies and demolitions contractors across south Florida. Although permit requirements varied from county to county, HCET found that there were common procedures and regulations that applied to all.

Asbestos and lead-based paint inspections are mandatory before demolition of a mobile home unit—especially a unit built before 1994—can be undertaken. However, the IHRC Team received anecdotal information to the fact that demolition contractors generally do not comply with said requirement. Since demolition will disturb any asbestos contained in the interior or exterior of a mobile home, various federal, state, and local regulations apply. The National Emission Standard for Hazardous Air Pollutants (NESHAP), 40 CFR, Part 61, Subpart M, promulgated by the U.S. Environmental Protection Agency (EPA) and enforced by the Florida Department of Environmental Protection, is a regulation that monitors the levels and use of asbestos. It requires thorough written asbestos inspections, written notification, and the observation of proper removal and disposal practices when handling regulated asbestos-containing material.

The construction industry asbestos standard, 29 CFR 1926.1101, and the general industry asbestos standard, 29 CFR 1910.1001, are enforced by the Occupational Safety and Health Act. The standards make provision for employees who are exposed to the hazards of working with asbestos. They mandate that employers provide information, proper respiratory protection, personnel and medical monitoring, proper training, and record keeping for all employees that handle asbestos-containing materials.

In accordance with these regulations, asbestos inspections were carried out on the five mobile home units by licensed asbestos inspectors. An average of 10 samples were taken from each single-wide mobile home unit. The asbestos inspection results and necessary documents are provided in Appendix D of this report.

The federal regulations governing the use of lead-based paint include the EPA's Toxic Substance Control Act (TSCA), Sec. 402-404; HUD's Lead Safe Housing Regulation;

and OSHA's Lead Standards for General Industry (29 CFR 1910.1025) and Construction (29 CFR 1926.62). The TSCA established the criteria for identifying hazards in interior and exterior lead-based paint, lead-contaminated dust (generated by normal oxidation of the paint), and lead-contaminated soil. Under these standards, lead is considered a hazard if there is greater than 40 micrograms of dust per square foot on the floor, 250 micrograms of lead in the dust per unit square foot on window sills, and 1,200 ppm average for a yard.

In accordance with these regulations, lead-based paint inspections were carried out by licensed inspectors on the five mobile home units in this study. It was found that the concentrations of lead were not above the threshold limits.

#### **4.2 Demolition Permit**

Before demolition, contractors applied for a full demolition permit from the local county building department.

#### **4.3 Transportation Permit**

Before transporting multiple-width mobile home units, it is necessary to untie and segregate them. Electrical, plumbing, and gas disconnection permits were acquired to prevent any threat of fire that may have been posed during the untying and segregating process. For transportation, the contractors obtained a transportation permit from the Florida Department of Transportation. This permit allows high-tonnage vehicles to transport wide loads (14 feet wide or greater) on federal highways. The permits are issued per registered vehicle (per truck) and can be renewed on an annual basis. Safety measures were taken for transporting the mobile home units to HCET's test site.

## 5.0 DEMOLITION PROCEDURES AND ACTIVITIES

This section focuses on the demolition procedures and activities carried out on five mobile home trailers from November 2002 to April 2003. These procedures primarily involved four tasks:

- Procurement of mobile homes
- Transportation of mobile homes to HCET's test facility
- Inspections for the presence of lead and asbestos
- Demolition of mobile homes, including classification, piling, weighing, and disposal of waste materials

The procedures and activities involved in the demolition of mobile homes were methodical and varied slightly, depending on site, location, and size of the unit. All the mobile homes were demolished at HCET's test facility at Florida International University's Engineering Center. Waste was collected in 40-cubic-yard dumpsters and transported to a landfill by Florida International University's Waste Management Center. Asbestos waste was encapsulated in double plastics bags, placed in a barrel, and transported to the appropriate landfill by Florida International University's Waste Management Center, in accordance with the procedures and regulations of the EPA (NESHAP), OSHA, and the state of Florida.

### **5.1 Procurement of Mobile Homes**

HCET initially focused on locating mobile homes and facilities that could be used for this study and on identifying contractors who would support the project.

Blanchard's Mobile Home Removals & Transport, Inc., a mobile home contractor located in Hollywood, Florida, was selected as the primary contractor for this project because of its extensive experience in the mobile home industry. As mentioned in Section 2.1, Blanchard's Mobile Home Removals & Transport, Inc., agreed to provide three single-wide mobile homes free of charge. The three homes were obtained from two mobile homes parks in Broward County (Figure 4). The homes were full of trash, damaged furniture, and electronics. HCET staff removed the trash and documented the nearly 6,100 lbs of waste collected from the three homes.



**Figure 4. Three single-wide mobile homes acquired for the study.**

The remaining two mobile homes units were obtained from Rexmere Mobile Home Village in Davie, Florida. All five units were built in the 1970s. The IHRC Team decided to use a double-wide mobile home unit because, in terms of analytical results, a double-wide unit is equivalent to two single-wide units (Figure 5).



**Figure 5. Double-wide mobile home unit at Rexmere Village Mobile Home Park, Davie, Florida.**

## **5.2 Transportation of mobile homes**

Blanchard's Mobile Home Removals & Transport, Inc., transported all mobile home units to HCET's test facility in Miami at a cost of \$450 per unit. In early December 2002, the three single-wide mobile homes were delivered to the HCET test facility, and by the end of March the remaining separated two units had arrived. The entire contents of the mobile homes, including add-ons, were brought to HCET.

Normally, a mobile home will not have tires and wheels after being installed at a park. For transportation purposes, however, Blanchard's had to add tires and wheels to each

corner of the mobile homes. The double-wide unit was separated into two single-wide units, and each was transported separately.

Although demolition can be performed off site or on site, mobile home park managers usually prefer off-site demolition to avoid having to indemnify themselves against any personal injury or property damage that may occur during an on-site demolition process. Off-site demolition is also recommended in cases where site assessments reveal a substantial risk of fire or bodily injury that can arise as a result of rupture to gas or utility lines. Since HCET has a test facility where the demolition could be performed without danger, off-site demolition was conducted.



**Figure 6. Three single-wide mobile homes were transported to HCET's facility on December 5 and 6, 2002.**

Permits were obtained from the Florida Department of Transportation for transporting the mobile home trailers to HCET's test facility (see Figure 6). The permits allowed high-tonnage vehicles to transport wide loads (14 feet wide or greater) on federal highways.

### **5.3 Lead and Asbestos Inspections**

As discussed previously, older mobile homes are subject to asbestos and lead-based paint contamination. Since a demolition operation will disturb any lead or asbestos on the interior or exterior of the unit, it is required that lead and asbestos inspections be performed.

Before conducting any inspections, HCET staff cleared the mobile home trash, which may have posed difficulties for inspectors performing lead-based paint and asbestos surveys (Figure 7). The mobile home units were found to contain nearly 4,200 lbs of trash, mainly plywood, cardboard, damaged furniture, and electronics.



**Figure 7. HCET staff removing trash from mobile homes.**



**Figure 8. Asbestos and lead inspections of the three single-wide units.**

For the first three mobile homes, Advanced Industrial Hygiene Service, Inc., conducted lead inspection, and ATC Associates, Inc., performed asbestos inspection. Both inspections were carried out in the third week of December 2002 (Figure 8). After more than 70 samples were collected, Advanced Industrial Hygiene Service, Inc., revealed no lead contamination in the three single-wide mobile home units. However, the asbestos inspection, which was conducted by ATC Associates, Inc., found nonfriable asbestos in the floor and ceilings of the mobile home 2 and 3.

Nonfriable asbestos-containing materials are materials that contain more than 1% asbestos, as determined using polarized light microscopy, that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure. In the asbestos survey, of the 53 samples analyzed, three were documented to contained category I nonfriable asbestos-containing material, with analysis revealing a contents of between 3 and 10% of chrysotile asbestos. Since the report confirmed the presence of nonfriable asbestos

in areas ranging between 200 ft<sup>2</sup> and 600 ft<sup>2</sup>, the asbestos surveyor recommended the use of wet demolition techniques to avoid the emission of airborne fibers during demolition of these three trailers. These techniques employ constant misting with water to suppress airborne asbestos emissions during all disturbance activities (see Appendix D).

Advanced Industrial Hygiene Services, Inc., performed asbestos and lead inspection on the double-wide mobile home unit from Rexmere Village Mobile Home Park. Both inspections were performed on February 6, 2003 (Figure 9). The lead-based paint inspection was conducted in accordance with EPA (40 CFR, Part 745) and HUD (Chapter 7, 1997) guidelines. The definition of lead-based paint according to HUD and the EPA is 1.0 mg/cm<sup>2</sup> lead or 0.5% lead by weight. Testing of a total 70 samples indicated that no lead in amounts greater than or equal to 1.0 mg/cm<sup>2</sup> in paint was found on any building components. Hence, this double-wide unit mobile home was considered free of lead-based paint, in accordance with 40 CFR, Part 745, of EPA guidelines. Asbestos inspection was conducted using polarized light microscopy, as with the other units, in conjunction with dispersion staining, as outlined in 40 CFR, Part 63, Subpart F (January 1987). The inspection revealed that no asbestos-containing materials were identified in either trailer.



Figure 9. Lead and asbestos inspection of a double-wide mobile home unit at Davie, Florida.

## **5.4 Demolition of Mobile Home Units**

### **5.4.1 First Phase**

The first phase included the demolition of three single-wide mobile home units at HCET's test facility in the third week of March 2003. Blanchard's Mobile Home Removals & Transport, Inc., conducted the first phase of the demolition process. Since the floors and ceilings of the mobile homes were found to contain asbestos, the wet demolition process was used to prevent the dispersion of any airborne fibers released



during demolition. A hose with a nozzle capable of producing mist was employed for this purpose.

A backhoe was used to demolish the general structure of the mobile home. Also, in the process of segregating, piling, weighing, and wasting materials, the backhoe was the main tool used to perform the demolition task. Other tools used were hammers, blowtorches to cut iron bars into small pieces, and shovels and brooms to clean up the test facility when the demolition, classification, and weighing were complete. A 4-by-4-foot platform scale was rented for weighing classified materials. Several dumpsters for waste disposal, provided by Florida International University's Waste Management Center, were placed beside the demolition site for the demolition debris.

Segregation of waste was performed primarily by manual labor. The workers provided the effort associated with selectively removing material and depositing it in specific containers or dumpsters. Usually, laborers require no technical training other than the ability to identify salvageable materials visually. They performed their tasks wearing the required personal protective equipment, including steel-tipped shoes, goggles, and dusk mask, as suggested by OSHA. The activities were carried out in compliance with HCET's Project-Specific Environmental Health And Safety Plan (PSEHASP).

The backhoe was used to skin the exterior wall surface of the mobile home to remove all the aluminum sheets on the outer walls. The removed sheets were lifted and placed in a pile to be compressed with the front-end loader of the backhoe (Figures 10 through 17).

During this process, the laborers collected all aluminum sidings and frames that were separated from the exterior walls. The area of the exposed wooden insulated wall between the main structural frames of the mobile home was then collapsed, with the roof remaining intact.

The backhoe was then placed in a central location, and it stripped the roof of its sheeting. Half of the roof was then collapsed onto the floor of the mobile home. The debris was then swept from the floor of the mobile home onto the ground, where it was compressed and crushed into smaller pieces. The second half of the roof was then collapsed, and the same process of collection and separation was repeated. The remaining iron bed that forms the base of the mobile home was then cut into manageable lengths (approximately 8 feet) with a blowtorch.

After demolition, the various components of the mobile home units, including waste, recyclable, and salvageable materials, were arranged in individual piles and weighed. Following is the list of materials collected during demolition:

- Wood debris and chips
- Combination steel (steel from roof, floor, household items, pipes, etc.)
- Insulation (fiberglass and thermal insulation)
- Plastic pipes
- Wires
- Aluminum
- Copper
- Carpet and padding
- Steel frames
- Steel axles
- Asbestos-containing floor and ceiling materials

The inspection survey reported the presence of asbestos in the roofs and floors of the second and third mobile homes. However, since the asbestos found was category I nonfriable asbestos, HCET used water mist to perform wet demolition to prevent the spread of asbestos during demolition.

After demolition, the asbestos-containing floor and ceiling materials were enclosed in a plastic bag, weighed, and labeled under the supervision of a licensed asbestos inspector. The asbestos-containing material was ultimately handed over to Florida International University's Waste Management Center.



**Figure 10. Backhoe in the process of shearing off the exterior aluminum sheets from the walls of a mobile home.**



**Figure 11. Backhoe segregating the wood from a mobile home unit.**



**Figure 12. Wet demolition of a mobile home in process.**



**Figure 13. Backhoe lifting the steel axles and frames.**



Figure 14. Backhoe separating the insulation materials.



Figure 15. Backhoe crushing the outer walls of a mobile home unit.



Figure 16. Steel axles were broken into pieces using torches.



Figure 17. HCET test facility after complete demolition of mobile home units.

#### **5.4.2 Second Phase**

The second phase of demolition involved the two trailers from the segregation of the double-wide mobile home unit. This phase was conducted in the third week of April 2003. Lango Equipment, Inc., was the contractor in charge of demolition. The demolition procedures carried out were the same as during the first phase, except that wet demolition was not required, since asbestos was not present.

During the first phase of demolition, HCET determined that the most efficient way of demolishing a mobile home unit is using a backhoe. The backhoe was used to remove

walls, roofs, structural frames, and bottom axle structures and in segregation and weighing.



**Figure 18. (Left) Backhoe forming a pile of wood. (Right) Collection of recyclable materials from wood debris.**

## 6.0 Recycling and Salvaging

Two basic approaches are involved in recycling and salvaging materials from a mobile home:

- Separating the materials at the point of demolition and transporting them directly to the market or a scrap facility
  - Sorting the mixed construction and demolition debris at a central material recovery facility
- 1. HCET researchers separated the materials at the demolition site using manual labor. The efficiency of separation depends mainly on the ability of the laborers to differentiate recyclable and waste materials.*

### **6.1 Recyclable and Salvageable Materials**

According to general perception, the recyclable material obtained from a mobile home consists primarily of various metals, such as aluminum, tin, copper, brass, and galvanized steel. Metal and wooden doors, furnaces, and breaker boxes are some additional household fixtures that have a potential salvage value.

During the demolition demonstration, contractors, working with HCET researchers, were able to collect the following recyclable materials (Figures 19 and 20):

- Aluminum
- Copper
- Steel axles
- Steel frames
- Galvanized steel
- Plastic and metal wires



**Figure 19. (Left) Backhoe collecting aluminum foil. (Right) Weighing of aluminum foil.**

Demolition wood is not desirable because of the lack of standardized grading procedures and the potential risk of contamination in used wood. Used wood is sometimes recycled into chipboard, mulch, or fertilizer but more often is used as fuel for combustion for \$10 per ton or less. Since the demolition of one mobile home produced a total amount of 10,582 lbs of wood debris (approximately 4.81 tons), this amount represents \$48 or less in revenue. Furthermore, wood recycling facilities purchase only clean wood, free of nails, staples, and the like, which for all practical purposes renders wood debris unsuitable for recycling.



**Figure 20. Collection of wood debris.**

## **6.2 Markets for Reusable Materials**

Based on a market survey and demolition activities, the IHRC Team learned that only metals, such as copper, aluminum, steel axles, tin, and brass, are recyclable and can produce revenues by being sold to scrap metal recycling facilities. No recycling or scrap

metal recycling facility is willing to buy other metals. The rest of the demolition materials are considered construction and demolition waste, which must be disposed of in landfills. Also, recycling facilities expressed a willingness to purchase metals in any quantity, provided that they were clean and free of wooden or glass attachments.

All the recycling materials were acquired by the demolition contractors. The quotes obtained for these metals are summarized in Table 3.

**Table 3. Scrap Value of Various Metals**

Salvageable Material	Scrap Value (\$/lb)
Aluminum sheets	0.30
Copper 1	0.60
Steel axles and frames	0.25
Copper 2	0.43
Sheathed copper wire	0.17
Brass	0.50
Cables	0.05
Galvanized steel	0.10
Tin	0.0075

### **6.3 Recycling Facilities**

Appendix B includes a table with information on recycling facilities in Florida. The classification of these facilities is dependent on the material that they accept. They are managed by licensed operators and are regulated by the codes enforced by the Florida Department of Environmental Protection. Most recycling facilities process one or more of the following materials: paper, including newspaper, magazines, and office paper; corrugated containers; glass bottles; aluminum cans; plastic bottles; other plastics; steel cans; white goods; scrap metals; tires; yard trash; and construction and demolition materials. Table 4 summarizes the distribution of existing or proposed facilities that recycle construction and demolition materials, scrap metal, and white goods within the state of Florida as of September 30, 2000.



**Table 4. Recycling Facility Distribution in Florida**

<b>Region</b>	<b>Construction and Demolition Facilities</b>	<b>Scrap Metal Facilities</b>	<b>White Goods Facilities</b>
West	1	29	20
Big Bend	4	46	50
Northeast	19	37	28
West Central	13	60	18
Central	6	36	16
Southwest	9	25	19
Southeast	13	73	15
<b>State-wide</b>	<b>65</b>	<b>306</b>	<b>166</b>

## 7.0 WASTE MANAGEMENT

Generation of large amounts of construction and demolition materials is usually associated with the demolition of mobile home units. The discarded waste usually consists of lumber, cardboard, gypsum, paper, or concrete bricks. These materials are classified as construction and demolition waste and are usually disposed of at landfill facilities.

### **7.1 Wastes Generated During Testing**

THE FOLLOWING IS THE LIST OF WASTES GENERATED DURING THE DEMOLITION OF FIVE MOBILE HOME UNITS AT HCET'S TESTING FACILITY:

- Utilities, including washing machines, furnaces, and refrigerators
- Household items, such as electronics, furniture, and books
- Wood debris with nails and metal pieces
- Fiberglass and thermal insulation
- Asbestos-containing ceiling materials
- Combination steel structures
- Carpets, beds, and padding
- Plastic and steel pipes
- Plastic and metal wires
- Insulation, etc.

Recyclable waste was collected separately and handed over to the demolition contractors for recycling. Recycled waste includes scrap metals, such as aluminum, copper, steel frames, and so on. Based on HCET's findings, the weight of a single mobile home unit is about 15,048 lbs (average of five units). The average weight of wood or lumber in a single-wide mobile home unit is approximately 10,582 lbs. For this reason, wood forms constitute about 70.3% of the total trailer weight, making them the basic component of a mobile home unit. The average weight of recyclable or salvageable materials in a single mobile home unit is about 3,103.9 lbs, which is about 20.6% of the total weight. The other 9.1% corresponds to carpets, glass, electrical fixtures, and so on. (See Appendix A for a table of Weights of Mobile Home Components.)

## **7.2 Disposal of Waste**

Mobile home waste is generally of two types: solid waste and recyclable waste. Disposal of solid waste is a potential problem because it is quite expensive and governed by regulatory concerns.

After demolition activities, the solid waste was separated from the recyclable waste. The recyclable waste was taken to the recycling or scrap metal centers by the demolition contractors. Since the demolition was carried out at HCET's test facility, the Florida International University Waste Management Center was in charge of disposing of the solid waste.

For the first phase, nine 40-cubic-yard dumpsters were used to dispose of the solid waste. For the second phase, four 40-cubic-yard dumpsters were used (Figure 21). All the dumpsters were supplied by the Florida International University Waste Management Center.



**Figure 21. Dumpster collecting wood debris.**

The asbestos-containing waste materials were collected separately, labeled, and enclosed in a double plastic cover to avoid exposure to the environment. This waste was shipped separately to the Florida International University Waste Management Center for final disposal.

## 8.0 COST ANALYSIS

Costs associated with the technical aspects of a mobile home recycling program can be broken down into site preparation, demolition, transportation, and waste management. Each of these cost categories incurred in HCET's findings is discussed in this section.

### **8.1 Site Preparation Cost**

Site preparation cost is money expended prior to the actual demolition job, including permitting and yard-clearing costs. For this project, HCET staff members removed the utilities, furniture, electrical items, and trash from the mobile homes. It took four laborers 44 hours to dispose of the waste for the first three homes and 29 hours for the last two. Site preparation was conducted so as to facilitate the work of the lead and asbestos inspectors. Although graduate students performed this activity, it would normally be performed by laborers at an estimated cost of \$190.70 per mobile home.

Site preparation costs also include the costs incurred for performing asbestos and lead-based paint assessments of mobile home units. For the first three units, ATC Associates, Inc., performed asbestos inspection at a cost of \$350 per unit, and Advanced Industrial Hygiene Services, Inc., conducted lead inspection at \$500 per unit. For the other two trailers, asbestos and lead inspection was performed by Advanced Industrial Hygiene Services, Inc., for a total amount of \$900. Hence, on average, the asbestos and lead inspection cost per mobile home was between \$346 and \$362.50.

### **8.2 Demolition Cost**

The cost of demolishing a mobile home and the crucial factors were able to be analyzed in detail by performing the demolition at HCET's test site. Demolition costs included the transportation of mobile homes, demolition activities, segregation of waste and recyclable materials, and weighing of each classified material pile. The cost for transporting the mobile homes was \$425 per unit. The transportation charge included removal of heavy equipment, removal of add-ons, and attachment of wheels and axles for transportation. An additional cost of \$1,600 included the separation of the double-wide unit into a two single units to facilitate transportation.

The demolition cost for three mobile home units was \$4,050, and that for the remaining two mobile home units was \$2,584. On an average, the total demolition cost for a single-wide mobile home unit was about \$1,326.80.

### 8.3 Waste Management Cost

Waste management costs include costs for with collecting, storing, and disposing of the demolition waste. In this project, waste disposal was not a part of the demolition contract. This section describes the waste management costs incurred in the project.

For the first three mobile home units demolished, nine 40-cubic-yard dumpsters were used to collect the waste materials. The Florida International University Waste Management Center supplied the dumpsters. The delivery or pick-up charge for each dumpster was \$150, with \$49.65 for each ton of waste material and an additional 15% of the total charge in Miami-Dade County franchise fees. The total waste generated for the three units was 27.06 tons. Therefore, the total cost for waste disposal for the units was \$3,097.56. For the last two mobile home units demolished, four 40-cubic-yard dumpsters were used. The total waste generated was 13.13 tons. Therefore, the total cost for waste disposal was \$1,439.69. On average, for a single mobile home unit, the waste disposal cost was approximately \$907.45. It is important to note that this project was conducted at HCET’s test facility and the waste management contractor and fees were from Miami-Dade County. These prices may vary slightly by county. A summary of the cost breakdown associated with the project is shown in Table 5.

**Table 5. Cost Breakdown for Technical Aspects of Mobile Home Recycling Program**

Activity	Cost
<b>Site Preparation</b>	
II. Untying mobile home and cleaning up the parking lot at Mobile Home Park, including	\$800 per mobile home
– Plumbing and sewer disconnect permit	Dependent on square footage and number of fixtures
– Electrical disconnect	Dependent on square footage and number of fixtures
Full demolition permit	\$67 per mobile home
Lead-based paint inspection services (recommended but not mandatory)	\$346 per mobile home
Asbestos inspection services	\$363 per mobile home
Asbestos abatement services (including waste disposal)	\$2,000–3,000 per mobile home <sup>a</sup>
<b>Demolition</b>	
Full demolition and weighing done by contractors	\$1327 per mobile home (including liability insurance, heavy equipment, labor, etc.)
Waste management	\$907 per mobile home
<b>Transportation</b>	
Transportation to offsite demolition facilities	\$425 per trailer

<sup>a</sup>Asbestos abatement cost varies depending on the complexity of the project. Quotations are normally given on a square-footage basis. It is difficult to estimate the abatement cost without knowing how much asbestos is present in a mobile home, but the cost can easily run up to \$2,000 to \$3,000 per mobile home.

## **8.4 Recycling Revenue**

The majority of the revenue derived from the demolition of a mobile home unit is obtained via the sale of salvaged materials. These materials consist primarily of scrap metals, namely, the steel frame, tin, steel piping, aluminum, brass, copper, wiring, and clean lumber. The trade value of these materials is dependent on the open market demand, which fluctuates daily.

Based on the IHRC Team findings, the average revenue derived from all salvaged materials from a single-wide mobile home is approximately \$527.85 (see Table 6). This revenue was derived from aluminum, copper, and steel axles and frames. The demolition contractors or recycling centers were not willing to buy lumber, wiring or steel piping. No brass or tin were obtained during the demolition. The revenue derived from the salvaged material is, however, an additional gain to the demolition contractor, *not a deduction* from the contracted price. Table 6 lists the recyclable materials, weight, and the revenues received from their sale for a single-wide mobile home.

**Table 6. Revenue from Salvaging Materials from a Typical Single-Wide Mobile Home**

<b>Material</b>	<b>Weight (lbs)</b>	<b>Salvage Value (\$/lb)</b>	<b>Revenue (\$)</b>
Steel frame/axles	1403.4	0.25	350.85
Copper	21.6	0.60	12.96
Aluminum	546.8	0.30	164.04
<b>Total Revenue</b>			<b>\$ 527.85</b>

## **8.5 Project Cost Assessment**

The total cost associated with the technical aspects of the mobile home recycling program was estimated in this study, and the results are shown in Table 7. In addition to the research data obtained from the test, the following assumptions were made to complete the calculation:

1. Asbestos abatement costs were not incurred in this study. After asbestos inspection, wet demolition procedures were used to avoid health hazards associated with asbestos contamination. Nevertheless, mobile homes constructed before 1976 require asbestos inspection prior to demolition. Those mobile homes that contain friable asbestos require abatement. It is difficult to estimate accurately the abatement cost without knowing how much asbestos is present in a mobile home. Since the cost can easily run up to \$2,000 to \$3,000 per single-wide mobile home, an average cost of \$2,500 per unit was assumed for the calculation.
2. Because mobile homes built after 1980 are much less likely to contain asbestos, it was assumed that no asbestos inspection or abatement would be performed for mobile homes built between 1976 and 1994.

3. The IHRC Team study involved off-site demolition of mobile home units (i.e., away from the mobile home park). Hence, it was assumed that all mobile home units would be demolished off-site. Also, most mobile home park operators prefer off-site demolition to protect themselves from liability for personal injury or property damage. Therefore, this cost assessment involves transportation costs, an attribute of off-site demolition.
4. The only real difference in cost between the on-site and off-site demolition was the transportation cost, at \$425 or less.
5. The cost of lead-based paint inspections is included in this calculation.
6. Administrative cost is not included.

**Table 7. Total Projected Program Costs (Technical Aspects)**

Item	Pre-1976	1976-1994
Lead inspection per unit <sup>1</sup>	\$ 346	Not applicable
Asbestos and lead inspection per unit <sup>1</sup>	\$ 362.5	Not applicable
Asbestos abatement per unit <sup>1</sup>	\$ 2,500	Not applicable
Demolition contract per unit <sup>1, 2</sup>	\$ 1,326.3	\$ 1,326.3
Labor cost for pre-demolition <sup>1</sup>	\$ 190.7	\$ 190.7
Cost for waste disposal <sup>1</sup>	\$ 907.5	\$ 907.5
Transportation cost per unit <sup>1</sup>	\$ 425	\$ 425
Direct cost per unit <sup>1</sup> free of asbestos	\$ 3,558	\$ 2,849.5
Direct cost per unit <sup>1</sup> if asbestos abatement is required	\$ 6,058	Not applicable
Percentage of units expecting asbestos abatement	60%	Not applicable
Estimated number of units <sup>1</sup> in Florida	338,000	643,000
<b>Total Cost</b>	<b>\$1,709,604,000</b>	<b>\$1,832,228,500</b>

<sup>1</sup>One unit = one mobile home section

<sup>2</sup>The contract includes permit application, demolition, segregation, classification, and weighing.

As can be seen from Table 7, the cost for removing all pre-1976 mobile homes is around \$1.71 billion. An additional \$1.83 billion would be needed to remove all pre-1994 units. The costs can be increased dramatically once social factors, such as finding replacement housing, homeowner relocation, incentives for the homeowners, and administrative costs are considered.

## **9.0 COMPARISON OF FINDINGS WITH THE ASSUMPTIONS MADE IN THE LAST FISCAL YEAR PROJECT**

The IHRC Team's primary objective in this project was to collect objective cost data by demolishing mobile homes at HCET's test facility to verify the assumptions made in phase I of the Feasibility Study of Mobile Home Recycling Program in Florida.

The phase I report was based mostly on information obtained from literature, mainly from review of mobile home recycling programs performed in other states, telephone surveys, personal interviews, visits to mobile home parks and demolition sites, and review of state and local government regulations. In phase II, HCET researchers executed demolition to verify the assumptions made in the phase I report. It was found that there was some discrepancy between the assumptions and HCET's findings.

### **9.1 Weight Comparison**

According to these findings, the average weight of a single-wide mobile home unit is approximately 15,047.05 lbs, and the average weight of recyclable or salvageable materials is approximately 3,103.9 lbs, which is 20.6% of the total weight of a trailer. The recyclable materials are mainly aluminum, copper, and steel axles and frames. The remaining material is non-recyclable and includes cardboard, insulation, untreated wood, drywall, combination steel, carpets, glass, and other household items and utilities.

According to the phase I report, the average weight of a single-wide mobile home unit is approximately 12,000 lbs, and recyclable or reusable materials constitute 37% of that weight. Wooden doors, lumber, galvanized steel, breaker boxes, and some other items were considered salvageable in the first report, which increased the recyclable materials to 37%. However, in phase ii of the study, HCET could not find any recycling center or contractor to buy lumber, doors, and the like because of the negligible importance of these materials.

### **9.2 Cost Comparison**

The total costs associated with the technical aspects of a mobile home recycling program include site preparation, demolition, transportation, and waste management. Based on phase II of the study, the total cost of demolishing a single-wide mobile home unit is \$3,558, while the phase I report had estimated the total cost to be \$2600.

According to the phase I report, the revenue to be derived from the sale of salvageable metals and other fixtures from a mobile home was approximately \$450. Phase II testing yielded revenue of \$527.85 from the sale of salvageable and recyclable metals.



As shown in Table 7, the cost of removing all pre-1976 mobile homes from the Florida housing stock was projected at around \$1.71 billion. An additional \$1.83 billion would be necessary to remove all post-1976/pre-1994 units. Based on the phase I report, the total projected program cost for removing all pre-1976 and post-1976/pre-1994 units was \$1.66 billion and \$1.34 billion, respectively.

### **9.3 Other Comparisons**

The phase I report assumed that metal, such as galvanized steel; lumber; wiring; wooden doors; breaker boxes; and the like were recyclable. In phase II of the study, HCET found that, although these items are recyclable, it was difficult to make revenue from them because contractors and companies were not willing to buy them. These materials can either be disposed of as waste or given to recycling companies free of charge, which in any case is not cost-effective. Hence, HCET treated these materials as waste, and they were ultimately disposed of in landfills.

It was assumed in the phase I report that 80% of the mobile homes would be demolished on-site. However, this was not a practical assumption. Most mobile home park operators prefer off-site demolition to protect themselves from potential personal injury liability or property damage. Also, for demolishing mobile homes in large numbers, off-site demolition is more suitable and feasible. HCET carried out the demolition off-site, and it was assumed that all demolitions would take place off-site for estimating the total projected program cost.

## 10. BENEFITS OF THE PROGRAM

Mobile homes are at high risk for severe damage in the event of hurricanes. Numerous studies have reported on financial losses during past hurricanes. For example, Hurricane Andrew (1992) reportedly caused over \$30 billion in damage. However, the percentage of the loss associated with either mobile homes themselves or collateral damage caused by the flying debris derived from damaged mobile homes has not been well documented. Consequently, it is difficult to evaluate the benefits of the mobile home recycling program quantitatively. Qualitatively, the principal benefits of a statewide mobile home recycling program are the following:

1. Property losses and the possibility for casualties sustained by the mobile home residents in the event of a catastrophic storm would be reduced.
2. Potential payouts by the government agencies to disaster victims would be reduced.
3. Often after a hurricane event, damaged homes are dumped into landfills without recycling due to the time constraints associated with the emergency situation. Systematic deconstruction and recycling of mobile homes prevents simple dumping of large volume of waste in a post-hurricane situation, thus conserving landfill space and increasing the potential life span of landfills.
4. Large-scale deconstructing and salvaging contracts may provide valuable employment opportunities in economically underutilized areas.
5. Reuse of materials in the construction industry would be encouraged. Lumber can be used in casting, shoring, and form work in reinforced concrete buildings.

## 11. CONCLUSION

This detailed study and research on the technical aspects of demolishing mobile home units has led to the following conclusions:

1. An average weight of a single-wide mobile home is approximately 15,047 lbs. As much as 20.6% of it is recyclable or reusable. The recyclable materials are primarily metals, such as aluminum, copper, and steel axles and frames. The non-recyclable materials include cardboard, lumber, drywall, insulation, rugs, glass, and other household items and utilities.
2. The average revenue derived from the sale of salvaged metals and other fixtures from a mobile home is approximately \$527.85. The revenue derived is, however, an additional gain to the demolition contractor, not a deduction from the contracted price. This component of the process warrants further study, as it may well be a factor in determining the actual cost for deconstructing mobile homes under a large-scale state wide program.
3. Asbestos and lead inspection should be carried out for all mobile homes constructed before 1976. Since a demolition operation will disturb asbestos on the interior and exterior of the mobile home, an asbestos survey is essential. The average cost involved for asbestos and lead inspections for a single unit is around \$760. If asbestos is found, abatement is required, which is assumed to cost \$2,500 for a single unit.
4. The average cost for demolishing a single-wide unit mobile home is \$1,326.80, exclusive of pre-demolition, waste disposal, and transportation costs. The average cost for pre-demolition is \$190.70, that for waste disposal is \$ 907.45, and that for transportation is \$ 425 for a single unit. Hence, the average total cost for demolishing a mobile home is approximately \$3,558.
5. Mobile home park operators prefer off-site demolition to avoid having to indemnify themselves against personal injury or property damage. However, off-site demolition is more expensive, since transportation of mobile homes is required. On-site wholesale demolition may be the only choice when a mobile home is in such a poor condition that it is not roadworthy.
6. The findings of this study were compared with the assumptions made in the last fiscal year report. The main differences between the theoretical and this year's practical findings are: (a) The per unit cost of demolition is 36.8% higher than estimated, (b) The value of recyclable materials is higher than had been estimated by a factor of 17.3%.

The total cost for the mobile home replacement program will be increased drastically once social factors, such as arranging replacement housing, homeowner relocation, and incentives for the homeowners, are considered.

In conclusion, a statewide mobile home recycling program is feasible, but the program can be costly. Costs associated with the social factors mentioned above must be investigated to determine whether the program should proceed and how it should be carried out.

## 12. RECOMMENDATIONS

Costs associated with the social factors of a mobile home recycling program must be added to determine the total cost of the program. These factors include, but are not limited to, replacement housing arrangements, homeowner relocation, and incentives for the homeowners.

If the recycling program is realized, it is recommended that priority be placed on areas with high mobile home populations and areas where the probability of hurricane strike is greatest. Since all areas of Florida are not equally exposed to hurricane damages, it is important that precedence be given to the high-risk areas.

A mobile home recycling program entails active involvement of the state and local government agencies, environmental consultants, demolition contractors, transportation companies, recycling facilities, and landfill operators. A program of such a scale requires deliberate planning and a well-prepared execution plan.

This study showed that as much as 20.6% of material derived from a mobile home can be reused or salvaged. However, some contractors do not practice recycling because they do not believe it is cost-effective. To the contrary, the potential revenue from recycling is approximately \$527.85 per mobile home section, which is not insignificant, given that the average on-site demolition contract cost is \$1326.80 per unit. In order to preserve the limited landfill space, the program, if implemented, must ensure that all contractors hired carry out recycling to the greatest extent possible.

Although the IHRC Team's research found that the recycling program will have a minimal impact on the capacity and anticipated lifetime of existing landfill facilities, the impact can be reduced in two ways: (1) encouraging the use of a technology that converts construction and demolition waste to daily landfill covers, which could result in up to a 25% reduction in wasteland filled; and (2) strategically transporting waste to disposal facilities that have greater capacities and longer lifetimes.

If the site conditions allow, on-site demolition should be performed to eliminate transportation costs associated with off-site demolition. The cost savings can be significant.

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## APPENDICES

APPENDIX A: Weights of Mobile Home Unit Components

APPENDIX B: Updated List of Demolition Contractors in Florida

APPENDIX C: Updated List of Mobile Home Movers in Florida

APPENDIX D: Asbestos Inspection Report

APPENDIX E: Lead-Based Paint Inspection Report

## APPENDIX A: WEIGHTS OF MOBILE HOME UNIT COMPONENTS



Mobile Home 1 (MH- 1)									
Weight of Components (lbs.)									
Region: Southeast		Size: 12' x 56' x 7' 10"			Building date: It was built in 1971				
<b>Solid Waste:</b>									
Date	Paneling, Doors <sup>1</sup>	Insulation <sup>2</sup>	Clean Wood <sup>3</sup>	Roofing	Flooring <sup>4</sup>	Rugs	Drywall	Electical Fixtures	Misc. <sup>5</sup>
12/18/2002	756								30
12/19/2002								A.C. 273	1116
3/19/2003		195	9716			105			
<b>Totals</b>	756	195	9716	0	0	105	0	273	1146
		<b>Waste Total:</b>							12191
1: Includes all treated, non-burnable wood		2: All ceiling and wall fiberglass insulation			5: ceiling, glass, trash, etc.				
3: Untreated wood to be burned		4: Includes finish-and subflooring							
<b>Recyclable and Salvageable materials:</b>									
Date	Aluminum	Copper	Brass	Wiring	Galv. Steel	Steel axles	Steel Frame	Lumber	Other
12/18/2002	126								
3/19/2003	579	9		32	992	251	1087		75
<b>Totals</b>	705	9	0	32	992	251	1087	0	75
<b>Total Salvage:</b>									3151
Total Weight of Salvage:									3151
Total Weight of Waste:									12191
<b>Total Weight of Trailer:</b>									15342

Mobile Home 2 (MH-2)										
Weight of Components (lbs.)										
Region: Southeast		Size: 12' x 48' x 8' 5"			Building date: It was built between 1971 - 1975					
<b>Solid Waste:</b>										
Date	Paneling, Doors <sup>1</sup>	Insulation <sup>2</sup>	Clean Wood <sup>3</sup>	Roofing	Flooring <sup>4</sup>	Rugs	Drywall	Electical Fixtures	Misc. <sup>5</sup>	
12/17/2002	497	181.25		59	19		246	TV Set	47	115
12/18/2002								A.C.wall	52	367
3/19/2003		195	9717				106			
<b>Totals</b>	497	376.25	9717	59	19		106		99	482
		<b>Waste Total:</b>								11601.25
<sup>1</sup> : Includes all treated, non-burnable wood		<sup>2</sup> : All ceiling and wall fiberglass insulation			<sup>5</sup> : ceiling, glass, trash, etc.					
<sup>3</sup> : Untreated wood to be burned		<sup>4</sup> : Includes finish-and subflooring								
<b>Recyclable and Salvagable materials:</b>										
Date	Aluminum	Copper	Brass	Wiring	Galv. Steel	Steel axles	Steel Frame	Lumber	Other	
12/17/2002				4					6	
12/18/2002	143				443					55
3/19/2003	579	9		32	992	252	1087			75
<b>Totals</b>	722	9	0	36	1435	252	1087	6		130
<b>Total Salvage:</b>										3677
Total Weight of Salvage:										3677
Total Weight of Waste:										11601.25
<b>tal Weight of Trailer:</b>										15278.25

Mobile Home 3 (MH-3)										
Weight of Components (lbs.)										
Region: Southeast		Size: 12' x 48' x 7'10"			Building date: It was built between 1971 - 1975					
<b>Solid Waste:</b>										
Date	Paneling, Doors <sup>1</sup>	Insulation <sup>2</sup>	Clean Wood <sup>3</sup>	Roofing	Flooring <sup>4</sup>	Rugs	Drywall	Electical Fixtures	Misc. <sup>5</sup>	
12/16/2002	53							washer	140	248
3/19/2003		196	9717			106				
<b>Totals</b>	53	196	9717	0	0	106	0	140	248	
		<b>Waste Total:</b>								10460
<sup>1</sup> : Includes all treated, non-burnable wood <sup>2</sup> : All ceiling and wall fiberglass insulation <sup>3</sup> : Untreated wood to be burned <sup>4</sup> : Includes finish-and subflooring <sup>5</sup> : ceiling, glass, trash, etc.										
<b>Recyclable and Salvageable materials:</b>										
Date	Aluminum	Copper	Brass	Wiring	Galv. Steel	Steel axles	Steel Frame	Lumber	Other	
12/16/2002	107				4.5					
3/19/2003	580	10		33	993	252	1088		76	
<b>Totals</b>	687	10	0	33	997.5	252	1088	0	76	
<b>Total Salvage:</b>										
Total Weight of Salvage:										
Total Weight of Waste:										
<b>Total Weight of Trailer:</b>										

Mobile Home 3 (MH-3)									
Weight of Components (lbs.)									
Region: Southeast		Size: 12' x 48' x 7'10"			Building date: It was built between 1971 - 1975				
Solid Waste:									
Date	Paneling, Doors <sup>1</sup>	Insulation <sup>2</sup>	Clean Wood <sup>3</sup>	Roofing	Flooring <sup>4</sup>	Rugs	Drywall	Electical Fixtures	Misc. <sup>5</sup>
12/16/2002	53							washer	140
3/19/2003		196	9717				106		
<b>Totals</b>	53	196	9717	0	0		106	0	140
		<b>Waste Total:</b>							10460
<sup>1</sup> : Includes all treated, non-burnable wood		<sup>2</sup> : All ceiling and wall fiberglass insulation			<sup>5</sup> : ceiling, glass, trash, etc.				
<sup>3</sup> : Untreated wood to be burned		<sup>4</sup> : Includes finish-and subflooring							
Recyclable and Salvageable materials:									
Date	Aluminum	Copper	Brass	Wiring	Galv. Steel	Steel axles	Steel Frame	Lumber	Other
12/16/2002	107				4.5				
3/19/2003	580	10		33	993	252	1088		76
<b>Totals</b>	687	10	0	33	997.5	252	1088	0	76
<b>Total Salvage:</b>									3143.5
Total Weight of Salvage:									3143.5
Total Weight of Waste:									10460
<b>Total Weight of Trailer:</b>									13603.5

Mobile Home 3 (MH-3)									
Weight of Components (lbs.)									
Region: Southeast		Size: 12' x 48' x 7'10"			Building date: It was built between 1971 - 1975				
<b>Solid Waste:</b>									
Date	Paneling, Doors <sup>1</sup>	Insulation <sup>2</sup>	Clean Wood <sup>3</sup>	Roofing	Flooring <sup>4</sup>	Rugs	Drywall	Electical Fixtures	Misc. <sup>5</sup>
12/16/2002	53							washer	140
3/19/2003		196	9717				106		
<b>Totals</b>	53	196	9717	0	0		106	0	140
		<b>Waste Total:</b>							10460
<sup>1</sup> : Includes all treated, non-burnable wood		<sup>2</sup> : All ceiling and wall fiberglass insulation			<sup>5</sup> : ceiling, glass, trash, etc.				
<sup>3</sup> : Untreated wood to be burned		<sup>4</sup> : Includes finish-and subflooring							
<b>Recyclable and Salvageable materials:</b>									
Date	Aluminum	Copper	Brass	Wiring	Galv. Steel	Steel axles	Steel Frame	Lumber	Other
12/16/2002	107				4.5				
3/19/2003	580	10		33	993	252	1088		76
<b>Totals</b>	687	10	0	33	997.5	252	1088	0	76
<b>Total Salvage:</b>									3143.5
Total Weight of Salvage:									3143.5
Total Weight of Waste:									10460
<b>Total Weight of Trailer:</b>									13603.5

Mobile Home 4 (MH-4)										
Weight of Components (lbs.)										
Region: Southeast		Size: 12' x 48' x 7'10"			Building date: It was built between 1971 - 1975					
<b>Solid Waste:</b>										
Date	Paneling, Doors <sup>1</sup>	Insulation <sup>2</sup>	Clean Wood <sup>3</sup>	Roofing	Flooring <sup>4</sup>	Rugs	Drywall	Electical Fixtures	Misc. <sup>5</sup>	
05/02/2003		57	11880		324		303			170
<b>Totals</b>		57	11880	0	324	0	303	0		170
		<b>Waste Total:</b>								12,734
1: Includes all treated, non-burnable wood		2: All ceiling and wall fiberglass insulation			5: ceiling, glass, trash, etc.					
3: Untreated wood to be burned		4: Includes finish-and subflooring								
<b>Recyclable and Salvageable materials:</b>										
Date	Aluminum	Copper	Brass	Wiring	Galv. Steel	Steel axles	Steel Frame	Lumber	Other	
05/02/2003	310	40		37	706		1500			181
<b>Totals</b>	310	40	0	37	706	0	1500	0		181
<b>Total Salvage:</b>										2774
Total Weight of Salvage:										2774
Total Weight of Waste:										12,734
<b>Total Weight of Trailer:</b>										15,508

Mobile Home 5 (MH-5)									
Weight of Components ( lbs.)									
Region: Southeast		Size: 12' x 48' x 7'10"			Building date: It was built between 1971 - 1975				
<b>Solid Waste:</b>									
Date	Paneling, Doors <sup>1</sup>	Insulation <sup>2</sup>	Clean Wood <sup>3</sup>	Roofing	Flooring <sup>4</sup>	Rugs	Drywall	Electical Fixtures	Misc. <sup>5</sup>
05/02/2003		57	11880		324		303		170
<b>Totals</b>		57	11880	0	324	0	303	0	170
		<b>Waste Total:</b>							12,734
1: Includes all treated, non-burnable wood		2: All ceiling and wall fiberglass insulation			5: ceiling, glass, trash, etc.				
3: Untreated wood to be burned		4: Includes finish-and subflooring							
<b>Recyclable and Salvageable materials:</b>									
Date	Aluminum	Copper	Brass	Wiring	Galv. Steel	Steel axles	Steel Frame	Lumber	Other
05/02/2003	310	40		37	706		1500		181
<b>Totals</b>	310	40	0	37	706	0	1500	0	181
<b>Total Salvage:</b>									2774
Total Weight of Salvage:									2774
Total Weight of Waste:									12,734
<b>Total Weight of Trailer:</b>									15,508

## APPENDIX B: Updated List of Demolition Contractors in Florida



<b>Company Name</b>	<b>Address</b>	<b>County</b>	<b>Area</b>	<b>Zip</b>	<b>Phone</b>
<b>Big Wheel C &amp; D Facility</b>	2060 Sherman Ave Panama City FL 32045	Bay	North West	32045	850-215-3867
<b>Calvin's Heavy Equipment, Inc.</b>	1741 Sherman Ave. Panama City FL 32405	Bay	North West	32405	850-785-1503
<b>J A C Construction Co.</b>	5722 Pinetree Ave. Panama City FL 32408	Bay	North West	32408	850-235-2210
<b>Syfrett Development Co.</b>	Panama City FL	Bay	North West	32401	850-763-2842
<b>American Sand &amp; Asphalt Paving</b>	2911 S. Highway 77 Lynn Haven FL	Bay	North West	32444	850-763-4300
<b>Disposal Depot, Inc.</b>	2911 S. Highway 77 Lynn Haven FL 32041	Bay	North West	32444	850-78/4-0606
<b>C. G. Reed Land Clearing</b>	1319 Morningside Dr. Melbourne FL	Brevard	Central East	32904	321-676-5743
<b>Ac Ventures</b>	3740 Fenner Rd. Cocoa FL 32926	Brevard	Central East	32926	321-636-5523
<b>Central Florida Recyclers</b>	2764 South Washington Ave. Titusville FL 32780	Brevard	Central East	32780	321-267-1776
<b>Cox Land Clearing</b>	447 Richard Rd. Rockledge FL	Brevard	Central East	32955	321-631-8521
<b>DBI</b>	2838 Sarno Rd. Melbourne FL 32935	Brevard	Central East	32935	321-725-4239
<b>Glover Excavating</b>	1920 Palomino Rd., Melbourne FL	Brevard	Central East	32935	321-254-4955
<b>James O'Neill Construction, Inc.</b>	2080 Meadowlane Ave., Melbourne FL 32904	Brevard	Central East	32904	321-951-1728
<b>P.W. Construction</b>	6605 Bethel Ave., Cocoa FL 32927	Brevard	Central East	32927	321-536-9409
<b>Parks Contracting</b>	P.O Box 3068, Cocoa FL 32924	Brevard	Central East	32924	321-633-4788
<b>Pelican Trash Trailers</b>	2838 Sarno Rd. Melbourne FL 32935	Brevard	Central East	32935	321-725-4239
<b>Southeast Tractor</b>	2816 Choctaw Dr., Melbourne FL	Brevard	Central East	32955	321-259-4794
<b>Whites Bush Hog &amp; Excavating</b>	Melbourne FL 32901	Brevard	Central East	32901	321-724-2262
<b>Advanced Concrete Cutting</b>	Fort Lauderdale FL, 33301	Broward	South East	33301	954-915-8009
<b>American Atlas Wrecking Company, Inc.</b>	Ft. Lauderdale, FL 33301	Broward	South East	33301	954-728-8488
<b>American Cutting &amp; Drilling Co., Inc.</b>	Ft. Lauderdale, FL 33301	Broward	South East	33301	954-587-9868
<b>American Cutting &amp; Drilling Co., Inc.</b>	2920 N.W. 22nd Terr. Pompano Beach FL 33069	Broward	South East	33069	954-917-0240
<b>Beta Demolition</b>	4970 S.W. 52nd St., Ft. Lauderdale FL 33314	Broward	South East	33314	954-792-2620
<b>Big T Bobcat</b>	5877 Margate Blvd. Pompano Beach FL 33063	Broward	South East	33063	954-975-8962
<b>Big T Excavating</b>	6191 W. Atlantic Blvd. Pompano Beach FL	Broward	South East	33075	954-975-8962
<b>Bulldog Clearing</b>	1365 N.E 39th St. Pompano Beach FL 33064	Broward	South East	33064	954-763-5473
<b>Bulldog Demolition</b>	Ft. Lauderdale, FL 33301	Broward	South East	33301	954-763-5473
<b>Cobra Demolition</b>	802 N.E. 20th Ave. Ft. Lauderdale FL	Broward	South East	33301	954-525-5535
<b>Cobra, Inc.</b>	1007 N. Federal Hwy., P.O Box 152, Ft. Lauderdale	Broward	South East	33351	954-766-9922
<b>Colyer Demolition, Inc.</b>	1791 Blount Rd. Unit 1008, Pompano Beach	Broward	South East	33069	954-978-5310
<b>Cross Environmental Services/Simpson &amp; Assoc.</b>	5121 S.W 145th Ave., Ft. Lauderdale FL 33330	Broward	South East	33330	954-689-4021
<b>Henry, G.W., Inc.</b>	4930 S.W. 201st terrace, Ft. Lauderdale	Broward	South East	33332	954-680-4335

<b>Company Name</b>	<b>Address</b>	<b>County</b>	<b>Area</b>	<b>Zip</b>	<b>Phone</b>
<b>J.A.M. Construction, Inc.</b>	5410 N.W. 76th Pl., Pompano Beach, FL 33073	Broward	South East	33073	954-420-0465
<b>Miami Wrecking Co.</b>	2033 W. McNab Rd. Suite 1, Pompano Beach	Broward	South East	33069	954-978-6055
<b>Omega Contracting, Inc.</b>	700 East Atlantic Ave. Ste. 200, Pompano Beach	Broward	South East	33060	954-941-9900
<b>South Florida Demolition Inc.</b>	409 S.E. 28th Ave., Pompano Beach FL 33062	Broward	South East	33062	954-540-5404
<b>Southeast Environmental Inc.</b>	357 Jackson Ave., Ft. Lauderdale FL	Broward	South East	33301	954-452-8961
<b>Sun Recycling</b>	2241 N.W. 15th Ct., Pompano Beach FL 33069	Broward	South East	33069	954-968-8081
<b>WildCat</b>	Ft. Lauderdale, FL 33301	Broward	South East	33301	954-766-9944
<b>Wildcat Kdg, Inc.</b>	P.O. Box 2506, Ft. Lauderdale FL 33303	Broward	South East	33303	954-766-9922
<b>Details Demolition Inc.</b>	Ft. Lauderdale, FL 33301	Broward	South East	33301	954-494-2349
<b>Details Demolition Inc.</b>	Hollywood FL	Broward	South East	33022	954-248-6575
<b>Raider Co.</b>	4980 S.W. 52nd St., Davie FL 33314	Broward	South East	33314	954-791-9913
<b>Rick Hamann &amp; Sons Demolition</b>	8775 S.W. 57th St., Davie FL 33328	Broward	South East	33328	954-434-8937
<b>Stalnakor Contracting</b>	3100 S.W. 137th Terr., Davie FL 33330	Broward	South East	33330	954-382-2737
<b>Big T Demolition</b>	1661 N.W. 61st Ave., Margate FL 33063	Broward	South East	33063	954-921-0199
<b>Big T Demolition</b>	5877 Margate Blvd., Margate FL 33063	Broward	South East	33063	954-975-8962
<b>Certified Crane &amp; Rigging, Inc.</b>	P.O Box 291988, Davie FL 33329	Broward	South East	33329	954-583-2266
<b>Details Demolition Inc.</b>	3840 W. Hillsboro Blvd. Deerfield Beach	Broward	South East	33442	954-494-2349
<b>Fila Demolition &amp; Trucking, Inc.</b>	14521 Fairfax Pl., Davie FL 33325	Broward	South East	33325	954-423-0630
<b>International Unlimited Salvage Inc.</b>	7320 Griffin Rd. Davie FL 33314	Broward	South East	33314	954-587-1966
<b>Pete's trucking &amp; Demolition</b>	2375 S.W. 66th Terr., Davie FL 33317	Broward	South East	33317	954-472-7025
<b>Riteway Demolition and Construction Svcs. Inc.</b>	20911 Johnson St. Suite 109, Pembroke Pines	Broward	South East	33029	954-499-8770
<b>Sunrad Group Inc.</b>	2010 N.W 55th Ave., Margate FL 33063	Broward	South East	33063	954-970-8383
<b>Worldwide Demolition</b>	14200 S.W. 24th St., Davie FL 33325	Broward	South East	33325	954-916-4020
<b>Hamann, Richard A., &amp; Sons, Inc.</b>	5715 S.W. 115th Terr., Cooper City FL 33330	Broward	South East	33330	954-434-8937
<b>Citrus Sand &amp; Debris, Inc.</b>	1590 N Quarterback Terr., Crystal River	Citrus	Central West	34429	352-746-7713
<b>Debusk Richard, Inc.</b>	Inverness FL 34450	Citrus	Central West	34450	352-344-8989
<b>Arrowhead Concrete Pumping</b>	Orange Park FL 32003	Clay	North East	32003	904-278-0077
<b>ABC Debris &amp; Demolition</b>	1215 Green Cove Ave. Green Cove Springs	Clay	North East	32043	904-284-2241
<b>Apex Construction Co.</b>	6017 Pine Ridge Road, Naples FL	Collier	South West	34103	239-643-9795
<b>Arrow Cutting &amp; Demolition</b>	4901 Tamiami Trail N., Naples FL 34113	Collier	South West	34113	239-732-0087
<b>B J Excavating Enterprises, Inc.</b>	4545 Radio Rd. Naples FL 34104	Collier	South West	34104	239-643-3478
<b>Big T Concrete Cutting</b>	Naples FL	Collier	South West	34101	239-732-0024

<b>Company Name</b>	<b>Address</b>	<b>County</b>	<b>Area</b>	<b>Zip</b>	<b>Phone</b>
<b>Big T Concrete Cutting</b>	4420 Mercantile Ave. Naples FL 34417	Collier	South West	34417	239-430-8044
<b>Bradanna, Inc.</b>	4901 Tamiami Trail, E. Suite 200, Naples	Collier	South West	34113	239-455-8891
<b>Precision Concrete Service</b>	5820 Yahl St., Naples FL 34109	Collier	South West	34109	239-596-1441
<b>Naples Trucking, Inc.</b>	P.O Box 7334, Naples FL 34101	Collier	South West	34101	239-455-2950
<b>Six K Association, Inc.</b>	5820 Yahl St., Naples FL	Collier	South West	34104	239-596-1441
<b>Curt's Construction &amp; Hauling</b>	Lake City FL 32096	Columbia	North Central	32096	386-758-1935
<b>Absolute Demolition Inc.</b>	17265 S.W. 83rd Court, Miami FL 33157	Dade	South East	33157	305-969-3644
<b>Allied Demolition, Inc.</b>	7280 W.W. 8th St., Miami FL 33126	Dade	South East	33126	305-267-2301
<b>Allied Demolition, Inc.</b>	8195 N.W. 54th St., Miami FL 33166	Dade	South East	33166	305-513-4994
<b>American Cutting &amp; Drilling Co. Inc.</b>	Miami FL	Dade	South East	33170	305-372-8878
<b>Anu-Way Contractors &amp; Recycling, Inc.</b>	10440 S.W 186th Terrace, Miami FL 33157	Dade	South East	33157	305-256-8858
<b>Concrete Connection, Inc.</b>	8784 N.W. 162nd Terrace, Miami FL 33018	Dade	South East	33018	305-823-0442
<b>Cuyahoga Wrecking Co.</b>	99 N.W.167th St., Miami FL 33162	Dade	South East	33162	305-655-9662
<b>Demolition Masters, Inc.</b>	122 Madeira Ave., Coral Gables FL 33134	Dade	South East	33134	305-448-7511
<b>Echtech Wrecking Corp.</b>	99 N.E. 167th St., Ste.102, North Miami Beach	Dade	South East	33162	305-655-3535
<b>Garbage, Roll-Off, Demolition, Inc.</b>	1602 Alton Rd. #602, Miami Beach FL 33142	Dade	South East	33142	305-620-0620
<b>Jampro Demolition, Inc.</b>	P.O Box 695015, Miami FL 33269	Dade	South East	33269	305-652-3686
<b>Lango Equipment &amp; Service, Inc.</b>	12076 N.W. 98th Ave., Hialeah Gardens	Dade	South East	33018	305-822-4646
<b>Les Development Corp.</b>	709 S.W. 99th Ct. Cir., S, Miami FL 33174	Dade	South East	33174	305-554-5105
<b>Paramount Engineering, Inc.</b>	2551 N.E 184th Ter., North Miami Beach	Dade	South East	33160	305-933-0478
<b>South Florida Cleaning, Inc.</b>	5050 N.W. 7th St., Ste. 307, Miami FL 33126	Dade	South East	33126	305-829-3564
<b>Tamiami Rentals &amp; Construction Services</b>	7044 S.W. 8th st., Miami FL 33144	Dade	South East	33144	305-262-1020
<b>WildCat Demolition Contractors &amp; Consultants</b>	Miami FL 33101	Dade	South East	33101	305-940-2905
<b>D &amp; S Demolition</b>	25550 S.W. 142nd Ave. Homestead	Dade	South East	33032	305-258-6300
<b>H &amp; H Land Clearing, Inc.</b>	25550 S.W. 142nd Ave., Homestead FL 33032	Dade	South East	33032	305-258-5098
<b>SCC International Trash Hauling &amp; Demolition</b>	1090 Opa-locka Boulevard, Miami FL 33168	Dade	South East	33168	305-687-9888
<b>Eco-Care, Inc.</b>	13300 N.W. 97th Ave., Hialeah Gardens	Dade	South East	33018	305-558-2277
<b>Davis Roy L Ditching &amp; Hoe Service</b>	5579 S.E. Stallings Terr. Arcadia FL 34266	Desoto	Central West	34266	863-990-0008
<b>Arwood Recycling</b>	Jacksonville FL 32203	Duval	North East	32203	904-751-1628
<b>Arwood Wrecking</b>	13255 Lanier Rd., Jacksonville FL 32218	Duval	North East	32218	904-751-1628
<b>Burkhalter Wrecking, Inc.</b>	P.O. Box 2407, Jacksonville FL 32203	Duval	North East	32203	904-354-7813
<b>Burkhalter Wrecking, Inc.</b>	2500 Kings Rd. Jacksonville FL 32209	Duval	North East	32209	904-354-7813

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<b>Century Contracting A Excavating Co., Inc</b>	8820-4 103rd Street, Jacksonville FL 32210	Duval	North East	32210	904-772-1333
<b>Econowaste, Inc.</b>	3110 Desalvo Rd. Jacksonville FL 32246	Duval	North East	32246	904-642-5475
<b>G &amp; G Exacavating and Construction, Inc.</b>	Jacksonville, FL 32202	Duval	North East	32202	904-886-9688
<b>Ironhorse Ltd.</b>	2432 Swan St., Jacksonville FL 32204	Duval	North East	32204	904-475-9200
<b>IVS Hydro, Inc.</b>	3000 Faye Rd. Jacksonville FL 32226	Duval	North East	32226	904-696-1006
<b>Lockwood Demolition, Inc.</b>	2116 W. Beaver St. , Jacksonville FL 32209	Duval	North East	32209	904-791-8833
<b>Nelson, J.J., Demolition</b>	961 Cole Rd., Jacksonville FL 32218	Duval	North East	32218	904-751-2050
<b>Omni Demolition, Inc.</b>	10334 Macon Rd., Jacksonville FL 32219	Duval	North East	32219	904-764-5009
<b>Performance Demolition and Waste</b>	Jacksonville FL 32203	Duval	North East	32203	904-744-7171
<b>Realco Wrecking Company</b>	8707 Somers Rd., Jacksonville FL 32226	Duval	North East	32226	904-757-7311
<b>Ross &amp; Logan Demolition</b>	1309 Lane Circle, E., Jacksonville FL 32254	Duval	North East	32254	904-378-9700
<b>Shapell's Roll-Offs</b>	8565 Stocks Rd., Jacksonville FL 32220	Duval	North East	32220	904-786-5503
<b>Townsend W R Contracting, Inc.</b>	Jacksonville FL 32259	Duval	North East	32259	904-354-9202
<b>W L S Contracting</b>	Jacksonville Beach FL 32250	Duval	North East	32250	904-249-4541
<b>W R Townsend Contracting, Inc.</b>	1465 County Road 210 West, Jacksonville	Duval	North East	32259	904-354-9202
<b>Billy Lewis</b>	72 Levy Rd., Atlantic Beach FL 32233	Duval	North East	32233	904-249-4760
<b>Ambush Land Clearing and Hauling</b>	497 N. 70th Ave. Pensacola FL 32506	Escambia	North West	32506	850-457-9111
<b>BellView Land Clearing &amp; Construction</b>	5570 N. Blue Angel Pkwy Pensacola FL 32526	Escambia	North West	32526	850-455-6801
<b>English Brothers Const. Management, Inc</b>	825 W. Hope Dr. Pensacola FL 32534	Escambia	North West	32534	850-477-4897
<b>Maverick Demolition</b>	9565 Holsberry Rd., Pensacola FL 32534	Escambia	North West	32534	850-478-5887
<b>Quality Industries</b>	Pensacola FL 32501	Escambia	North West	32501	850-438-9355
<b>Cantonment Indl. Commercial Roofing, Inc.</b>	P.O Box 82, Cantonment, FL 32533	Escambia	North West	32533	850-968-5561
<b>Glasbrenner Larry Land Clearing</b>	Brooksville FL 34601	Hernando	Central West	34601	352-796-7495
<b>J Hawk Clearing</b>	Brooksville FL 34601	Hernando	Central West	34601	352-799-8303
<b>Jackson Bradley II</b>	Spring Hill FL 34606	Hernando	Central West	34606	352-683-3972
<b>Sand Land of Florida Enterprises</b>	5920 N. Florida Ave., Hernando FL 34442	Hernando	Central West	34442	352-489-6912
<b>Spoffrod Stage, Inc.</b>	P.O Box 1006, Lake Placid FL 33862	HighLands	Central	33862	863-465-6881
<b>A-Team Demolition Salvage</b>	Tampa, FL 33602	Hillsborough	Central West	33602	813-909-8888
<b>Beasley &amp; Sons, Inc.</b>	4922 N. 56th St., Tampa FL 33610	Hillsborough	Central West	33610	813-626-0978
<b>Beasley &amp; Sons Wrecking Company</b>	4922 N. 56th St., Tampa FL 33610	Hillsborough	Central West	33610	813-626-0978
<b>Big T Concrete Cutting</b>	11266 W. Hillsborough Ave., Suite #173, Tampa	Hillsborough	Central West	33635	813-251-6552
<b>Cothrns Bobcat Service, Inc.</b>	12780 Dr. Martin Luther King, Tampa FL	Hillsborough	Central West	33605	813-685-4590

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<b>D &amp; L Demolition Co., Inc.</b>	18209 30th St., Tampa, FL	Hillsborough	Central West	33607	813-948-3366
<b>Dore &amp; Associates Contracting, Inc.</b>	1715 E. Fowler Ave. Ste. 217 Tampa FL 33612	Hillsborough	Central West	33612	813-989-1092
<b>Eagle Demolition &amp; Environmental Services</b>	Tampa, FL 33602	Hillsborough	Central West	33602	813-677-2826
<b>Kimmins Contracting Corp.</b>	1501 2nd Ave., Tampa FL 33605	Hillsborough	Central West	33605	813-248-3878
<b>Standard Demolition Corporation</b>	1607 43rd St. North, Tampa FL 33605	Hillsborough	Central West	33605	813-626-6552
<b>True Line Coring and Cutting</b>	6014 W. Waters Ave., Tampa, FL 33634	Hillsborough	Central West	33634	813-885-4401
<b>D &amp; L Demolition Co. Inc.</b>	P.O. Box 1693, Lutz, FL	Hillsborough	Central West	33549	813-948-3366
<b>WW Hauling &amp; Bobcat Service</b>	9917 Timmons Rd., Thonotosassa FL 33592	Hillsborough	Central West	33592	813-986-7092
<b>Youngs, George, Contracting, Inc.</b>	6415 Hwy. 41 S., Ruskin FL 33570	Hillsborough	Central West	33570	813-645-0177
<b>Ashley Demolition</b>	Vero Beach FL 32960	Indian River	Central East	32960	772-562-0858
<b>Fischer &amp; Sons</b>	10729 US Highway 1, Sebastian FL 32958	Indian River	Central East	32958	772-589-3159
<b>Cochran's Excavating</b>	801 S. Dixie Ave. Fruitland Park FL 34731	Lake	Central	34731	352-365-1205
<b>Marty Norman &amp; Company, Inc.</b>	24334 Sr. 46, Mount Dora FL 32757	Lake	Central	32757	352-735-0156
<b>Welders Fill Dirt</b>	13729 County Road 448, Taveres FL 32778	Lake	Central	32778	352-343-3408
<b>Wildman Demolitions</b>	2766 E. Orange ave., Eustis FL 32726	Lake	Central	32726	321-689-2809
<b>Abash Enterprises, Inc.</b>	P.O. Box 51246, Fort Myers FL 33994	Lee	South West	33994	239-693-8003
<b>Ability Construction</b>	1345 Old Pondella Rd., Fort Myers FL 33903	Lee	South West	33903	941-574-8001
<b>Accurate Concrete Cutting</b>	1345 Old Pondella Rd., Fort Myers FL 33903	Lee	South West	33903	239-574-8001
<b>Barker, John</b>	7400 Nalle Grade Rd., North Fort Myers	Lee	South West	33917	239-281-8079
<b>Big T Concrete Cutting</b>	Fort Myers FL 33901	Lee	South West	33901	239-332-1599
<b>Bobo Express, Inc.</b>	Fort Myers FL 33901	Lee	South West	33901	239-850-3062
<b>C &amp; Sons Corp.</b>	P.O. Box 2668, Fort Myers FL 33902	Lee	South West	33902	239-936-7277
<b>Commercial Construction</b>	6141 Hamilton Dr. Fort Myers FL. 33905	Lee	South West	33905	239-693-1223
<b>Cougar Cutting, Inc.</b>	6391 Arc Way, Fort Myers FL 33912	Lee	South West	33912	239-275-9334
<b>Deans Tree &amp; Demolition Service</b>	Fort Myers FL 33901	Lee	South West	33901	239-466-1617
<b>Hurricane Tree &amp; Demolition service</b>	North Fort Myers FL	Lee	South West	33912	239-543-9406
<b>Mathews Trucking Co.</b>	16241 Pine Ridge Rd., Fort Myers FL 33917	Lee	South West	33917	239-466-6006
<b>Pratt Harold Paving &amp; Sealcoating</b>	2242 Bruner Ln., Fort Myers FL 33912	Lee	South West	33912	239-489-0111
<b>Southwest Builders, Inc.</b>	5150 Jackson Rd., Fort Myers FL 33905	Lee	South West	33905	239-693-1533
<b>Treasure Coast Land Clearing, Inc.</b>	201 Campbell Rd. Fort Pierce FL 34945	Lee	South West	34945	772-466-7290
<b>Project Advantage</b>	1056 N.E Pine Island Rd. Unit M, Cape Coral	Lee	South West	33909	239-470-9119
<b>Hurricane Tree &amp; Demolition service</b>	Bokeelia FL	Lee	South West	33922	239-283-2086

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<b>Thiel Land Clearing &amp; Fill</b>	P.O Box 1703, Bonita Springs, FL 34133	Lee	South West	34133	239-992-5619
<b>Great Southern Demolition, Inc.</b>	4435 Entrepot Blvd. P.O Box 5985, Tallahassee	Leon	North Central	32310	850-422-3366
<b>Quicks Heavy Equipment</b>	Tallahassee, FL 32301	Leon	North Central	32301	850-545-7105
<b>Rodman Services, Inc.</b>	P.O. Box 180007, Tallahassee, FL 32318	Leon	North Central	32318	850-443-3745
<b>Thompson, B.R., Construction, Inc.</b>	9433 Buck Haven Trl. , Tallahassee, FL 32312	Leon	North Central	32312	850-668-0714
<b>Absolute Demolition, Inc.</b>	1872 Mills St., Tallahassee, FL 32301	Leon	North Central	32301	850-575-3586
<b>Absolute Demolition, Inc.</b>	Tallahassee, FL 32301	Leon	North Central	32301	850-556-0566
<b>All About Concrete</b>	Tallahassee, FL 32301	Leon	North Central	32301	850-878-1068
<b>A to Z Hauling</b>	4212 34th Ave. E., Bradenton, FL 32080	Manatee	Central East	32080	941-746-6315
<b>DGY Demolition &amp; Contracting, Inc.</b>	3308 14th Ave. West, Brandenton, FL 34205	Manatee	Central East	34205	941-747-3398
<b>Forristall Enterprises, Inc.</b>	3404 17th St. E., Palmett, FL 34221	Manatee	Central East	34221	941-729-8150
<b>Gary's Hauling, Inc.</b>	Bradenton, FL 34221	Manatee	Central East	34221	941-747-2539
<b>Light Hauling-Heavy Hauling</b>	6419 4th Ave N.E., Bradenton, FL 34208	Manatee	Central East	34208	941-748-3443
<b>Robert E Lee, Inc.</b>	5911 17th St. East, Bradenton, FL 34203	Manatee	Central East	34203	941-758-1240
<b>Ultrabuilt, Inc.</b>	Brandenton, FL 34201	Manatee	Central East	34201	941-758-1240
<b>A &amp; Trucking &amp; Excavating</b>	2028 N.W. 35th St., Ocala, FL 34475	Marion	Central	34475	352-351-2042
<b>Alvins Backhoe Septic Service &amp; Well Drilling</b>	Ocala FL	Marion	Central	34471	352-236-1352
<b>Penoyer Robert Demolition</b>	6167 S.E. 118th Pl. Belleview FL 34420	Marion	Central	34420	352-245-1487
<b>Bauer, Robert, Inc.</b>	P.O Box 2758, Belleview FL 34421	Marion	Central	34421	352-245-5037
<b>Cochran's Excavating</b>	Ocala FL	Marion	Central	34475	352-629-8188
<b>A &amp; P Demolition Contractors</b>	5505 SE Ault Ave., Stuart, FL 34997	Martin	South East	34997	772-283-2592
<b>Als Exacavating</b>	Stuart FL	Martin	South East	34994	772-283-2592
<b>Ashley Demolition</b>	Stuart FL 34994	Martin	South East	34994	772-283-9771
<b>Ashley Demolition</b>	Stuart FL 34994	Martin	South East	34994	561-283-9771
<b>Evergreen Land Services, Inc.</b>	704 N.W. Buck Hendry Way, Stuart FL 34994	Martin	South East	34994	772-692-2040
<b>All Counties Recycling &amp; Waste Processing, Inc.</b>	300 Atlantic Dr. Key Largo FL	Monroe	South East	33037	305-451-1123
<b>B C Enterprises of the Keys</b>	300 Atlantic Dr. Key Largo FL	Monroe	South East	33037	305-451-6424
<b>Bounty Fisheries Ltd.</b>	5300 MacDonald Ave. Key West FL 33040	Monroe	South East	33040	305-296-2930
<b>Glasbrenner, Sonny, Inc.</b>	6409 123rd Ave. Largo FL	Monroe	South East	33037	727-536-6607
<b>Overseas Trailer Park</b>	5300 MacDonald Ave. Key West FL 33040	Monroe	South East	33040	305-269-2930
<b>Overseas Trucking &amp; Bobcat, Inc.</b>	Key Largo FL 33037	Monroe	South East	33037	305-451-0950
<b>Teppino's, Inc.</b>	P.O. Box 787, Key West FL 33041	Monroe	South East	33041	305-296-5606

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<b>Terra Excavating, Inc.</b>	13400 One St., Largo FL 33774	Monroe	South East	33774	727-581-1598
<b>Toppinos, Inc.</b>	U.S. 1 on Key West FL 33040	Monroe	South East	33040	305-296-5606
<b>Vanyo Excavation</b>	Key West FL 33040	Monroe	South East	33040	305-296-2930
<b>Vernon's Tracter Service</b>	6676 114th Ave., Largo FL 33773	Monroe	South East	33773	727-545-5978
<b>Big UM Land Clearing and Tree Service</b>	Fernandina Beach FL 32034	Nassau	North East	32034	904-261-5465
<b>First Coast Demolition</b>	P.O. Box 1899, Callahan FL 32011	Nassau	North East	32011	904-838-8044
<b>Myers Tractor Service, Inc.</b>	2424 Russell Rd., Fernandina Beach	Nassau	North East	32034	904-261-3902
<b>Sanhill Recycle Center</b>	2424 Russell Rd., Fernandina Beach	Nassau	North East	32034	904-225-2801
<b>B &amp; B Construction</b>	P.O. Box 759, Apopka, FL 32704	Orange	Central	32704	407-889-3800
<b>Masco Enterprises</b>	2138 Palm Vista Dr., Apopka, FL 32712	Orange	Central	32712	407-880-4727
<b>Smith Brithers Land Clearing, Inc.</b>	55 E. 6th St., Apopka, FL 32703	Orange	Central	32703	407-884-8585
<b>Cat &amp; I, Inc.</b>	17304 Phil C. Peters Rd., Winter Garden	Orange	Central	34787	407-654-7574
<b>CCL C &amp; C Land Clearing, Inc.</b>	Central Fl, Winter, FL 34787	Orange	Central	34787	407-656-5664
<b>Fitzgerald Construction Co.</b>	174 Semoran Commerce Pl., Apopka FL 32703	Orange	Central	32703	407-889-9400
<b>Hancock Robert Trucking</b>	150 Bowness Rd. Ocoee FL 34761	Orange	Central	34761	407-656-4414
<b>HB Walker, Inc.</b>	Orlando FL 32801	Orange	Central	32801	407-299-4126
<b>Housam, Robert E.</b>	Apopka FL	Orange	Central	32704	407-889-3800
<b>Carols Ceramics</b>	4111 N. Hwy. 441 Zellwood FL 32712	Orange	Central	32712	352-383-1945
<b>Amazing Apples Construction Svcs, Inc.</b>	P.O Box 3243, Winter Park FL 32790	Orange	Central	32790	407-332-4351
<b>Best Construction Contractors</b>	Oralndo FL	Orange	Central	32817	407-290-0718
<b>Big T Equipment</b>	Orlando FL 32801	Orange	Central	32801	407-851-0100
<b>Bob Excavating</b>	309 E. Pierce Ave., Orlando FL	Orange	Central	32808	407-855-2349
<b>C L Green Hauling &amp; Excavating</b>	11500 Judge Ave. Orlando FL 32817	Orange	Central	32817	407-281-8562
<b>Central Environmental Services. Inc.</b>	3210 Friendly Ave Orlando FL 32808	Orange	Central	32808	407-295-7005
<b>Chapman Demolition Inc.</b>	1150 Louisiana Ave., Winter Park FL 32792	Orange	Central	32792	407-679-1771
<b>Concrete Cutting Demolition &amp; Excavating</b>	Orlando FL 32707	Orange	Central	32707	407-851-0100
<b>Demotech, LLC</b>	3500 Alorna Ave. Suite F-9, Winter Park	Orange	Central	32792	407-699-8769
<b>Global Demolition</b>	P.O Box 547862, Orlando FL 32854	Orange	Central	32854	407-422-4768
<b>H B Walker, Inc.</b>	2895 Mercy, Orlando FL 32808	Orange	Central	32808	407-299-4126
<b>Handyman Hauling Landscape Contractor</b>	3150 36th St. Orlando FL 32839	Orange	Central	32839	407246-6363
<b>Johns land Clearing &amp; Excavating</b>	23143 Fort Christmas Rd., Orlando	Orange	Central	32801	407-568-1575
<b>L &amp; L Demolition &amp; Salvage, Inc.</b>	5500 Old Winter Garden Rd., Orlando	Orange	Central	32811	407-259-0875

<b>Company Name</b>	<b>Address</b>	<b>County</b>	<b>Area</b>	<b>Zip</b>	<b>Phone</b>
<b>Motor City Wrecking, Inc.</b>	Winter Park FL	Orange	Central	32792	407-261-1314
<b>Pece of Mind</b>	18490 E. Colonial Dr., Orlando FL 32820	Orange	Central	32820	407-568-3456
<b>Set Materials, Inc.</b>	800 Hull Rd., Orlando Beach FL 32174	Orange	Central	32174	386-788-4581
<b>Walker, H.B., Inc.</b>	2895 Mercy Drive, Orlando FL 32808	Orange	Central	32808	407-299-4126
<b>Wiliams Contracting</b>	1522 W. Princeton St., Orlando FL 32804	Orange	Central	32804	407-422-9977
<b>Wiliams Contraction &amp; Engineering Group</b>	2241 Lake Vilma Dr. Orlando FL	Orange	Central	32839	407-292-2818
<b>All Professional Services Co.</b>	811 Sawdust Trail, Kissimmee FL 34744	Osceola	Central	34744	407-847-5822
<b>All County Bobcat</b>	Jupiter, FL 33458	Palm Beach	South East	33458	561-748-4747
<b>All Phase Environment, Inc.</b>	215 North Federal Highway Boca Raton	Palm Beach	South East	33432	561-620-8222
<b>Almazan Land Development Inc.</b>	357 Kelly Dr. West Palm Beach FL	Palm Beach	South East	33416	561-793-1712
<b>American Cutting &amp; Drilling Co. Inc.</b>	Boca Raton FL	Palm Beach	South East	33432	561-368-3050
<b>American Cutting &amp; Drilling Co. Inc.</b>	West Palm Beach FL 33401	Palm Beach	South East	33401	561-832-8777
<b>Brain Gard Cutting &amp; Demolition</b>	Jupiter, FL 33458	Palm Beach	South East	33458	561-744-1740
<b>Cushing Demolition</b>	8210 8th Rd. N., West Palm Beach, FL 33411	Palm Beach	South East	33411	561-793-6173
<b>Cushing Demolition Co.</b>	8210 8th Rd. N., West Palm Beach, FL	Palm Beach	South East	33411	561-793-6173
<b>Palmwood Corporation Inc. Bldg. Contractors</b>	301 W. 11th St., West Palm Beach, FL 33404	Palm Beach	South East	33404	561-844-8740
<b>Wildcat</b>	West Palm Beach, FL 33401	Palm Beach	South East	33401	561-357-5505
<b>Wrecking Crew</b>	528 16th St. West Palm Beach FL 33407	Palm Beach	South East	33407	561-655-1022
<b>Big T Bobcat</b>	Boynton Beach FL 33436	Palm Beach	South East	33436	561-737-4436
<b>Big T Demolition Contractors</b>	Boynton Beach FL 33435	Palm Beach	South East	33435	561-737-4436
<b>King Kamren Industries, Inc.</b>	513 N. Federal Hwy., Boynton Beach	Palm Beach	South East	33462	561-502-1052
<b>F G E, Inc.</b>	1204 Pope Lane, Lake Worth FL 33460	Palm Beach	South East	33460	561-588-7724
<b>Optimum Services, Inc.</b>	5700 Lake Worth Rd., Ste. 305, Greenacres	Palm Beach	South East	33463	561-478-2797
<b>Southeast Contracting Services. Inc.</b>	11620 Bald Cypress Ln., Lake Worth	Palm Beach	South East	33413	561-640-7422
<b>Glasbrenner Ron Land Clearing</b>	12032 Bali Ave., New Port Richey FL 34654	Pasco	Central West	34654	727-856-2206
<b>Beuten Industries</b>	11602 Tarpon Springs Rd. Odessa FL 33556	Pasco	Central West	33556	813-926-1028
<b>Ces Croos Environmental Services, Inc.</b>	39646 Fig Ave. Crystal Springs FL 33524	Pasco	Central West	33524	813-783-1688
<b>Cross Construction Company, Inc.</b>	P.P Box 7106, Wesley Chapel FL 33544	Pasco	Central West	33544	813-973-4191
<b>Cross Enviromental Services/Simpson &amp; Assoc.</b>	39646 Fig St. Crystal Springs FL 33524	Pasco	Central West	33524	813-783-1688
<b>A-Team Demolition Salvage</b>	Saint Petersburg, FL 33549	Pinellas	Central West	33549	727-822-5999
<b>CST Environmental, Inc.</b>	8401 Dr. Martin Luther King St. N., Ste. 500, Saint Petersburg	Pinellas	Central West	33702	727-570-8600
<b>Murphy Construction of Pinellas, Inc.</b>	3883 46th Ave. South, St, Petersburg	Pinellas	Central West	33711	727-430-6248



<b>Company Name</b>	<b>Address</b>	<b>County</b>	<b>Area</b>	<b>Zip</b>	<b>Phone</b>
<b>H &amp; H Fergusons' Contracting, Inc.</b>	10534 66th St. N Pinellas Park FL 33782	Pinellas	Central West	33782	727-546-1450
<b>Trevena, E.L., Inc.</b>	P.O Box 917, Pinellas Park FL 33780	Pinellas	Central West	33780	727-586-2884
<b>B-Z Hauling &amp; Excavating</b>	1010 Harbor Lake Dr. Safety Harbor FL 34695	Pinellas	Central West	34695	727-443-7250
<b>Glasbrenner, Sonny, Inc.</b>	3565 126th Ave. N. Clearwater FL 33762	Pinellas	Central West	33762	727-573-1110
<b>Howard Jimmies Demolition Contractors Inc.</b>	609 Seminole St. Clearwater FL 33755	Pinellas	Central West	33755	727-443-1448
<b>Better Than Dirt</b>	1716 Douglas Ave., Dunedin FL 34698	Pinellas	Central West	34698	727-733-3888
<b>Goodman land Clearing &amp; Excavating, Inc.</b>	Lake Wales FL	Polk	Central	33853	863-638-3364
<b>King Trucking &amp; Excavating</b>	Haines City FL 33844	Polk	Central	33844	863-422-2258
<b>Trans-Con, Inc.</b>	P.O Box 1605, Lakeland FL 33802	Polk	Central	33802	863-687-6095
<b>Samuel B Fennell Excavating</b>	116 East Lake Ave. Auburndale FL 33823	Polk	Central	33823	863-967-4792
<b>Strickland Construction Roll-Off Container Ser.</b>	7300 Crill Ave., Palatka FL	Putnam	North East	33178	386-328-9898
<b>West River Road C &amp; D Disposal</b>	178 W. River Rd. Palatka FL 32177	Putnam	North East	32177	386-325-1684
<b>B P Enterprises</b>	1204 Panferio Dr., Gulf Breeze FL 32533	Santa Rosa	North West	32533	850-934-8303
<b>Joiner Fill Dirt, Inc.</b>	Milton FL 32583	Santa Rosa	North West	32583	850-623-5062
<b>R &amp; D Tracker Service, Inc.</b>	Santa Rosa Beach FL 32459	Santa Rosa	North West	32459	850-231-4696
<b>Abbotts Back-Hoe Services, Inc.</b>	Sarasota FL	Sarasota	Central West	34230	941-922-3215
<b>Adi Demolition &amp; Landscaping</b>	Sarasota FL	Sarasota	Central West	34230	941-922-6822
<b>Bontrager Hauling</b>	Sarasota FL	Sarasota	Central West	34230	941-371-8743
<b>SEI Scarpinato Enterprises, Inc.</b>	Sarasota FL 34240	Sarasota	Central West	34240	941-371-7450
<b>Abbotts Back-Hoe Services, Inc.</b>	3508 Laurel Rd. E. Nokomis FL	Sarasota	Central West	34275	941-486-8137
<b>Parks, Timothy, Construction, Inc.</b>	7299 Beardsley St., Englewood FL 34224	Sarasota	Central West	34224	941-460-9683
<b>R L Tayer, A61, Inc.</b>	2901 Avenue of the Americas, Englewood	Sarasota	Central West	34224	941-474-3588
<b>Venice Construction Cleanup</b>	375 Scott St. Nokomis FL 34275	Sarasota	Central West	34275	941-488-9888
<b>B &amp; B Construction</b>	1270 Belle Ave., Winter Springs FL	Seminole	Central	32708	407-834-0038
<b>Bennett Construction</b>	249 Sunnyside Rd., Casselberry FL	Seminole	Central	32707	407-644-0330
<b>Ainsworth Demolition Services</b>	P.O. Box 978, Geneva FL 32732	Seminole	Central	32732	407-349-2120
<b>Masters Land Clearing</b>	Saint Augustine FL 32084	St. Johns	North East	32084	904-824-4548
<b>Tomoka Salvage</b>	671 S. Holmes Blvd. Saint Augustine FL 32084	St. Johns	North East	32084	904-824-6379
<b>Ashley Demolition</b>	11005 W. Midway Rd., Fort Pierce, FL 34945	St. Lucie	Central East	34945	772-461-4483
<b>Ashley Land Clearing</b>	11005 W. Midway Rd. Fort Pierce FL 34945	St. Lucie	Central East	34945	561461-4483
<b>Oconnell John</b>	11005 W. Midway Rd., Fort Pierce, FL 34945	St. Lucie	Central East	34945	772-461-4483
<b>Live Oak Construction &amp; Demo. Debris Facility</b>	6897 County Rd. 795, Live Oak FL 32060	Suwannee	North Central	32060	386-208-8677

<b>Company Name</b>	<b>Address</b>	<b>County</b>	<b>Area</b>	<b>Zip</b>	<b>Phone</b>
<b>Stapleton Contracting</b>	10856 155th Loop, Live Oak FL	Suwannee	North Central	32060	386-364-5505
<b>Shadd Enerprise's</b>	P.O Box 506, Lake Butler FL 34240	Union	North Central	34240	386-496-3989
<b>Art's Land Clearing &amp; Demolition</b>	1395 Reed Canal Rd., Daytona Beach FL	Volusia	Central East	32115	386-756-2422
<b>Cone Darrell</b>	2040 Old Daytona Rd., Daytona Beach FL	Volusia	Central East	32115	386-253-8167
<b>Halifax Wrecking Co.</b>	504 Linve Oak Ave., Daytona Beach FL 32114	Volusia	Central East	32114	386-253-2790
<b>O M C Demolition</b>	1911 Frank Pl., South Daytona FL 32119	Volusia	Central East	32119	386-304-6219
<b>Yancey's Land Clearing, Inc.</b>	2455 Tomoka Farms Rd., Daytona Beach	Volusia	Central East	32128	386-767-5764
<b>Central Florida Bobcat Service</b>	1018 S. Nova Rd., Ormond Beach FL	Volusia	Central East	32174	386-671-6995
<b>ABC Demolition</b>	P.O. Box 530457, Debary FL 32753	Volusia	Central East	32753	386-668-9911
<b>Chip's Dozer Service</b>	800 Hull Rd., Ormond Beach FL 32124	Volusia	Central East	32124	386-677-4133
<b>Smith Development Company</b>	Paxton FL	Walton	North West	32538	850-834-2045
<b>Boone Charles, Jr., General Contractor</b>	King City FL 32024			32024	386-755-2298

## APPENDIX C: Updated List of Mobile Home Movers in Florida

<b>NAME</b>	<b>Address</b>	<b>County</b>	<b>Area</b>	<b>ZIP</b>	<b>Phone</b>
<b>AAA Mobile Home Transport</b>	7419 Northwest 127th Place, Alachua,	Alachua	North Central	32615	904-462-2998
<b>Central Mobile Home Service</b>	11924 NW 39 Avenue, Gainesville, FL 32606	Alachua	North Central	32608	352-332-7050
<b>Chabot Development</b>	18833 NE 21st ST. Gainesville	Alachua	North Central	32609	352-485-1082
<b>Chamblee Mobile Home Inc.</b>	4905 NE 240th Terr. Melrose	Alachua	North Central	32666	352-475-1171
<b>Cheyenne Mobile Home Transport</b>	Alachua, FL 32615	Alachua	North Central	32615	904-462-2538
<b>Gainesville Transport Inc.</b>	12801 Northwest 202nd Street, Alachua	Alachua	North Central	32615	904-462-2115
<b>Green &amp; Arnold Mobile Home Insurance</b>	5318-A SW 91st Terrace, Gainesville, FL 32608	Alachua	North Central	32608	352-271-8888
<b>H &amp; R Mobile Home Towing</b>	Highway 337, Newberry, FL 32668	Alachua	North Central	32669	352-472-3734
<b>Carey's Mobile Homes Towing</b>	Jefferson Avenue, Glen St Mary, FL 32040	Baker	North East	32040	904-259-2512
<b>Conrads Mobile Homes</b>	5428 E 15th St Panama City	Bay	North West	32404	850-763-6005
<b>D &amp; R Mobile Home Transport</b>	1223 West 12th Street, Panama City, FL 32401	Bay	North West	32401	850-747-8504
<b>Dan's Mobile Home Service</b>	Tolar Rd. Panama City	Bay	North West	32402	850-442-9245
<b>Five Star Mobile Home Movers</b>	Southport, FL 32408	Bay	North West	32409	850-271-8346
<b>Heath Enterprises Inc.</b>	2325 E. 11th St. Panama City	Bay	North West	32401	850-785-5114
<b>J CS Mobile Homes Moving</b>	2536 East 21st Plaza, Panama City, FL 32405	Bay	North West	32405	850-769-8651
<b>Scott Mobile Home Service</b>	2133 Hentz Drive, Panama City, FL 32405	Bay	North West	32405	850-769-6392
<b>Stones Mobile Homes</b>	1607 Alaska Avenue, Lynn Haven, FL 32444	Bay	North West	32444	850-265-0418
<b>American Eagle Transport</b>	10591 U.S. HWY 301 S. Hampton	Bradford	North Central	32044	352-468-1183
<b>Double Wide Home Center</b>	Highway 100 W. Starke	Bradford	North Central	32091	904-964-8222
<b>Olin's Mobile Home Setup</b>	RT 4 BOX 35 Starke	Bradford	North Central	32091	904-923-1804
<b>AAA Mobile Home Movers</b>	4840 Lake Ontario Drive, Cocoa, FL 32926	Brevard	Central East	32926	407-636-0767
<b>Brown Mobile Homes Movers</b>	2245 East Jay Jay Road, Titusville, FL 32796	Brevard	Central East	32754	407-268-3718
<b>Kens Mobile Home Service</b>	5922 Cedar Lake Drive, Cocoa, FL 32927	Brevard	Central East	32927	407-632-2603
<b>B &amp; C Mobile Home Service, Inc.</b>	13561 S.W. 6th Court, Davie, FL 33325	Broward	Central East	33325	954-452-9534
<b>B0bby Deedrick Mobile Home</b>	5630 S.W 36th Ct. Ft. Lauderdale	Broward	Central East	33314	954-584-7306
<b>Barrett Mobile Home Transport</b>	4231 Northeast 22nd Avenue, Lighthouse Point	Broward	Central East	33064	561-967-3936
<b>Blanchards Mobile Home Removal &amp; Transport, Inc.</b>	3441 N. 72nd. Way Hollywood	Broward	Central East	33024	
<b>LDL Enterprises</b>	1848 NW 22nd St.	Broward	Central East	33069	954-979-5340
<b>Mark Jacksons Mobile Home Ser.</b>	9039 Southwest 54th Place, Cooper City	Broward	Central East	33328	954-680-6912
<b>C &amp; T Mobile Home Movers</b>	Ashley Shiver Road, Blountstown, FL 32424	Calhoun	North West	32424	850-674-5322
<b>CTB Enterprises, Inc. Air Conditioning, Roofing and Electrical</b>	23058 Harborview Rd., Port Charlotte	Charlotte	South West	33980	941-743-7779
<b>M &amp; H Service</b>	7037 West Homosassa Trail, Homosassa,	Citrus	Central West	34448	352-628-5641
<b>Reinhard, Earle A</b>	5485 S Lira Pt.	Citrus	Central West	34461	352-628-0490
<b>A Team Mobile Home Movers</b>	4881 Chickpea Street, Middleburg, FL 32068	Clay	North East	32068	904-282-9607
<b>Alternative Services</b>	2506 Querter Horse TRL	Clay	North East	32068	904-282-0371
<b>Big Foot Transporting</b>	227 Aster Avenue, Middleburg, FL 32068	Clay	North East	32068	904-282-6416

<b>NAME</b>	<b>Address</b>	<b>County</b>	<b>Area</b>	<b>ZIP</b>	<b>Phone</b>
<b>Florida Manufactured Home Tow</b>	1791 Kathy Lane, Green Cove Spgs, FL 32043	Clay	North East	32043	904-284-4569
<b>G&amp;D Mobile Home Service</b>	Middleburg	Clay	North East	32043	904-291-7643
<b>S &amp; R Mobile Home Movers</b>	PO Box 274, Green Cove Spgs, FL 32042	Clay	North East	32043	904-284-1827
<b>Chatmans Mobile Home Transport</b>	9241 SW US HWY 27 Fort White	Columbia	North Central	32038	386-719-8267
<b>Columbia Mobile Home Service</b>	RR 1 Box 239B8, Lake City, FL 32055	Columbia	North Central	32055	904-752-4210
<b>Corbett's Mobile Home Supply</b>	255 Pinemont, Lake City, FL 32055	Columbia	North Central	32024	904-752-6221
<b>Norris Mobile Home Movers</b>	Branford Highway, Lake City, FL 32054	Columbia	North Central	32055	904-752-3871
<b>Action Transporting</b>	21825 Southwest 194th Avenue, Miami,	Dade	South East	33170	305-247-1603
<b>Cowboys Mobile Home Services</b>	18495 S DIXIE HIGHWAY	Dade	South East	33157	786-255-3188
<b>Expando Trailr Sales</b>	1600 N.W 119th St. Dade	Dade	South East	33167	305-769-0991
<b>Lees Trailer Service</b>	9158 Southwest 77th Avenue, Miami	Dade	South East	33156	305-274-3353
<b>Manny Timiraos Pilot / Escort</b>	227852 S.W 130 Ct.	Dade	South East	33032	305-257-1974
<b>Southern Mobile Home Service</b>	Highway 684, Arcadia, FL 34265	Desoto	Central West	34266	941-735-2220
<b>All Seasons House &amp; Mobile HM</b>	7332 Shindler Dr. Jacksonville	Duval	North East	32222	904-771-0978
<b>Americas Best Mobile Home</b>	1505 Halsema Rd. Jacksonville	Duval	North East	32220	904-783-0127
<b>Bessent Mobile Home Service</b>	12504 Pulaski Road, Jacksonville, FL 32218	Duval	North East	32218	904-457-9007
<b>C &amp; B Mobile Service</b>	6858 Old Kings Road, Jacksonville, FL 32219	Duval	North East	32219	904-786-5433
<b>Country Boy Mobile Home Service</b>	10757 Old Gainesville Road, Jacksonville	Duval	North East	32234	904-781-2226
<b>Country Boy Mobile Home Ser.</b>	1319 Yellow Water Road, Jacksonville	Duval	North East	32221	904-266-2772
<b>Feagle Mobile Homes Service</b>	7226 Ricker Road, Jacksonville, FL 32244	Duval	North East	32244	904-771-8928
<b>Jabos Mobile Home Service</b>	9841 103rd Street, Jacksonville, FL 32210	Duval	North East	32210	904-786-2543
<b>Johns Guarantee</b>	11802 Dunns Branch Dr. W.	Duval	North East	32218	904-757-1727
<b>JT Local &amp; Long Distance Trans.</b>	7519 Owl Rd.	Duval	North East	32219	904-607-4183
<b>Lee Mobile Home Transporting</b>	2236 Oxbow Road, Jacksonville, FL 32210	Duval	North East	32210	904-781-3080
<b>Perkins Mobile Home Service</b>	6113 Goodman Road, Jacksonville, FL 32244	Duval	North East	32244	904-779-1515
<b>Taylor's Mobile Home Park</b>	3501 Coljean Rd.	Duval	North East	32221	904-783-3294
<b>Walker Mobile Home Towing</b>	5255 Manning Cemetary Rd.	Duval	North East	32234	904-289-9339
<b>AAA Mobile Home Movers</b>	5987 West Bay Point Drive, Pensacola,	Escambia	North West	32507	850-492-0372
<b>B &amp; D Mobile Home Service</b>	650 Benjulyrn Road, Cantonment, FL 32533	Escambia	North West	32533	850-968-1020
<b>Burnham Mobile Home</b>	1400 Highway 29 N. Cantonment	Escambia	North West	32533	850-968-1956
<b>Glass Mobile Home Moving</b>	5509 Glass Drive, Pensacola, FL 32505	Escambia	North West	32505	850-432-7916
<b>Hall Brothers Mobile Home Towing</b>	Highway 47, Trenton, FL 32692	Gilchrist	North Central	32693	352-472-6594
<b>Thomas R Johnson Mobile Home</b>	10800 S.E. 70th Ave.	Gilchrist	North Central	32693	352-472-5934
<b>Local &amp; Out Of State Mobile Home Transporters</b>	204 S.E. 5th St.	Hamilton	North Central	32052	386-792-8462
<b>Central Mobile Setup Inc</b>	2805 Case Road, La Belle, FL 33935	Hendry	North Central	33935	941-675-5000
<b>Southern Movers Mobile Home Service</b>	459 Calhoun Street, La Belle, FL 33935	Hendry	North Central	33935	941-675-4061
<b>Billy Bakers Mobile Home</b>	1414 S Forbes Rd. Plant City	Hillsborough	Central West	33567	813-754-6352

<b>NAME</b>	<b>Address</b>	<b>County</b>	<b>Area</b>	<b>ZIP</b>	<b>Phone</b>
<b>Booth Mobile Home Delivery</b>	3710 Drawdy Road, Plant City, FL 33567	Hillsborough	Central West	33567	813-754-1743
<b>Holcomb Mobile Home Transport</b>	904 Gambit Place, Seffner, FL 33584	Hillsborough	Central West	33584	813-681-6423
<b>Miller Mobile Home Transport</b>	11101 Browning Road, Lithia, FL 33547	Hillsborough	Central West	33547	813-620-1770
<b>Miller Mobile Home Transport</b>	3118 East Keysville Road, Plant City	Hillsborough	Central West	33567	813-737-5262
<b>Robs Mobile Home Moving</b>	11701 North US Highway 301, Thonotosassa	Hillsborough	Central West	33592	813-986-0465
<b>Sunco Industries</b>	Hillsborough	Hillsborough	Central West	33583	813-986-5961
<b>Wheel Estate Transport</b>	3808 US Hwy 92-E, Plant City, FL 33565	Hillsborough	Central West	33565	813-752-1141
<b>Able Transporting</b>	2150 Crovetti Way, Alford, FL 32420	Jackson	North West	32420	850-579-4777
<b>Johnsons Mobile Home Moving</b>	7070 Providence Church Road, Grand Ridge,	Jackson	North West	32442	850-592-5674
<b>Motor Trend Mobile Home Movers</b>	Iowa St. Grand Ridge	Jackson	North West		850-592-8001
<b>Steel Hicks Mobile Home Movers</b>	Alford, FL 32419	Jackson	North West	32420	850-579-4441
<b>Tim Williams Mobile Home Installers</b>	Clyde Street, Mayo, FL 32065	Lafayette	North Central	32066	386-294-3943
<b>Barrett Mobile Home Transport</b>	2500 US Highway 441, Fruitland Park	Lake	Central	34731	352-365-9033
<b>Dawson's Mobile Home Service</b>	24245 Southeast Highway 450, Umatilla,	Lake	Central	32784	352-669-6493
<b>Jims Mobile Home Service</b>	28701 Hibiscus Avenue, Paisley, FL 32767	Lake	Central	32767	352-669-1444
<b>Lennys Mobile Home Moving</b>	Montverde, FL 34755	Lake	Central	34756	407-469-3055
<b>Manufactured Home Service</b>	11150 Moore St. Leesburg	Lake	Central	34756	352-742-4407
<b>Sunshine Transit</b>	17720 N. US Highway 27	Lake	Central	34756	352-2426507
<b>Gulf Coast Mobile Home Service</b>	699 Eland Drive, Fort Myers, FL 33917	Lee	South West	33917	941-997-7576
<b>J &amp; L Contracting</b>	1343 Euclid Avenue, Fort Myers, FL 33917	Lee	South West	33917	941-543-8028
<b>Lee County Mobile Home Service</b>	16070 Oneal Drive, Fort Myers, FL 33903	Lee	South West	33903	941-995-0024
<b>Pres Mobile Home Transporting</b>	6340 Hofstra Court, Fort Myers, FL 33919	Lee	South West	33919	941-481-4510
<b>T &amp; L</b>	7978 McDaniel Dr.	Lee	South West	33917	941-543-6527
<b>Tom Prator House Moving</b>	RR 1 Box 2620, Lee, FL 32058	Lee	South West	32059	850-971-5249
<b>Transit Mobile Home Moving Inc.</b>	5946 Poetry Court, Fort Myers, FL 33903	Lee	South West	33903	941-997-7176
<b>All Mobile Home Service</b>	6046 West Tennessee Street, Tallahassee,	Leon	North Central	32304	850-576-4410
<b>All State Mobile Home Movers</b>	6046 West Tennessee Street, Tallahassee,	Leon	North Central	32304	850-575-5336
<b>Charles Boutwell Service</b>	Blountstown Highway, Tallahassee, FL 32310	Leon	North Central	32310	850-576-6876
<b>Connell Mobile Home Moving</b>	Page Road, Tallahassee, FL 32301	Leon	North Central	32301	850-421-5365
<b>Monroes Mobile Home Service</b>	West Highway 20, Tallahassee, FL 32309	Leon	North Central	32310	850-576-2690
<b>Toole Transport Florida Installers</b>	1166 Comanche Lane	Leon	North Central	32304	850-580-8488
<b>Winns Trailer Moving Service</b>	Blountstown Highway, Tallahassee, FL 32309	Leon	North Central	32310	850-576-1035
<b>Hall Brothers Mobile Home Towing</b>	Highway 345, Chiefland, FL 32625	Levy	North Central	32626	352-493-4906
<b>JLC Mobile Home Transport</b>	20851 N.E. 30th St.	Levy	North Central	32626	352-528-3154
<b>Otis Day Mobile Home Specialty</b>	42 Northwest 4th Street, Williston, FL 32696	Levy	North Central	32696	352-528-2975
<b>Bell Mobile Home Service</b>	Highway 221 Greenville	Madison	North Central	32696	850-948-4914
<b>J &amp; H Homes</b>	1748 N.W 58th Ln. Ocala	Marion	Central	34475	352-351-8153

<b>NAME</b>	<b>Address</b>	<b>County</b>	<b>Area</b>	<b>ZIP</b>	<b>Phone</b>
<b>ABC Transport</b>	10455 S.E. 130th Ln. Ocklawaha	Marion	Central	34473	352-288-1241
<b>Action Transporters</b>	14921 Southwest 4th Avenue, Ocala	Marion	Central	34473	352-307-9102
<b>B &amp; C Mobile Home Service, Inc.</b>	518356 N. Hwy 329, Reddick, FL 32686	Marion	Central	32686	352-591-0507
<b>Bob's Mobile Home Service</b>	2719 Southeast 59th Street, Ocala, FL 34480	Marion	Central	34480	352-368-3856
<b>Classic Transport Inc.</b>	12800 S.E.81st. Ct. Belleview	Marion	Central	34420	352-307-7200
<b>Herb Millers Mobile Home Ser.</b>	4848 Southeast 110th Street, Belleview	Marion	Central	34420	352-245-7126
<b>Jacks Trucking Company</b>	10388 Southeast 50th Avenue, Belleview,	Marion	Central	34420	352-245-3033
<b>Mobile Homes Service, Inc.</b>	1527 N Magnolia Ave., Ocala, FL 34475	Marion	Central	34475	352-732-2407
<b>Moblie Home Service</b>	Ocala	Marion	Central	34482	352-546-2607
<b>Nelson Trucking</b>	4421 West Highway 40, Ocala, FL 34482	Marion	Central	34482	352-732-7660
<b>One Stop Housing Inc.</b>	5400 N.W. 52nd Ave.	Marion	Central	34482	352-351-3143
<b>Pine Manor Concrete Steps</b>	2815 NW Pine Ave., Ocala, FL 34475	Marion	Central	34475	(352) 622-7089
<b>Randy Nichols Mobile Home Exp</b>	12029 Southeast 123rd Avenue, Ocklawaha,	Marion	Central	32179	352-288-6683
<b>Transport Services</b>	12799 Southeast 81st Court, Belleview,	Marion	Central	34420	352-307-8028
<b>Hesters Mobile Home Movers</b>	10444 Southeast Federal Highway, Hobe Sound	Martin	North East	33455	561-546-6986
<b>Lehman Mobile Home Service Inc.</b>	14950 113th Avenue, Largo, FL 33774	Monroe	South East	33774	813-596-9929
<b>Mark Davis Transport</b>	409 South US Highway 17, Yulee, FL 32097	Nassau	North East	32097	904-225-2251
<b>A &amp; A Mobile Home Movers</b>	801 Hilltop Road, Mary Esther, FL 32569	Okaloosa	North West	32569	850-581-1311
<b>R&amp;W Mobile Home Movers</b>	Holt	Okaloosa	North West	32569	850-537-5293
<b>Nick Underwood Mobile Home Ser.</b>	3701 Southeast 18th Terrace, Okeechobee	Okeechobee	Central East	34974	941-763-4120
<b>Stuarts Mobile Home Service</b>	2502 Northwest 42nd Avenue, Okeechobee,	Okeechobee	Central East	34972	941-763-7889
<b>J &amp; S Mobile Homes Inc.</b>	9907 Surrey Ridge Rd.	Orange	Central	32825	407-281-8339
<b>Morrisons Mobile Home Set up</b>	18789 5th Avenue, Orlando, FL 32820	Orange	Central	32820	407-568-0520
<b>Proset Service</b>	1820 Rock Springs Rd	Orange	Central	32820	863-853-5819
<b>Sea Ventures Mobile Home &amp; RV Ser.</b>	P.O.BOX 602	Orange	Central	34761	407-656-9585
<b>M H Tzra Inc</b>	1200 N Central Ave. # 103 Kissimmee	Osceola	Central	34741	407-892-7169
<b>Boyce Mobile Home Service</b>	17372 43rd Road North, Loxahatchee,	Palm Beach	South East	33470	561-798-0160
<b>Dons Mobile Homes</b>	1773 Wisteria Street, West Palm Beach,	Palm Beach	South East	33414	561-753-9853
<b>Ferguson Towing</b>	12065 Lakeshore Dr. Canal Point	Palm Beach	South East	33438	561-924-3310
<b>Labonte Transportion Service</b>	13354 47th Court North, Royal Palm Beach	Palm Beach	South East	33411	561-793-1489
<b>Narramore Trucking</b>	709 Bartow Avenue South, Auburndale,	Palm Beach	South East	33823	941-967-9444
<b>Parker Mobile Home Service Inc.</b>	4865 Dryden Road, West Palm Beach,	Palm Beach	South East	33415	561-684-0030
<b>Buddy's Mobile Home Set Up</b>	1907 Saunders Road, Zephyrhills, FL 33540	Pasco	Central West	33540	813-782-0009
<b>Butterfields</b>	5117 Gall Blvd. Zephyrhills	Pasco	Central West	33541	813-780-7807
<b>EJK Transport</b>	9439 Ogalala, New Port Richey, FL 34654	Pasco	Central West	34654	813-863-7272
<b>Godwins AAA Hauling &amp; Set</b>	35161 State Road 54, Zephyrhills, FL 33541	Pasco	Central West	33541	813-986-3665
<b>Lords Mobile Home Center</b>	16642 US Highway 19	Pasco	Central West	34667	813-869-4903

<b>NAME</b>	<b>Address</b>	<b>County</b>	<b>Area</b>	<b>ZIP</b>	<b>Phone</b>
<b>Mendez Mobile Home Setup</b>	16202 US Highway 19, Hudson, FL 34667	Pasco	Central West	34667	813-862-8194
<b>Service 1st Housing, Inc.</b>	12418 US Hwy 301, Dade City, FL 33525	Pasco	Central West	33525	888-547-3700
<b>All Phase Mobile Home Repair &amp; Ser.</b>	15777 Bolesta Rd., Clearwater, FL 33760	Pinellas	Central West	33710	727-524-6348
<b>Wilhites Transport &amp; Mobile</b>	5636 35th Avenue North, St Petersburg	Pinellas	Central West	33710	813-384-9606
<b>Crystal Lake RV Service &amp; Repair</b>	21127 S Combee Rd., Lakeland, FL 33801	Polk	Central	33801	863-665-5775
<b>B &amp; H Step Transporting</b>	100 Overlook Drive, Winter Haven, FL 33884	Polk	Central	33884	941-324-1294
<b>J R Ventures Inc.</b>	108 Shirley Ct. Winter Haven	Polk	Central	33880	941-293-5175
<b>JLH Mobile Home Service</b>	9695 Saint Clair Road, Haines City, FL 33844	Polk	Central	33844	941-439-2248
<b>LTS Transporting</b>	US Highway 60 E.	Polk	Central	33801	863-676-6582
<b>Pro-Set Services</b>	41234 Durham Drive, Lakeland, FL 33809	Polk	Central	33809	863-604-8500
<b>Quality Care Mobile Home Ser.</b>	1231 Morgan Drive, Lakeland, FL 33801	Polk	Central	33801	941-667-0766
<b>Quality Mobile Home Moving</b>	5536 Christine Road, Lakeland, FL 33810	Polk	Central	33810	941-858-9238
<b>Specialized Mobile Home Repair</b>	837 West Lake Wales Rd N., Lake Wales	Polk	Central	33853	941-676-3371
<b>Statewide Mobile Moving &amp; set</b>	2693 Masterpiece Road, Lake Wales,	Polk	Central	33853	863-676-3451
<b>Vaughans Mobile Home Movers</b>	Allen Road, Mulberry, FL 33859	Polk	Central	33860	941-425-2416
<b>A-L's Mobile Home Towing, Inc.</b>	P.O. Box 343 Bostwick, FL 32007	Putnam	North East	32007	904-325-3056
<b>Hercules Mobile Home Setup</b>	129 River Terrace, East Palatka, FL 32131	Putnam	North East	32131	904-328-8591
<b>Kevin Ward Mobile Home Setup</b>	132 Palmland Ave, Satsuma, FL 32189	Putnam	North East	32189	<a href="tel:386-325-0490">386-325-0490</a>
<b>Allison Mobile Home Service</b>	945 Regency Dr. Pace	Santa Rosa	North West	32571	
<b>King Mobile Home Service Inc.</b>	4082 Windsor Lane, Pace, FL 32571	Santa Rosa	North West	32571	850-994-1321
<b>Leonard Slay Mobile Home Service</b>	7304 Quinn Road, Milton, FL 32583	Santa Rosa	North West	32583	850-623-1345
<b>Paxton Mobile Home Service</b>	119 Spears Street, Milton, FL 32571	Santa Rosa	North West	32571	850-994-8242
<b>Mid-Florida Movers Inc.</b>	509 Sandal Court, Altamonte Springs,	Seminole	Central	32714	407-862-5700
<b>James P MC Gee Mobile Home Moving</b>	5604 State Road 16, St Augustine, FL 32092	St. Johns	North East	32086	904-825-2315
<b>Cypress Underwriters, Inc.</b>	145 NW Central Pak Plaza # 102, Port St. Lucie,	St. Lucie	Central East	34952	561-336-9091
<b>Port St Lucie Movers Inc.</b>	1617 S.E Village Green Drive # 8, Port St Lucie,	St. Lucie	Central East	34952	561-335-9955
<b>Billy Mask &amp; Sons</b>	5769 County Rd. 551 Bushnell	Sumter	Central	33513	352-793-8868
<b>Reliable Mobile Home Set-up</b>	8799 County Road 674, Bushnell, FL 33513	Sumter	Central	33513	352-793-8161
<b>Young &amp; Sons Inc.</b>	3901 County Rd. 331 Bushnell	Sumter	Central	33513	352-793-3660
<b>Stover's Mfg Home Installation</b>	2468 103rd Rd., Live Oak, FL 32060	Suwannee	North Central	32060	386-208-9097
<b>Todds Mobile Home Transport</b>	Lundy Lane, Live Oak, FL 32059	Suwannee	North Central	32060	904-362-7103
<b>J.R.'s Mobile Home Ser. Trans.</b>	Route 4, Box 3260, Lake Butler, FL 32054	Union	North Central	32054	386-496-3687
<b>Tri-State Transport</b>	47th Avenue, Worthington Spgs, FL 32697	Union	North Central	32697	904-496-3540
<b>Allen Baker Construction</b>	1954 Jungle Rd.	Volusia	Central East	32168	904-427-5125
<b>American Mobile Home Service</b>	5818 Alstrum Drive, Daytona Beach, FL 32127	Volusia	Central East	32127	904-767-7047
<b>Collins Manufactured Housing</b>	1061 Bay Drive, New Smyrna Beach, FL 32168	Volusia	Central East	32168	904-427-6355
<b>Petes Mobile Home Service</b>	241 North Tymber Creek Rd, Ormond Beach,	Volusia	Central East	32174	904-672-2953



<b>NAME</b>	<b>Address</b>	<b>County</b>	<b>Area</b>	<b>ZIP</b>	<b>Phone</b>
<b>Rays Mobile Home Service</b>	1069 Wexford Way, Port Orange, FL 32119	Volusia	Central East	32119	904-322-7626
<b>Sunshine Mobile Home &amp; Aluminum Service</b>	704 Hills Blvd., Port Orange, FL 321727	Volusia	Central East	32172	386-760-3806
<b>Gasjin Movers</b>	17046 State Highway 83 N., De Funiak Spgs,	Walton	Central East	32433	850-834-4346
<b>Trumpet Coach Inc.</b>	902 Falling Waters Rd.	Washington	North West	32428	850-638-5511

APPENDIX D: ASBESTOS INSPECTION REPORT

## APPENDIX E: LEAD-BASED PAINT INSPECTION REPORT

## 2.2 FLORIDA MOBILE HOME REPLACEMENT PROGRAM

### EXECUTIVE SUMMARY

For the last few years (including this year) research has focused on different approaches to developing a program to replace generation 1 mobile homes with newer, less vulnerable housing. In Year 1, research focused on demographic analysis of the mobile home population as a whole, and the conception of a series of ideas that could be developed into a replacement program. In Year 2, the focus was strictly on those who lived in pre-1976 mobile homes, and their willingness, or for that matter, their lack of willingness to participate in a program. Year 2 researchers contacted a focused group of those who lived in pre-1976 mobile homes. Findings concluded that this economically marginal and aging population showed little if any desire to upgrade their current home with a newer, less vulnerable home. As a result, researchers were stumped as to how to develop a program that would be supported by those it intends to serve.

Early in the Year 3 research period researchers met with and spoke to stakeholders who had some type of vested interest in mobile homes in Florida. The focus of these discussions was on Zone 2 vs. Zone 3 mobile homes. Mobile homes in Zone 3 counties must meet the strictest wind requirements, while mobile homes in Zone 2 are built to slightly less stringent requirements. The belief, based on conversations with mobile homeowner groups and others associated with manufactured housing, was that Zone 3 mobile homes are not routinely built, and are “prohibitively expensive,” and these differences in cost and availability are negatively impacting the ability of those who own pre-1976 mobile homes to upgrade. If this barrier was down, it was believed that more people would be willing to upgrade their existing mobile homes with newer homes, and particularly those mobile homes owned by mobile home parks and then rented out.

The idea developed that while Zone 2 mobile homes are not the best option, they are the better option as compared to generation 1 mobile homes. Research, then, focused on how this would be possible. However, besides finding out how it would be possible, research also had to confirm that a significant cost difference existed between Zone 2 and Zone 3 mobile homes in order to justify any changes to regulatory statutes.

While it was difficult (nearly impossible) to get sales information from mobile home retailers, the findings highlighted in this report do not support the notion that Zone 2 and Zone 3 mobile homes are prohibitively different in cost. Nor does it support the idea that they are not readily available.

What this research has found is that the majority of mobile homes in Zone 3 (the most vulnerable to hurricane winds) are generation 1 mobile homes. Proportionately more mobile homes are from generation 1 in Zone 3 than in Zone 2. But overall, according to 2000 Census data, there are more than 267,000 occupied pre-1976 mobile homes in the State of Florida. More than 60% of all mobile homes in the 14 Zone 3 counties are generation 1 mobile homes. In effect, the vast majority of the weakest mobile homes are located in the most vulnerable regions in Florida.

The scope of the problem is overwhelming, and cost prohibitive. To replace all vulnerable mobile homes in Florida will cost at a minimum \$3,000 - \$4,000 to move and dismantle each unit. In addition, demographics indicate that this is an economically marginal population that will have little ability to take on additional costs of a mortgage. As such, a conservative estimate of \$25,000/replacement is estimated. Considering both dismantling and replacement, the cost would be a staggering \$7 billion. Even eliminating the \$25,000 replacement cost, the overall cost of dismantling and moving these units would be over \$900 million (As high as \$1.7 billion in 2003 dollars per a study of another unit within the IHRC Team). Even reducing our goals to trying to move and dismantle only 10% of all pre-1976 mobile homes annually, the cost would still be very high.

It appears that a program of replacement may not be socially or economically feasible. Most mobile home retailers/manufacturers offer at the most \$1,000 to \$1,500 in incentives to new buyers, and these incentives tend to be for upgrades, not for the base unit. In addition, the population who lives in these mobile homes are economically marginal and elderly, and have given no indication that they would be even remotely interested in moving out of their current home (even if a new mobile home was offered to them.)

Instead of pursuing a program of replacement, the findings of this report support the notion of pursuing other means of mitigation for these older mobile homes. Research should be pursued to better understand where older mobile homes fail in high winds, and subsequently, affordable mitigation options should be developed and tested in the hopes that damages to older pre-1976 mobile homes can be mitigated through retrofit/upgrading programs.

In addition, it is suggested that a mail survey be given to generation 1 mobile home owners in the hopes to better understand the needs and desires of this population, and their willingness to participate in mitigation programs.

Trying to replace these older mobile homes is a difficult, if not impossible task due to the marginality of the population. From interviewing those who have lived in and replaced their mobile home, it is clear that the process is difficult. The informant describes having to put boxes of her family's belongings in storage in backyard storage sheds for weeks until her new unit was delivered. Two weeks before delivery, all household furnishings had to be put into off site storage leaving only a mattress on the floor for sleeping. It is no wonder that so many indicate they are not willing to participate even when given a new free mobile home. The inconvenience is greater than the need or desire for a new, safer home.

The best option to help those in these older mobile homes is to find affordable ways to mitigate the structures if possible. It is clear however we will have to invest considerably more resources in this endeavor than we have up to now.

## II. SUMMARY OF YEAR 3 GOALS

During the first two years of the Hurricane Loss Reduction Project, researchers examined a variety of issues related to the idea of “recycling” older pre-1976 mobile homes. In fact, a better notion is the idea of replacing older pre-1976 mobile homes with safer less vulnerable housing options. After year one, two distinct issues arose that required further in-depth research. The first issue focused on the actual physical removal and recycling of these older units. The second important issue surrounded more social issues: what alternatives can be offered that would give people resources to move from these vulnerable units.

The second year of the research addressing moving people from vulnerable pre-1976 mobile homes to safer housing alternatives addressed both of the issues discussed above. The focus of the research in Year 3 uses as a foundation the work done in Year 2 mainly addressing the social issues of the problem, and how to synthesize everything into a comprehensive program for replacing the pre-1976 mobile homes in Florida.

The continuing work in Year 3 focuses on section 2 of this year’s research agenda. The pertinent sections are:

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

The effort 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 to carry-out a proposed older mobile home replacement program;
- (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 same.

## **Original Proposed Research**

1. Determine in conjunction with Project PI and the RCMP Advisory Council the best program to pursue. This program could be one not outlined above. In fact, a program may include pieces of each of the four options outlined above. In addition, a program might best be developed in conjunction with other changes being undertaken at different mobile home parks. For example, when mobile home parks are not compliant with zoning laws, they must correct what is wrong in order to fall within any new laws. Taking advantage of these “non-compliance” issues may include replacing mobile homes that were built after 1976.
  - a. Methodology: Researchers from the International Hurricane Center will need to meet with representatives of the mobile home industry to learn under what conditions and at what rate parks fall out of compliance. Information regarding the possibility of changes to state laws must also be researched.
2. Once the components of a program are agreed upon. Research will be undertaken to determine what funding alternatives might be available for a replacement program.
3. The availability of funding sources will ultimately impact the resolution of the complex social issues involved in developing a replacement program. The social issues that exist are not ones that can be eliminated through this program since they are products of social structure. Reducing poverty and increasing household income, for example, cannot be addressed. As such, the only way to eliminate these problems is to offer a replacement program that can meet the needs of these residents. One possibility is to create a program with multiple options – some which can be used by those who are younger, as example, and able and willing to take on the possible expense associated with a newer housing option. Other options can address those who are the most marginal.
  - a. One scenario could be that mobile home manufacturers and homebuilders agree to offer a number of rebates or incentives each year. Additionally, other unrestricted funds are available (perhaps from a fee on registrations). A program of outreach and education can be developed so volunteers can take advantage of the rebates and incentives while the unrestricted funds are used to help those who are most marginal to move into safer housing.



- b. Unfortunately, the problem still remains that even when offered a new mobile home, the majority still report not being interested in the program. The question then remains how to motivate participation. The hope is that the nature of the program itself will help motivate participation.
4. Once a program of recycling is developed that will address issues outlined in section 3 above and the funding issues are researched and developed, all effected stakeholders should have an opportunity to here the details of the program and offer feedback. During Year 2 when homeowners were asked how interested they were in different program options, the details were vague. The hope is that when more specific details are brought into the equation, more constructive feedback will be gathered from not only those who live in pre-1976 mobile homes, but also other stakeholders.

### **Problems with Original Year 3 Idea**

After discussions with Ricardo Alvarez, it appears that the focus of the replacement component of the overall research project needed to be adjusted. The original program options as identified in previous years' research were discussed with a variety of stakeholders, and acknowledged that the social aspect of the ideas were a major problem. As a result, some alternate scenarios were suggested.

One issue that seemed of primary concern focused on the idea of decreasing or eliminating the barriers to upgrading older mobile homes. One of the major barriers appeared to be the strict wind zone restrictions for mobile homes in 14 Florida counties. It was believed that Florida State Building Codes restrict the placement of mobile homes in those counties to only those that meet what had been represented to be prohibitively expensive Wind Zone III restrictions.

As a result, the new emphasis of the research on a mobile home replacement program was to focus on the current statute or regulation requiring all new mobile homes in a county to meet the strictest wind requirement. Research shows there are three wind zones in Florida. For those counties in the highest wind zone, any replacement of older mobile homes with new mobile homes must meet the strictest wind requirement. According to the stakeholders we talked to, mobile homes that meet the strictest requirements for wind Zone 3 are not regularly manufactured, and are much more expensive than those manufactured for Zone 2. Very few, if any, exist on the pre-owned market.

- i. However, there are affordable Zone 2 mobile homes available on the pre-owned market that would be a better alternative to pre-1976 mobile homes.
- ii. Statute doesn't allow these Zone 2 Mobile homes to be brought into Zone 3 locations
- iii. A new focus of this research is to investigate the possibility of changing statute language to allow Zone 2 Mobile Homes to replace pre-1976 mobile homes in Zone 3 Counties.

The result may not be the most wind resistant mobile homes in Zone 3, but considerably better mobile homes would replace those that are known to be particularly vulnerable. Until we better understand this issue, development of a prototype program would be impossible. As research has shown over the last two years, and into this third year, getting a handle on an appropriate program design is very difficult, but a vital step in the overall development of a program that is workable.

Research, then, first focused on the wind zone rule. Once the rule was understood research focused on the difference in cost between zone 2 and zone 3 mobile homes. Only after these two issues are tackled will the focus shift to developing a program of research.

### III. SUMMARY OF PREVIOUS YEARS' FINDINGS

To set the stage for this year's research, it is important to first briefly explain the findings from the previous years, particularly those found last year. The following is a brief review of the important issues that arose during Year 2, and in part, set the foundation for the current year research.

Of critical importance is summary statistics of the demographics of the population that appears to live in pre-1976 mobile homes. Using the data collected during Year 1 of this project we know that the population living in the pre-1976 mobile homes are somewhat marginal.

#### Demographics of Population

- a. Data from surveys done in previous years emphasizes that the population living in pre-1976 mobile homes tend to be older, poorer and more marginal.
- b. The majority of those who live in mobile homes do so because it is the lifestyle they most enjoy.
- c. Most households that live in older mobile homes do not have a mortgage, and the majority never had a mortgage.
- d. More than half of those surveyed who lived in pre-1976 mobile homes indicated that their yearly household income was under \$20,000.
- e. The average age of those who live in pre-1976 mobile homes is over 65 with the most frequently mentioned age of 76.

Keeping these demographics in mind, four program options seemed feasible enough to pursue as possible inclusion in a replacement program. Each option had its pluses and minuses. (For more information on these options see the Project Final Reports for the two previous years) These options were:

- a. Rebate Plan: Program that offers homeowners a \$5,000 rebate for a new mobile home if they agree to join the program
- b. Down Payment Assistance: Program that offers homeowners assistance in having a down payment for a site built home or condominium.
- c. Free Replacement: Program that offers homeowners a new post-1994 mobile home without any additional out of pocket expenses. Because of zoning restrictions, new mobile home might have to go into a different mobile home park.

- d. Banning pre-1976 mobile homes from Florida: Program would make it impossible to buy and sell a pre-1976 mobile home in Florida. Those families currently living in these units would be allowed to stay, but title could not transfer to any one else living in Florida

Realizing that the only way a program could be successful was with support of those who live in the older mobile homes, a random sample of those who answered our survey in Year 1 were asked in Year 2 about their interest in the first three options noted above. Below is a short summary of the important findings:

- a. Each of the different programs (except the banning of pre-76 mobile homes) was outlined to panelists, and then their interest in the program was elicited.
- b. Of the three programs, the most interest was in the replacement program. However, 2.3% were very interested with another 11.6% somewhat interested. About 16% were somewhat interested in the rebate program, but none were very interested.
- c. When panelists were asked what would motivate them to move from their current pre-1976 mobile home, the majority answered that there was nothing that would get them to leave their current home, except “death.”

In fact, the major conclusion of the Year 2 Replacement study was that voluntary programs did not seem to be a viable option and the best option was banning pre-1976 mobile homes in the State of Florida. Unfortunately such a stance is controversial, and seemed to have major implications such as legal challenges and equitable buy-out options.

At the end of Year 2, then, the replacement program seemed to be back at the drawing board. The ultimate problem is that in theory it seems like a good and viable way to get people in safer, less vulnerable housing. However, once the social issues are looked at, the development of a program to account for the nature of the population is difficult.

## **“BETTER, NOT BEST” APPROACH**

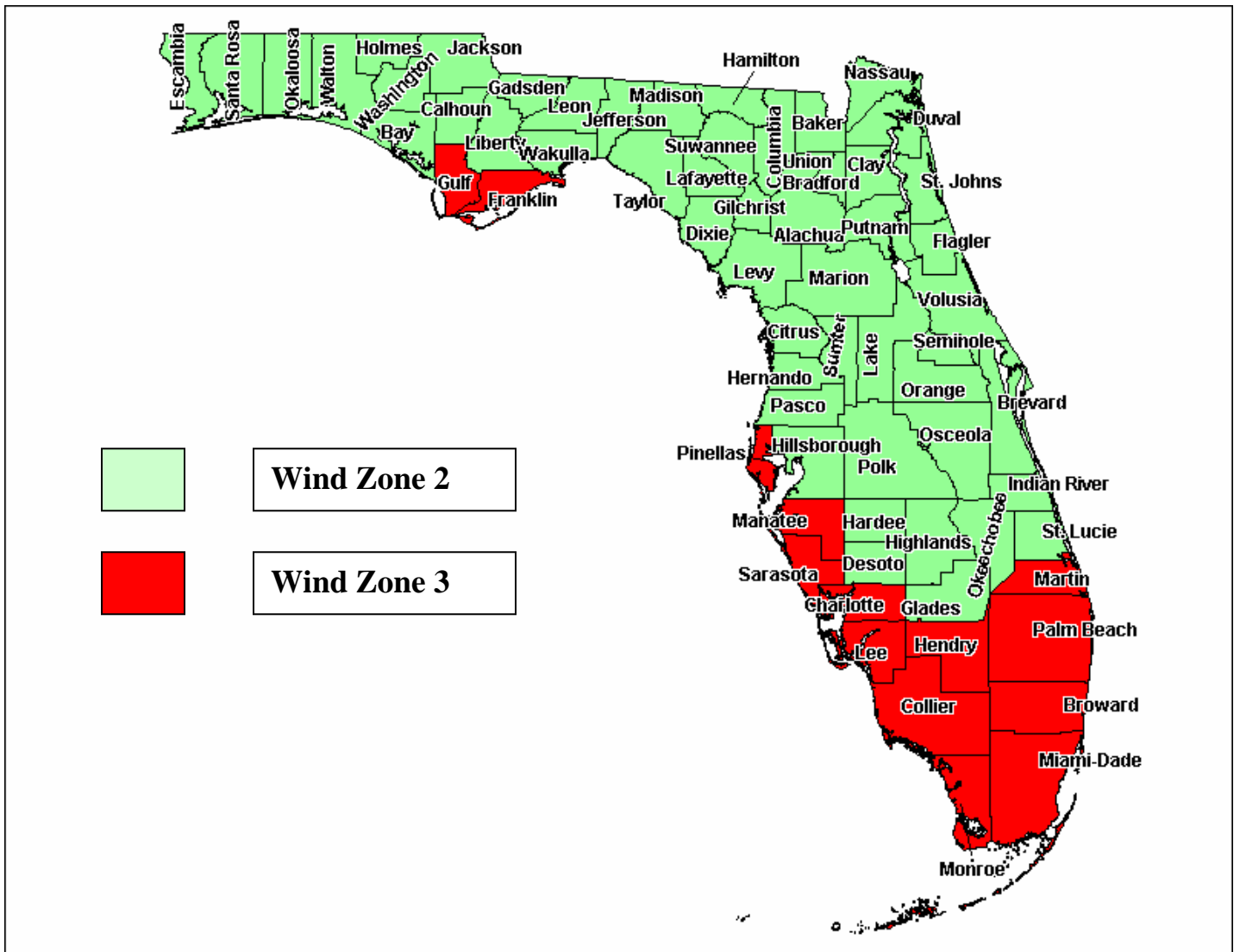
With the overall goal of finding alternate housing for those in the oldest most vulnerable mobile homes that is less vulnerable, and thus leading to less loss in high wind events, after discussions with stakeholders, it was decided that the best approach may not be one that focuses on individual mobile home owners, but rather on barriers that exist that may restrict the upgrading of pre-1976 mobile homes. The most vulnerable counties are the 14 counties with the tightest wind restrictions in manufacturing.

Based on the belief that mobile homes manufactured for zone 3 were considerably more expensive than those mobile homes manufactured for zone 2, the idea was that even though Zone 3 mobile homes are the best for those 14 counties, post-1994 Zone 2 mobile homes would be at least significantly better than the pre-1976 mobile homes. So, while the solution would not be replacing the most vulnerable units with the best alternative, it would be a significantly better alternative. And considering the scope of the problem in these 14 counties, if this one change could reduce some of the barriers for upgrading, then it would be a step in the right direction.

### **Scope of Issue**

Currently 14 counties in Florida are designated Wind Zone 3 counties. For those counties in Wind Zone 3, mobile homes need to be built to withstand stronger wind loads. In Florida, the other 53 counties are designated Wind Zone 2. The map below shows the geographic distribution of wind zone 3 counties in Florida.

Figure 1: Map of Florida Counties by Wind Zone



Using the newly released Census 2000 data, analysis of the data allows us a better understanding of the distribution of generation 1 mobile home throughout Florida.

- i. Of the 14 Zone 3 counties, Pinellas County, with 25,271, has the most occupied generation 1 mobile homes. Even more significant is that of all the occupied mobile home in Pinellas, 72% were built before 1980.
- ii. Six other Zone 3 counties have more than 60% of all occupied mobile homes built before 1980. These counties are: Broward, Manatee, Martin, Monroe, Palm Beach, and Sarasota.

- iii. Of all the Zone 2 counties, Polk County has the most generation I mobile homes with 13,860. Significantly important, however, is that this only represents 30% of all mobile homes in Polk.
- iv. No county in the Zone 2 area has more than half its mobile homes from generation 1. On the other hand, 7 out of 14 counties in Zone III have half or more of their mobile homes from the earliest, most vulnerable generation.
- v. Overall, 58% of all occupied mobile homes in Zone 3 are from generation 1, while 35% of all occupied mobile homes in Zone 2 are the most vulnerable.

The census data analyzed above emphasizes that the highest proportion of the most vulnerable mobile homes based on being built before any HUD standards are in those counties with the highest vulnerability to the effects of hurricanes. This combination makes an already vulnerable situation even worse. While overall more pre-1976 mobile home units are in Zone 2 counties, a higher proportion of pre-1976 mobile homes are in Zone 3 counties.

Census 2000 data analysis also allows for comparisons of Wind Zone 3 data and Wind Zone 2 data to illustrate that those counties in Wind Zone 3 have a proportionately bigger problem in terms of proportion of all mobile homes from generation 1. At the same time, their designation as Wind Zone 3 counties makes it clear that these mobile homes are likewise the most physically vulnerable to the effects of high wind events such as hurricanes.

Figure 2: Mobile Home Generation by Wind Zone

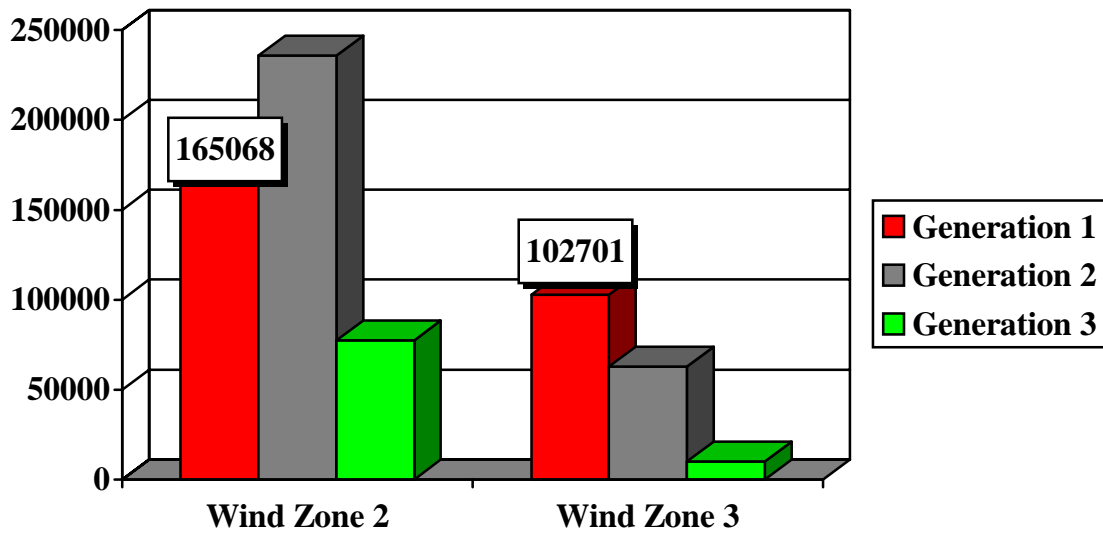


Figure 2 illustrates the raw number distribution of mobile homes based on Census 2000 data. In Wind Zone 2, the majority of mobile homes are generation 2 (built between 1977 and 1994) mobile homes, whereas in Wind Zone 3, the majority of mobile homes are generation 1 mobile homes. Again, there are clearly more mobile homes in Wind Zone 2 because Wind Zone 2 includes 53 counties as compared to 14 Wind Zone 3 counties

Figure 3: Proportion of All Occupied Mobile Homes by Generation and Wind Zone

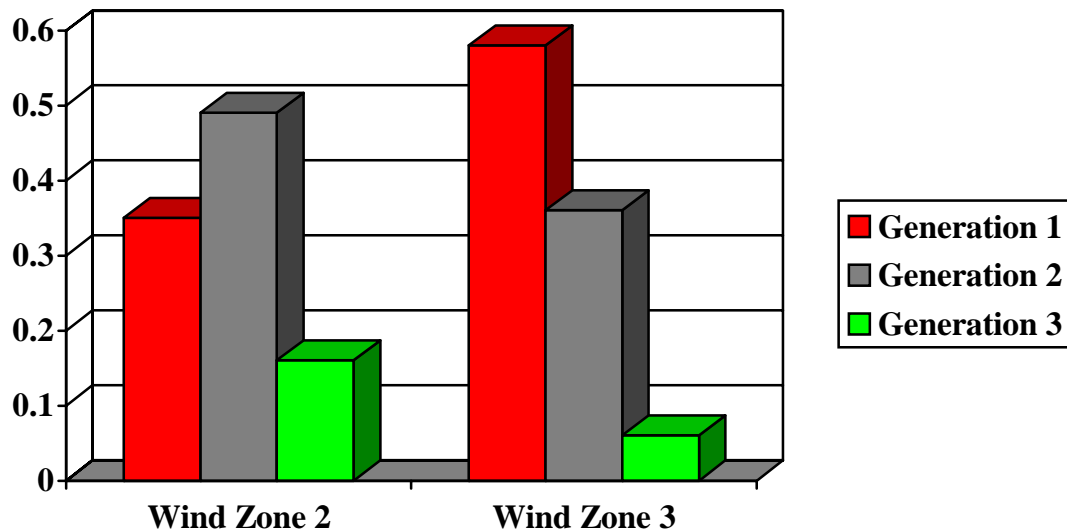




Figure 3 highlights the proportional differences between the Wind Zone 2 and Wind Zone 3 counties. Almost 60% of all mobile homes in the 14 Wind Zone 3 counties are first generation mobile homes. Less than 10% are third generation, or what we would consider the least vulnerable, mobile homes.

The data highlighted in Figures 2 and 3 emphasize that both Zone 2 and Zone 3 counties have a problem with generation 1 mobile homes; however, proportionately, the problem appears to be even more significant for those counties also considered the most at risk for high wind events.

As can be seen in Figure 4, overall Florida has a little less than 10% of its population living in mobile homes (total Florida population is 15,982,378). Of this, a little over 202,000 people are estimated to live in a generation 1 mobile home in Wind Zone 3, with another over 385,300 in a generation 1 mobile home in Wind Zone 2. Over 587,000 people live in housing known to be at great risk for hurricane damage, and more likely destruction.

The generation 1 population was estimated using a combination of Census 2000 information. Based on calculations used for Figures 2 and 3 (detailed in Appendix 1 and 2) we were able to determine the percentage of all mobile homes in a county that were manufactured in each of the three mobile home generations. The Census gives the population living in mobile homes; however, it does not further break this information down by year built. To estimate the population in generation 1 mobile homes, the same proportions of generation 1 mobile homes was applied to the total mobile home population. This method yields the best estimate of the population by generation.

Figure 4: Total Population in Mobile Homes by Wind Zone and Generation 1

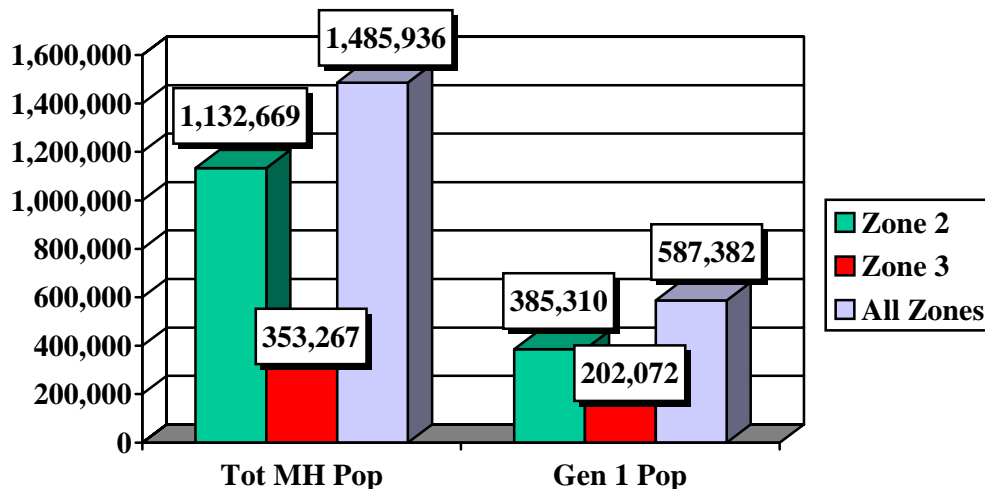
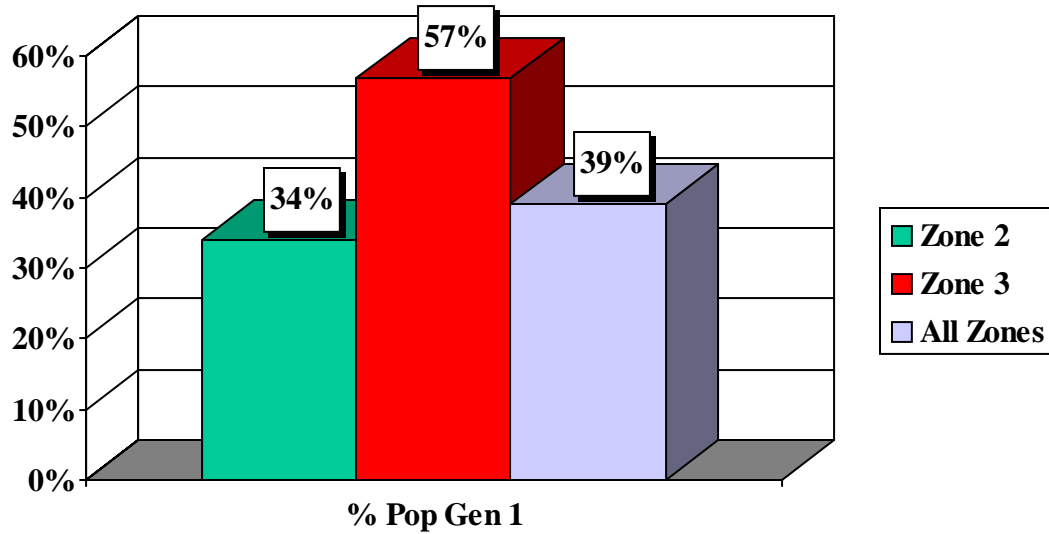


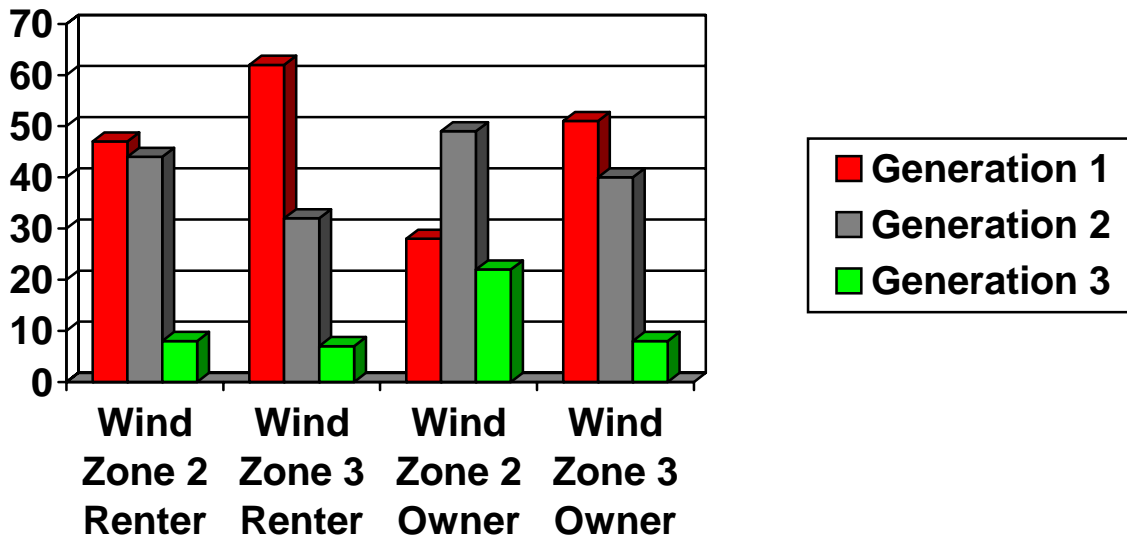
Figure 5 summarizes the population data by presenting the estimated percent of the population living in generation 1 mobile homes in each of the two zones and in the state overall. As can be seen, the majority of the population that lives in a mobile home in Zone 3 lives in a generation 1 mobile home while about one-third in Zone 2 live in a generation 1 mobile home. (See Appendix 3 and 4 for individual county estimates)

Figure 5: Percent Mobile Home Population Generation 1 by Zone



Another significant feature of this population that some rent while others own their mobile home. When comparing renters in both zones, those in Zone 3 are more likely than renters in Zone 2 to be living in the most vulnerable mobile homes. Owners in Zone 3 are more likely than owners in Zone 2 to be living in the most vulnerable mobile homes. Clearly a significant problem exists for Zone 3 Counties – they are the most vulnerable to high winds and have the highest proportion of generation 1 mobile homes.

Figure 6: Proportion Comparison of Renters and Owners by Wind Zone and Generation



### Summary

Clearly, generation 1 mobile homes pose a significant risk during high wind events, especially hurricanes, to those that call these units home. The risks are numerous: 1) potential loss of life if evacuation warnings are not heeded; 2) probable loss of home necessitating temporary housing solution; 3) probable loss of majority, if not all of household belongings; 4) increased family stress as the result of losing home; and 5) numerous other more hidden risks such as the risk of increased domestic violence and emotional problems for young children.

For the State and Federal Government, these potential losses are even more significant since the majority of mobile homes are not covered by insurance, and where insurance exists, it is usually inadequate. As a result, in the wake of a hurricane, it is the State and Federal Government that often absorbs the majority of the costs when mobile homes are lost. These costs include: 1) covering the losses discussed above; 2) providing mental health care for stressed households; 3) dealing with increased domestic violence police reports and court cases; 4) and dealing with issues of collateral damage that most likely will occur when older mobile homes are damaged and destroyed during high wind events.

In fact, in determining the cost-effectiveness of replacing older generation 1 mobile homes, some of the hidden costs are perhaps the most significant. When a mobile home suffers extreme damage during a hurricane, the different pieces of the structure often cause additional damage to other structures in the area. These structures may be other vulnerable mobile homes or more structurally sound site built homes or businesses.

## Current Year Findings

### “Better, Not Best Approach”

#### Regulatory

The idea, then, was to pursue the possibility of allowing Zone 2 mobile homes to be placed in Zone 3 counties when that mobile home was replacing a generation 1 mobile home. We based this on discussions with stakeholders in the manufactured home industry and mobile homeowners, and their belief that Zone 3 mobile homes were too costly. The goal was to lower one of the barriers to upgrading an older mobile home by allowing a more cost effective option. What would result is a “better, safer” home, even if it was not the “safest” home

Two significant research tasks had to be completed before a program could be developed or funding options pursued. The first task was to determine who regulates the wind zone regulations for mobile homes. The second task was to find data supporting the notion that the difference in the zones created “prohibitive” cost variations. Once these two tasks were completed, the feasibility to make the changes or the foundation for the changes would be clear.

The original belief was that the placement of mobile homes was regulated by the State of Florida through its new statewide building code. However, research found that the State of Florida is not the regulatory body as it relates to wind zone regulation and placement.

Wind Zone requirements are federal law. *24 CFR 3280* of the HUD code stipulates that:

- a. Mobile homes shall be designed and constructed to conform to one of three wind zones.
- b. Homes designed and constructed to a higher wind zone can be installed in a lower wind zone (Zone 3 can be installed in Zone 2 area).

What is clear is that current federal regulations do not allow lower level Zone 2 mobile homes to be installed in Zone 3 or Zone 1 in Zone 2. As a result, in order to implement any type of change to the regulation it would have to be done on a federal level with implications for the nation, not just Florida.

With the answer to the first question, research then focused on understanding the difference in costs between Zone 2 and Zone 3 mobile homes. If the costs were

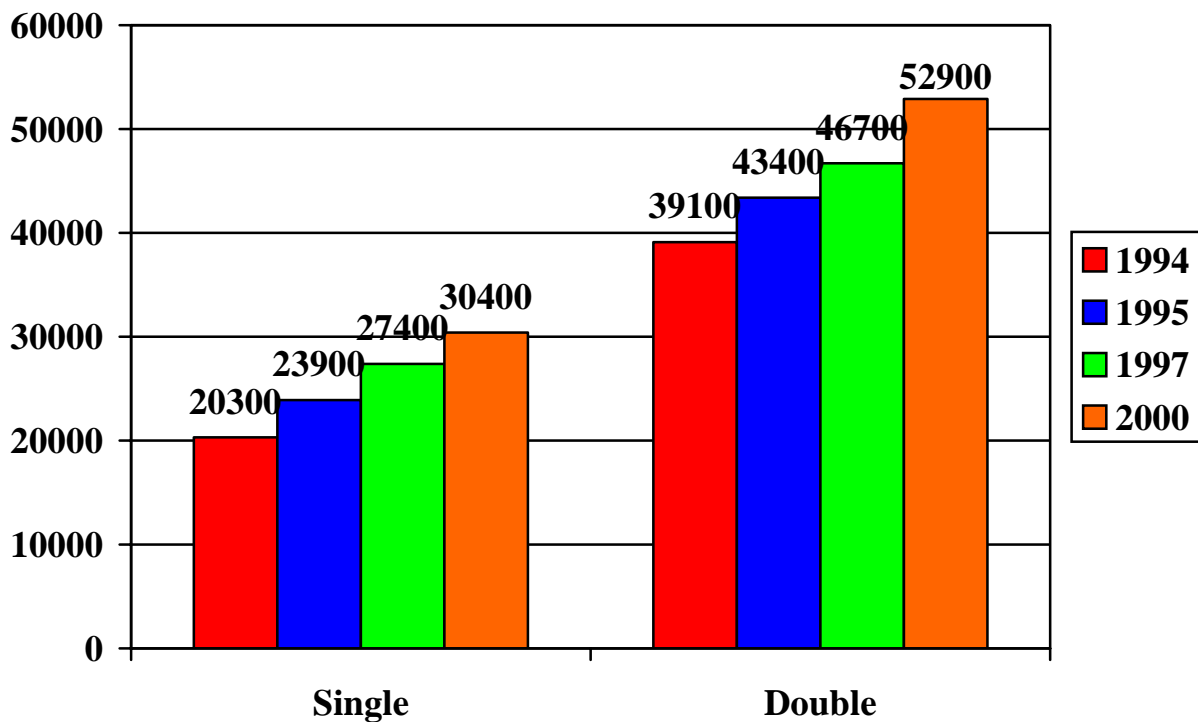
prohibitively different, as believed, then the more complicated issue of dealing with federal regulation could be pursued.

### **Pricing**

Since 1994, data indicates that the prices of mobile homes in Florida have significantly increased. According to Census economic data, a doublewide mobile home in 1994 cost about \$39,100. In 2000, the price had jumped to close to \$53,000. With prices at such levels, it is questionable whether mobile homes will remain an affordable housing option.

What is clear is that older mobile homes continue to be in circulation, in part, because the cost of replacement is prohibitively high in general. The expectation was that the prices in Zone 3 would be even higher. Just to get a general idea of costs for new mobile homes in Florida, research tried to collect current costs of mobile homes in Florida in general, and then in Zone 3 counties.

Figure 7: Change in Mobile Home Prices Since 1994



Appendix 5 lists starting sales costs for one manufacturer’s available homes in Florida. Regardless of the location in Florida, the same list of homes is available with the same starting costs. These findings tend to suggest that different zoned mobile homes are not significantly different in price. In addition, the price range lends support to the notion that new mobile homes in Florida are expensive, and perhaps, not the same affordable housing option that they once were. However, regardless of the overall affordability of mobile homes in Florida, we continued to focus on cost comparisons between Zone 2 and Zone 3.

One of the first problems with comparing mobile home costs is that each new mobile home tends to be customized to a buyer. As such, you cannot simply approach a retailer, ask for pricing information, and then compare results.

**Table 1: Comparison of Mobile Home Costs for similar models, same manufacturer**

	Zone 3		Zone 2		
	Ft Laud.	Palm Bch	Orlando	Ocala 1	Ocala 2
Model 1	80,900	82900			
Model 2	69900	67900	56900	58900	57900
Model 3	69900	87900	69900		58900
Model 4	76900	80900			76900
Model 5	66900	79900			62900
Model 6	65900	93900	62900	63900	64900
Model 7	60900		56900		57900
Model 8	47900	55900		50900	52900
Model 9		58900	59900		
Model 10		54900	49900	49900	44900

Prices vary based on a variety of factors. These factors appear to include location, upgrades within the home, upgrades to the exterior of the home, and additions such as screened lanais, carports and outdoor storage rooms. As such, even within the same zone, the price of the same model can vary drastically. Table 1 illustrates a comparison of models for 5 communities in Florida, two in Zone 3 locations and three in Zone 2 locations. One of the most striking comparisons is to look at Model 6. In the Palm Beach community, Model 6 has a price of \$93,900. In the community in Ft. Lauderdale,

also a Zone 3 county, Model 6 is priced at \$65,900, which is comparable to the cost for the same model in the Zone 2 locations.

The home in Palm Beach County includes upgraded appliances, upgraded drywall, a deluxe landscaping package, raised screened lanai, ceramic tile flooring, automatic sprinkler system and carport. This home compared to a home in a Zone 2 location may appear “prohibitively” expensive. However, the difference in the cost is not related to any additional features related to the Zone 3 wind designation.

Discussions with mobile home retailers in Florida support the finding that Zone 2 and Zone 3 mobile homes are comparably priced. The majority of retailers, however, were hesitant to offer exact cost differences. What we were able to narrow it down to was that the difference is no more than \$2,000.

After weeks of trying to get more specific information, the following email clarified the issue even further. An owner of a mobile home dealership clarified the difference in cost, and also indicated that they only carry Zone 3 mobile homes. The email is as follows (for confidentiality purposes the name and location of the dealership has been removed):

*Every home that I have in stock is a zone 3 because it is required in many of the counties that we serve most often. A zone 3 unit has greater strength, a stronger tie down and set up requirement, and will therefore withstand higher wind load. The difference in \$\$\$ is not significant, usually \$700 or so depending on size and layout.*

Other information was found that indicates that the difference in cost could be even less. One website focused on Zone 2 mobile homes added a footnote that indicated that the cost of a Zone 3 mobile home was “\$450.”

Based on the information gathered, we can safely conclude that Zone 2 and Zone 3 mobile homes are comparably priced when looking at base units. The “prohibitive” cost differences appear to be based on upgrades options to a mobile home and site, and possibly the community location of the unit. For example, some communities have more amenities than others, and locating in that community adds to the price of the unit since the communities themselves, in many instances, sell the units.

Just looking at sales comparisons without taking into account what is actually going in to the sale may distort the outcome of the comparison. In fact, looking at Table 1 and



comparing the prices for Model 8, might lead someone to conclude that Zone 2 mobile homes cost more than Zone 3 mobile homes. If looking at the home in Ft. Lauderdale compared to the two in Ocala, the price in Ft. Lauderdale is lower. The data, because it does not include what upgrades the home might have, is misleading.

Research findings, then, do not support the idea that Zone 3 mobile homes are prohibitively expensive as compared to Zone 2 mobile homes.

## **Renters**

While researching the issues for this project another concern arose that needs to be addressed in this report, and perhaps in future research. When looking at different mobile home communities in Florida, one community was particularly interesting because of its large number of rental units.

Much disaster research tends to focus on homeowners. Research on mitigation activities tends to focus on site-built single-family homes. Likewise, much of the research trying to understand options for moving those in the most vulnerable pre-1976 mobile homes to safer housing has tended to focus on options for those who own their homes.

Many mobile home communities focus on the sale of both new and pre-owned mobile homes. However, one community in Tampa particularly stood out because of its numerous rental units. While in and of itself, this might not seem important for this research, when taken in conjunction with analysis of the age of these units, it paints an interesting picture that may need further consideration.

This community advertised 46 mobile homes for rent. Of these 46, eight did not list the manufacture year. Of the remaining 38, five were built between the years of 1977 and 1992. The remaining 33 homes were all built before 1976. Whether this is an isolated case is yet to be determined, but it appears safe to say that renters in older mobile homes is a population that has not gotten much attention.

If this is a common trend, it is likely that mobile home renters live in older, more vulnerable housing. In addition, we can conclude that these older mobile homes are sources of income for either park owners or private owners and as such, trying to eliminate them from the housing stock will require different incentives and programs.

The data seems to indicate that there are two issues at play: owner occupied mobile homes and renter occupied mobile homes. Figure 6 illustrates that the majority of

renters in Wind Zone 3, in particular, live in generation 1 mobile homes. Likewise the majority of renters in Wind Zone 2 live in generation 1 mobile homes. It is clear that the most socially vulnerable population rents and lives in an older physically vulnerable mobile home. Unfortunately, none of the ideas considered in this line of research has focused on this highly vulnerable population.

## Cost

Section IV of this report outlines the scope of the issue in Florida. Both analysis of Department of Motor Vehicle data and census data shows that Florida has conservatively, between 250,000 and 300,000 pre-1976 mobile homes in its housing stock.

For the purposes of this report, we will concentrate on the 2000 Census data. In total, the 2000 Census indicates that there are 267,769 occupied pre-1976 mobile homes in Florida. Other research on this project by FIU's HCET has shown that the cost of moving and dismantling these older homes is between \$3,000 and \$4,000.

Table 2: Estimated Move and Dismantle Costs for Generation 1 Mobile Homes

Funds:	Objective:
937,191,500.00	Total Cost to Move and Dismantle (est. cost \$3,500)
93,719,150.00	Total amount needed per year to replace over 10 years
46,859,575.00	Total amount needed per year to replace over 20 years
31,239,716.67	Total amount needed per year to replace over 30 years

As Table 2 illustrates, using a mid-point figure of \$3,500, it is conservatively estimated that it will cost over \$937 million to cover the costs of moving and dismantling the aging mobile home stock. This figure does not include any actual replacement costs or incentives that might be needed. Table 2 also gives estimates of the amounts that would be needed each year if the replacement program were spread out over a 10, 20 or 30 year period.

As can be seen in Table 2, the costs per year even over 30 years are quite high. Even just trying to eliminate 10% of the aging stock is prohibitively costly. You would need between 3 million and 9 million a year depending on the time period. And again, these costs reflect only a minimal state involvement. Previous years' research indicates that the State of Florida and partners would have to take on considerable if not all costs since the population in these vulnerable unites tend to be the most economically marginal.

Previous findings in this report have illustrated the continuing rise in price of mobile homes. The smallest mobile homes start at \$30,000. Using a conservative figure of \$25,000 as the amount each mobile home owner would need to replace their aging unit, Table 3 outlines the overall costs of a program of replacement including replacement and moving/dismantling. As can be seen in Table 3, the costs of such a program are

Table 3: Estimated Replacement Costs for Generation 1 Mobile Homes

Funds:	Objective:
937,191,500.00	Total Cost to Move and Dismantle
6,694,225,000.00	Total Cost to Replace at \$25,000/MH
<b>7,631,416,500.00</b>	Total Cost of Replacement
763,141,650.00	Total amount needed per year to replace over 10 years
381,570,825.00	Total amount needed per year to replace over 20 years
254,380,550.00	Total amount needed per year to replace over 30 years

staggering. Research has found that most mobile home manufacturers and retailers do not offer more than a \$1,000 to \$1,500 incentive to new buyers, and often those incentives are for upgrades, and not the basic home cost.

Census data estimates that less than 10,000 new Generation 3 mobile homes have been bought in Florida in the last 10 years. There is no way to know the proportion of those that were people moving into a mobile home for the first time as compared to upgrading their units. However, survey data in past project years has indicated that the

majority of those in pre-1976 mobile homes have no mortgage and never have had a mortgage which suggests most are buying these units for cash.

The reality appears to be that the majority of those in pre-1976 mobile homes are not economically able to take on the mortgage costs of a newer mobile home, and as such any replacement program must be prepared to take on the entire cost of the replacement. The figures outlined in Table 2 are conservative; however, at the same time quite expensive.

## Conclusions based on Current Findings

The following is a list of conclusions summarized from current year findings, and in conjunction with information collected and knowledge attained in previous years' research.

1. Research indicates this is a major issue in Florida where considerable population lives in the most vulnerable housing. In addition, almost 60% of all mobile homes in Wind Zone 3 counties (counties with the risk of the most dangerous winds) are generation 1 mobile homes. Less than 10% of all mobile homes in Wind Zone 3 counties are generation 3 homes. Zone 2 counties are more likely to have newer mobile homes with a little over 30% from generation one.

However, while Zone 2 counties have proportionately more generation 2 and 3 mobile homes, a significant number of pre-1976 mobile home are still located in Zone 2 counties. According to Census 2000 data, there are over 165,000 generation 1 mobile homes in Zone 2 counties.

In addition, almost 600,000 people live in these generation 1 mobile homes with over 202,000 in the fourteen Zone 3 counties, and over 385,300 in the remainder of the state.

2. Because Zone 3 counties have a significant proportion of generation 1 mobile homes, and in consultation with stakeholders in the mobile home industry, the avenue of research that was pursued focused on allowing Zone 2 mobile homes to replace generation 1 mobile homes in Zone 3 counties. The idea was to focus on safer or better alternatives, and not the safest or best option. Stakeholders argued that Zone 3 mobile homes were not readily available and too expensive, therefore, making it less likely that people would be willing to move from their older mobile home.
3. State of Florida does not control the Wind Zone designation. HUD determines Wind Zone designation, and as such, any change requires changes in federal guidelines.
4. Wind Zone 3 mobile homes are not significantly more costly when looking at base units. The difference in cost appears to be some where between \$400 and \$1000. As such, there is no basis to go to HUD with a request to alter the wind zone designations. In fact, the difference in cost between the zoned

mobile homes is so insignificant that many retailers only stock Wind Zone 3 units.

5. What appears to be the most prohibitive factor in households upgrading to newer mobile homes is the trend for mobile homes to be more and more expensive. In 2000, the average doublewide mobile home costs \$52,900 according to Census data. A singlewide mobile home averages over \$30,000. When this information is coupled with demographic information found in previous years, it is obvious that the majority of the population in these older units is not economically able to move into other housing. Others simply do not want the inconvenience of moving due to age (the majority of those living in pre-1976 mobile homes are over 65 years of age).
6. The idea of replacing older mobile homes does not address the issue of renters who live in these oldest units. In fact, a program of replacement could possibly displace a significant number of renters who live in the oldest units. Newer units could easily be rented for significantly higher rents, and thus leaving the population currently living in them with few, if any, alternate housing options.
7. Perhaps the most significant finding reported is the overall cost associated with replacing the pre-1976 mobile home stock. To move, dismantle and replace at a modest cost all pre-1976 mobile homes would cost a staggering \$7.6 billion. The cost to move and dismantle alone is over \$937 million. Even looking at replacing only 10% of the stock is still a large amount. Funding options cannot even be investigated until a workable program is developed. Indications are that a project of this nature may **not be** fiscally or socially feasible.
8. Research from the current year, coupled with research findings from previous years, suggest that a replacement program may not be the most effective way to mitigate the potential for damage of those in the most dangerous mobile homes. If the goal is to find ways to reduce this vulnerability, then other means as suggested in the next section of this report will have to be considered.

## **Recommendations and Suggestions for Future Options**

After three years of pursuing various options for a replacement program, it appears clear that the scope of the problem is too large to be feasible and effective for a program in Florida. However, research has shown that there is a significant population at heightened risk because they live in pre-1976 mobile homes. The following is a list of recommendations and suggestions for future options to help reduce the vulnerability of this population.

### **Recommendation 1:**

The International Hurricane Research Center under has developed a program of structural testing and research (Laboratory for Structural Mitigation). Research on features of site-built homes has been successful in finding ways to mitigate the impacts of hurricanes. One successful test has found ways to nail roof sheathing by changing the type of nail that improves the performance of the roof under hurricane impacts by a factor of 80% to 130%. Research continues to find more methods of mitigation for site built homes.

Nothing similar, beyond additional tie-downs, exists for older mobile homes. The recommendation is to begin testing older mobile homes to better understand where and how they fail in high winds. Once this is understood the recommendation is that the IHRC through their structural testing capacity explore possible affordable (cost-effective) mitigation options for retrofitting older mobile homes.

The reality is that people either do not want to move or simply do not have the ability to move. Finding ways to affordably make these older mobile homes safer must become a priority for the State of Florida. We know a program of replacement will be prohibitively expensive. What we do not know is whether any mitigation alternatives are available for these older mobile homes and at what cost. Until we allow this type of testing and development to be undertaken, it is impossible to know what the best course of action may be to reduce the vulnerability.

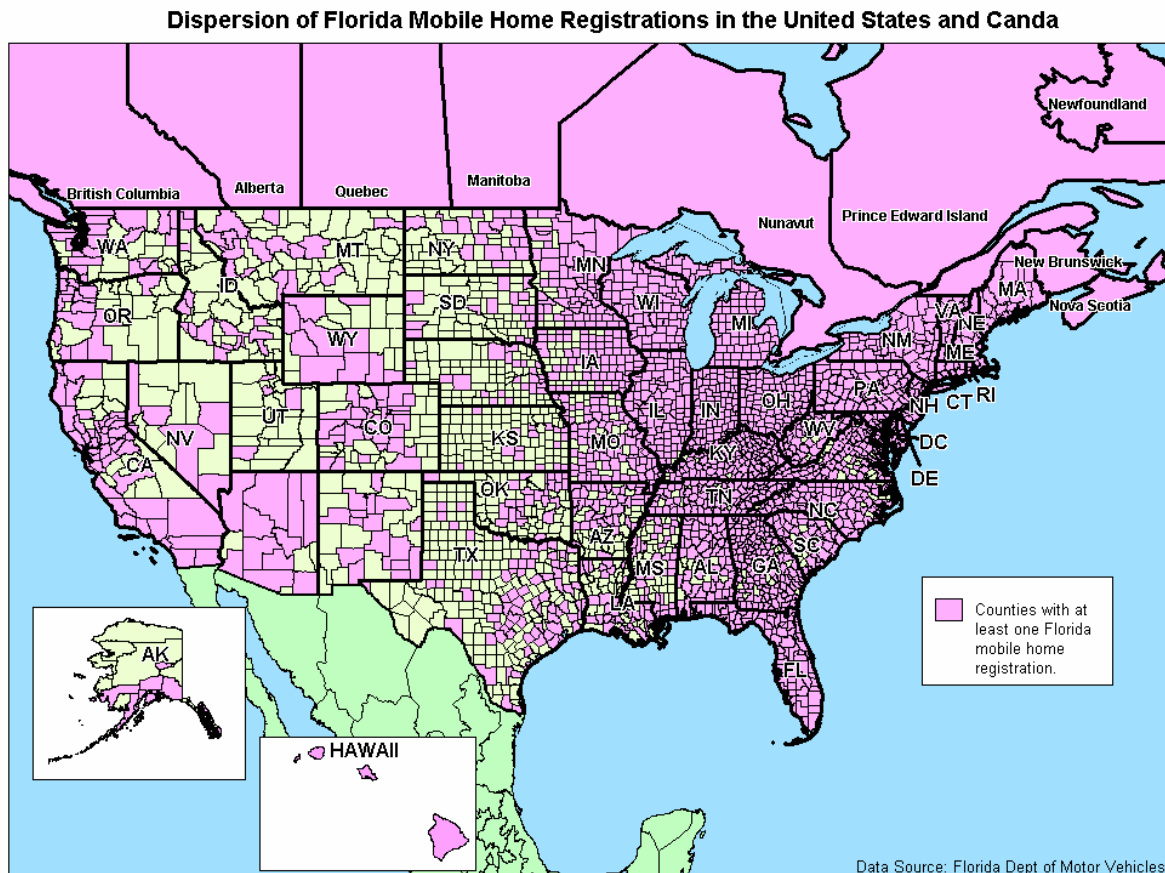
### **Recommendation 2:**

A survey of mobile home dwellers was done during the first year of this project with follow-up the second year to a select group of those who lived in pre-1976 mobile homes. The follow-up was to a very small portion of mobile home owners that answered our telephone survey during the previous year. During this follow-up, many owners

reported that they would not be interested in moving out of their current mobile home under any circumstance.

It is recommended that additional information be sought from those currently owning pre-1976 mobile homes. As can be seen in Figure 8, mobile home registrations are

Figure 8: Dispersion of Florida Mobile Home Registrations



throughout the United States and Canada. It is hard to say how interested in mitigation or other programs those in other parts may be. We have no idea how many mobile homes are sources of income for those who own them.

To understand this population better, it is suggested that a mail survey be given based on ownership registration. To do this, the most recent Florida Department of Motor Vehicles data will need to be attained. And once attained, a random sample of owners



can be sent a survey instrument. Mail surveys are not the ideal survey method due to low response rates, but measures can be undertaken to increase response rates. In addition, the registration data does not include phone numbers, thus limiting the ability to do telephone surveys. (Telephone surveys are still possible, but rely on phone books)

Mail surveys are relatively inexpensive. Bulk mail rates are between 19 and 23 cents per envelope. Return envelopes can be printed so that only those that are mailed back are charged with postage. Post cards and follow-up mailings can help get the response rate to an acceptable level. Surveys can be very short or can simply be a return post card where the recipient checks off appropriate boxes.

Questions that can be asked are: do you live in the mobile home you have registered year round? When you are not living in your mobile home do you rent it for cash payments? If you were to sell your mobile home, how much do you think it is worth? Would you be interested in upgrading your mobile home to a newer mobile home? If a product existed that could help your mobile home withstand hurricane force winds, would you be interested in the product? Would you be willing to pay between \$500 and \$1,000 for the product? Would you allow the product to be installed if it meant no additional cost to you? A better sample of those who live in pre-1976 mobile homes may help focus the direction of the program.

### **III. Appendices**

## Appendix 1: Zone II Counties, # of Mobile Homes by Generation

County	Generation 1	Generation 2	Generation 3	% Gen 1
Liberty County, Florida	327	465	190	0.33
Union County, Florida	336	823	393	0.22
Lafayette County, Florida	349	325	188	0.40
Hamilton County, Florida	377	988	523	0.20
Jefferson County, Florida	429	795	473	0.25
Calhoun County, Florida	455	742	486	0.27
Flagler County, Florida	492	1125	324	0.25
Taylor County, Florida	583	1252	626	0.24
Washington County, Florida	618	1246	898	0.22
Madison County, Florida	626	1267	527	0.26
Holmes County, Florida	627	1098	574	0.27
Glades County, Florida	714	951	387	0.35
Gilchrist County, Florida	734	1376	718	0.26
Hardee County, Florida	853	1150	269	0.38
Baker County, Florida	926	1485	714	0.30
Bradford County, Florida	937	1204	714	0.33
Wakulla County, Florida	959	2004	712	0.26
Dixie County, Florida	965	1190	634	0.35
Gadsden County, Florida	1191	2495	1584	0.23
Jackson County, Florida	1319	2553	1298	0.26
Walton County, Florida	1367	2027	1434	0.28
Suwannee County, Florida	1434	3245	1819	0.22
DeSoto County, Florida	1591	1872	372	0.41
Nassau County, Florida	1600	3316	1257	0.26
Columbia County, Florida	1877	3905	2319	0.23
Okeechobee County, Florida	1926	3176	557	0.34
Levy County, Florida	1952	3407	1670	0.28
St. Johns County, Florida	1965	3410	1510	0.29
Indian River County, Florida	2060	2579	362	0.41
Seminole County, Florida	2117	2083	379	0.46
Okaloosa County, Florida	2132	2217	1228	0.38
Clay County, Florida	2281	4217	1943	0.27

County	Generation 1	Generation 2	Generation 3	% Gen 1
Santa Rosa County, Florida	2319	3323	1740	0.31
Sumter County, Florida	2416	4004	996	0.33
Leon County, Florida	2485	4543	2603	0.26
Alachua County, Florida	2688	4662	2255	0.28
Bay County, Florida	2962	4612	2568	0.29
Osceola County, Florida	3031	4716	1040	0.34
Highlands County, Florida	3075	4537	487	0.38
St. Lucie County, Florida	3362	4601	549	0.39
Escambia County, Florida	3656	4584	2028	0.36
Hernando County, Florida	3887	5634	1159	0.36
Putnam County, Florida	4157	5574	2127	0.35
Citrus County, Florida	4904	6501	1676	0.37
Duval County, Florida	6601	9216	3790	0.34
Orange County, Florida	6871	9384	1813	0.38
Brevard County, Florida	7564	9771	1155	0.41
Lake County, Florida	9089	12271	2138	0.39
Marion County, Florida	9117	13315	5032	0.33
Volusia County, Florida	9549	8723	1542	0.48
Hillsborough County, Florida	13600	17010	4468	0.39
Pasco County, Florida	13756	14316	3614	0.43
Polk County, Florida	13860	24353	7521	0.30
Total	165068	235638	77383	0.35

## Appendix 2: Zone 3 Counties, Number of Mobile Homes by Generation

COUNTY	Generation 1	Generation 2	Generation 3	% Gen 1
Franklin County, Florida	394	561	201	0.34
Gulf County, Florida	410	548	228	0.35
Hendry County, Florida	1413	2383	805	0.31
Collier County, Florida	3611	3473	601	0.47
Charlotte County, Florida	3636	3295	544	0.49
Martin County, Florida	3755	2273	182	0.60
Monroe County, Florida	4111	1990	312	0.64
Miami-Dade County, Florida	7129	5189	1160	0.53
Sarasota County, Florida	8652	4813	443	0.62
Palm Beach County, Florida	9590	5082	1207	0.60
Manatee County, Florida	10914	6023	950	0.61
Lee County, Florida	11080	12179	1675	0.44
Broward County, Florida	12735	5846	901	0.65
Pinellas County, Florida	25271	9177	890	0.72
Total	102701	62832	10099	0.58

### Appendix 3: Zone 2 Counties, Total Population and Estimated Generation 1 Population

County	MH Pop	% Gen 1	Est. Pop Living in Generation 1 Mobile Home
Alachua	23,949	.28	6,702
Baker	9,465	.30	2,805
Bay	26,253	.29	7,667
Bradford	7,874	.33	2,584
Brevard	35,543	.41	14,540
Calhoun	4,365	.27	1,180
Citrus	28,714	.37	10,765
Clay	23,597	.27	6,377
Columbia	22,001	.23	5,098
DeSoto	10,166	.41	4,217
Dixie	6,861	.35	2,374
Duval	50,564	.34	17,023
Escambia	25,572	.36	9,105
Flagler	4,406	.25	1,117
Gadsden	15,705	.23	3,549
Gilchrist	7,331	.26	1,903
Glades	5,116	.35	1,780
Hamilton	5,210	.20	1,040
Hardee	7,066	.38	2,653
Hernando	23,151	.36	8,426
Highlands	16,419	.38	6,234
Hillsborough	88,756	.39	34,411
Holmes	5,801	.27	1,582
Indian River	9,949	.41	4,098
Jackson	12,839	.26	3,276
Jefferson	4,626	.25	1,169
Lafayette	2,302	.40	932
Lake	47,777	.39	18,480
Leon	24,699	.26	6,373
Levy	16,899	.28	4,693

County	MH Pop	% Gen 1	Est. Pop Living in Generation 1 Mobile Home
Liberty	2,611	.33	869
Madison	6,576	.26	1,701
Marion	65,130	.33	21,621
Nassau	16,916	.26	4,385
Okaloosa	14,244	.38	5,445
Okeechobee	14,170	.34	4,823
Orange	42,167	.38	16,036
Osceola	20,763	.34	7,162
Pasco	68,388	.43	29,690
Polk	106,858	.30	32,384
Putnam	29,625	.35	10,385
St. Johns	17,940	.29	5,120
St. Lucie	14,832	.39	5,858
Santa Rosa	19,045	.31	5,983
Seminole	9,291	.46	4,295
Sumter	17,257	.33	5,622
Suwannee	16,798	.22	3,707
Taylor	6,348	.24	1,504
Union	4,312	.22	934
Volusia	37,583	.48	18,112
Wakulla	9,407	.26	2,455
Walton	12,085	.28	3,422
Washington	7,347	.22	1,644
Total	1,132,669		385,310

#### Appendix 4: Zone 3 Counties, Total Population and Estimated Generation 1 Population

COUNTY	MH Population	% Gen 1	Est. Pop Living in Generation 1 Mobile Home
Broward	40,867	0.65	26,564
Charlotte	13,007	0.49	6,373
Collier	19,210	0.47	9,029
Franklin	2,995	0.34	1,018
Gulf	2,969	0.35	1,039
Hendry	15,166	0.31	4,701
Lee	47,553	0.44	20,923
Manatee	29,708	0.61	18,122
Martin	11,692	0.60	7,015
Miami-Dade	39,584	0.53	20,980
Monroe	13,625	0.64	8,720
Palm Beach	35,540	0.60	21,324
Pinellas	58,259	0.72	41,946
Sarasota	23,092	0.62	14,317
Total	353,267		202,072



Appendix 5: Florida New Mobile Home Prices from one Manufacturer

<b>Model</b>	<b>Bedrooms</b>	<b>Bathrooms</b>	<b>Sq. Ft.</b>	<b>Starting From the</b>
<b>Model 1</b>	3	2	1067	\$40's*
<b>Model 2</b>	3	2	1547	\$50's*
<b>Model 3</b>	3	2	1600	\$50's*
<b>Model 4</b>	3	2	1800	\$50's*
<b>Model 5</b>	2	2	1209	\$50's*
<b>Model 6</b>	3	2	1280	\$50's*
<b>Model 7</b>	3	2	1386	\$50's*
<b>Model 8</b>	2	2	1440	\$50's*
<b>Model 9</b>	3	2	1440	\$60's*
<b>Model 10</b>	3	2	1492	\$60's*
<b>Model 11</b>	4	2	2280	\$60's*
<b>Model 12</b>	2	2	1492	\$60's*
<b>Model 13</b>	4	2	1923	\$60's*
<b>Model 14</b>	3	2	1800	\$60's*
<b>Model 15</b>	3	2	1680	\$60's*
<b>Model 16</b>	3	2	1980	\$70's*
<b>Model 17</b>	4	3	2280	\$70's*
<b>Model 18</b>	4	2	2280	\$70's*
<b>Model 19</b>	3	2	1843	\$70's*
<b>Model 20</b>	3	2	1844	\$70's*
<b>Model 21</b>	4	2	2397	\$80's*
<b>Model 22</b>	3	2	1946	\$80's*