



**Mitigating the Effects of Hurricanes in Florida:  
The Challenges of Upgrading Mobile Home Parks**

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For the past four years, several universities have been involved in a multi-disciplinary study on how to mitigate the effects of hurricanes on residences in Florida, particularly mobile homes, which constitute a substantial portion of affordable housing in the state.

This report focuses on one track: eliminating state and local barriers to upgrading mobile homes and communities in the state (with a focus on Polk County).

This work involved interviews with mobile home owners and renters, mobile home park owners or managers, mobile home manufacturers or agents, architects, engineers, building and planning officials, as well as visits to several mobile home parks. Additionally the team conducted extensive research of existing local land-use laws, codes, plans and regulations and surveyed building officials and mobile home dealers to determine the extent of knowledge gaps with respect to regulatory environment regarding mobile homes. The importance of this research was made obvious by the 2004 hurricane season, and which four major storms created significant damage to Florida's housing stock, particularly mobile homes.

## MOBILE HOMES

Florida leads the nation in the number of mobile homes. Some 2 million residents of Florida, or about 12.5 percent of the total population, live in mobile homes. In many communities, it is the only form of affordable housing. The potential for damage to this housing stock from hurricane impact is real and of the utmost importance to Florida policy-makers, public officials and a host of stakeholders including, the residents, but also mobile home manufacturers, housing developers and builders as well as design and engineering professionals. The largest numbers of mobile homes are found West Central Florida, particularly Hillsborough, Polk, and Pinellas counties.

Any issue that affects such a large segment of the population becomes a very important one not only for the residents themselves, but also for state legislators, policy-makers and others. The demographics of mobile homes residents are quite different than those of the total population of the state. These characteristics include the following: Slightly more than 36 percent of the households consisted entirely of elderly persons (65 and older); an additional 49.1 percent of the households included members 65 years of age or older; about 15.4 percent of the population are widowers living alone. These are segments of the population that could be categorized as having *special needs* especially during emergencies.<sup>1</sup>

There are three distinct generations of mobile homes based on their year of manufacture. Roughly these generations can be identified as: Pre-1976, 1976 to 1994, and Post-1994. The Pre-1976 units are those that were built when there were no manufacturing/design standards. Those of the 1976-1994 generation were built under HUD standards. And the Post-1994 generation incorporates stricter design and manufacturing standards including wind load standards based on American Society of Civil Engineers (ASCE) specifications.

Throughout the state of Florida, and particularly in the west central Florida region, there are significant numbers of older mobile homes in use today. Only about 14 percent of units in service have been built to the strictest wind standards while approximately 29 percent belong to the “no-standards” pre-1976 generation. 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 to comply with current codes and standards, substandard modifications—contribute to unsafe and hazardous conditions. Most of these mobile home structures are of the “singlewide” configuration and were installed on either leased or purchased lots. Invariably, these structures incorporated approximately 500 to 700 square feet of floor area in a rectangular unit, and occupied regular-shaped parcels—some with typical dimensions as small as 25 feet by 40 feet.

It is unlikely that the manufactured housing industry will implement significant new changes in the foreseeable future, to further minimize the risk of property loss and damage due to hurricanes or other severe weather conditions. While modest improvements have been made in enhancing the structural integrity of mobile homes over the last two decades, current trends in this type of construction appear to be focused on increased space, the inclusion of more amenity features and enhanced curb appeal or character. Newer mobile homes have become much more appealing and marketable to that segment of the general public that will consider this form of housing as a first choice, or as an alternative to conventional site-built houses. As the inventory of newer, mostly doublewide mobile homes are purchased and installed there is an increasing supply of older ones that remain on the market and in continuous use. According to the *Tampa Tribune*:

Mobile homes seem to be popular among winter residents and retirees and are increasingly popular with families on limited budgets. ‘You can get in a brand new mobile home for as little as \$28, 000,’ said Scott Davis, a sales executive at Oakwood Homes. Mobile homes range in cost from a few thousand dollars to 8 more than \$100,000. Rent ranges from less than \$100 per week to several hundred dollars per month.<sup>2</sup>

Mobile homes, while affordable and easily sited, are particularly vulnerable to wind damage. They are not designed to withstand the wind velocities of a Category 3 or greater hurricane. Local emergency management agencies recommend evacuation of mobile homes for Category 1 or greater hurricanes. In coastal areas, storm surges during hurricane events can be devastating to mobile homes. Floods can cause strong pressures on foundations or piers, and floating debris can cause further damage to the exterior. Interior damage to the structure can be extensive. Some wind and flood damage can be avoided by proper installation, by raised installations using properly designed fill and/or posts, and by using tie-down. However, local building inspectors may be unfamiliar with the particular needs of manufactured houses. This may be especially true in small communities where inspectors do not specialize. Also, inspectors or inspection agencies may easily miss resold manufactured mobile homes.

Because of the dismal performance of mobile homes in Hurricane Andrew, new wind standards went into effect in the HUD Code in July 1994—manufactured homes placed in high-risk hurricane areas now must be designed to withstand approximately 100 mile per-hour winds. After the devastating 2004 hurricane season, the Florida Bureau of Mobile Home and RV Construction surveyed 152 mobile home parks in 14 counties. The survey found 4,250 mobile homes destroyed or damaged beyond repair—all were built more than 10 years ago. However, the survey showed none of the 6,371 homes built since 1994 suffered serious damage.<sup>3</sup>

## POLK COUNTY

### *Background*

Polk County's total population in 2000 was 484,000—about three percent of the Florida's entire population. It is the eighth most populous county in the state. Polk's total population is expected to grow to an estimated 550,000 by 2010. Approximately 63 percent of Polk County's total population resides in the unincorporated area of the county. The other 37 percent of the population live in Polk County's 17 cities. The total area of the county is approximately 2,010 square miles, which makes it the fourth largest county in Florida.

There are over 6000 licensed mobile home parks in Florida, with a total of 430,000 mobile home spaces. Polk County is home to over 500 of these mobile home parks, with nearly 46,000 mobile home spaces. The US census estimates that there are more than 50,000 mobile homes in the county, the most of any county in Florida. This number surpasses Hillsborough and Pinellas.<sup>4</sup>

“There has been a lot of redevelopment and attrition in Pinellas County,” said Frank Williams, spokesman for the Florida Manufactured Housing Association in Tallahassee, explaining many mobile home parks were 50 or 60 years old and have been replaced with other types of development. Pinellas, whose total land area is only about 15 percent of Polk's, doesn't have much land available for new development, Williams said, contrasting that with Polk, which still has plenty of available land.<sup>5</sup> The largest of the mobile home parks in Polk has over 1000 spaces.

Local planners, building officials, code enforcement officers and residents attribute the popularity of mobile homes to the relatively low cost of living in a county between two major cities, Tampa and Orlando, and the availability of land. Part of the reason for the prevalence of densely populated parks is the fact that mobile homes are grandfathered into the zoning. Many mobile homes in Polk were built in the 1970s and predate zoning laws. The regulations have become stricter in recent years, largely because of Polk's comprehensive development plan, approved by the state in 1991.<sup>6</sup>

Table 1

**POLK COUNTY MOBILE HOME PARKS**

COMMUNITY	MOBILE HOME PARKS (registered with Dept of Health)	MOBILE HOME SPACES
Auburndale	37	2603
Avon Park	2	20
Babson Park	4	87
Bartow	15	96
Bradley	2	12
Davenport	27	4689
Dundee	7	547
Eagle Lake	1	8
Eaton Park	3	93
Eloise	1	26
Fort Meade	13	888
Frostproof	25	2705
Haines City	38	4532
Highland City	5	69
Homeland	1	7
Lake Alfred	5	487
Lake Wales	58	4056
Lakeland	173	14,903
Loughman	3	217
Mulberry	12	1445
Polk City	6	452
River Ranch	2	97
Wahneta	8	102
Winter Haven	54	6799
<b>TOTAL</b>	<b>502</b>	<b>45,810</b>

Constructed from Florida Department of Motor Vehicles records

Table 2

## MAJOR STORM EVENTS AFFECTING POLK COUNTY: 1994-2004 Prior to 2004 hurricane season

Storm Type	Number of Events	Reported Damage to Mobile Homes
Flood	25	<p><b>1997</b> Six mobile homes received nearly \$155,000 dollars worth of structural damage.</p> <p><b>1998</b> Localized flooding of homes occurred on lakes in Polk county.</p>
Hurricane/ Trop. Storm	13	<p><b>1999</b> One mobile home lost its roof from tropical storm force winds on Rock Ridge Road in Lakeland.</p>
Tornado	34	<p><b>1997</b> Seventy-five homes were destroyed, another 75-100 suffered major damage while another 75-100 received minor damage. Most of the homes destroyed were mobile or pre-fabricated homes.</p> <p><b>1997</b> A tornado touched down in the Oakwood Estates mobile home park along Spirit Lake Road south of County Road 540. Approximately twelve mobile homes sustained minor to moderate roof, lanai and siding damage.</p> <p><b>1999</b> A tornado initially touched down in the Heatherwood Village Mobile Home Park and caused minor to moderate damage to the roofs, carports, lanais, and awnings of over 30 mobile homes. Two additional mobile home rooftops were removed by tornadic wind on Inman Drive while a shed and carport were destroyed at the intersection of Dorothy Street and Central Avenue.</p> <p><b>2002</b> A small tornado, which began as a waterspout on Lake Smart, briefly touched down at a mobile home park just north of Lake Smart in eastern Polk County. Minor damage was reported to 14 structures, with three of them having roofs partially torn off.</p> <p><b>2004</b> Polk County Emergency Management completed a storm survey and found shingles stripped off a brick home and four mobile homes with minor damage, including damage to skirting, awnings, and attached shed. An eyewitness watch a thin tornado move through the area. The wind speed of the tornado was estimated at 70 mph.</p>
Thunderstorm High Winds	128	<p><b>1993</b> Strong winds knocked a mobile home off its foundation.</p> <p><b>1993</b> Two houses and eight mobile homes suffered severe damage in Winter haven.</p> <p><b>1995</b> A thunderstorm downburst of 45 mph damaged two carport roofs at a mobile home park.</p> <p><b>1995</b> Thunderstorm winds damaged ten manufactured homes and eight six-unit apartment buildings near Fedhaven. Estimated damage of \$250 thousand.</p> <p><b>1996</b> Twelve mobile homes, two sheds and a screen enclosure were also damaged by thunderstorm winds. Most of the damage occurred on North Lake Lulu Drive and Rolling Oaks Drive in the Oakwood Estates subdivision. The wind blown debris was scattered over a four-block area.</p> <p><b>1997</b> Thunderstorm winds overturned and demolished five mobile homes on wheels at the Homes of Merit mobile home plant located at the Bartow Airport. Three additional mobile homes at the plant incurred minor structural damage.</p> <p><b>1997</b> Four mobile homes suffered moderate roof damage, crumpled carports and screened porches at the Cypress Greens and Lake Alfred Mobile Home Parks</p> <p><b>1997</b> Thunderstorm winds ripped off the roof of a mobile home on Sonora Road near State Road 557-A.</p> <p><b>1997</b> Thunderstorm winds overturned a mobile home on Alderman Road, damaged mobile homes at the Hampton Mobile Home Park and downed several trees along U.S. Highway 92.</p> <p><b>1997</b> Thunderstorm winds overturned a few mobile homes and damaged the roofs of twelve others in Bartow. Four of the mobile homes were destroyed.</p> <p><b>1997</b> Two mobile homes sustained major roof damage from thunderstorm winds at the Royal Oak mobile home park. Thunderstorm winds up to 50 mph caused minor porch roof and skirting damage to 16 to 20 mobile homes in the Pine Lakes Estates and Imperial Lakes subdivision in Lakeland.</p> <p><b>1997</b> Thunderstorm winds caused minor to moderate wind damage to 30 mobile homes in two mobile home parks in the vicinity of Harden Blvd. and Beacon Road. Three of the mobile homes incurred minor roof damage while the majority of the damage was limited to carports and awnings.</p> <p><b>1999</b> Thunderstorm winds, estimated at 50 mph by the public, caused minor damage to carports and screen porches of ten manufactured homes in the Four Lakes Golf Club Manufactured Home Park of Winter Haven.</p> <p><b>2001</b> The Polk county sheriffs department reported that thunderstorm winds caused moderate to minor damage to twelve mobile homes and caused minor hangar damage at the Lake Wales Municipal Airport.</p> <p><b>2002</b> Estimated 50 mph (43 knot) winds at the Dawn Heights mobile home park produced minor damage to awnings, porches, and windows.</p> <p><b>2003</b> Thunderstorm winds downed trees and blew the roof off a mobile home.</p> <p><b>2003</b> Thunderstorm winds took the roof off of a mobile home, destroyed a car port, and pushed trees onto at least two vehicles.</p>
<b>TOTALS</b>	<b>200 events</b>	<b>Damage to at least 460 mobile homes</b>

The market is greater in unincorporated sections of the county because mobile homes are not as welcome in cities. There are no separate districts for mobile homes in unincorporated Polk County. Polk County's "mobile home friendly," said Christina Hummel, a senior county planner. "If your neighbors have a mobile home, you can have one, too. It's a majority rules situation."<sup>7</sup>

*The Strategic Regional Policy Plan*, of the Central Florida Regional Planning Council provides this assessment of the mobile homes in the region:

The only segment of the housing market that has answered the call for affordable units is the mobile/manufactured housing industry. Mobile homes, both in planned communities and sold as individual units, have the largest market share in the affordable category, because they are generally less expensive than conventional housing and often require as little down payment as a car, but they present unique problems in the Region. Ineffective local policies governing the placement of mobile homes, which are reinforced by the State's misplaced assumption that permissive regulations and minimum infrastructure makes them affordable housing, only adds to the depreciation of the housing stock in Central Florida counties. In addition, the spread of mobile homes dramatically increases the risk of storm damage to a growing portion of the population.<sup>8</sup>

### Storms

While Polk County does not have any coastal areas, it suffers from frequent severe storms year round. According to the National Oceanic & Atmospheric Administration (NOAA), 200 severe storm events (floods, hurricanes/tropical storms, tornadoes, and thunderstorms) damaged at least 460 mobile homes in Polk County between 1994 and 2004 (prior to hurricane season). This indicates that about 1 percent of the mobile homes in the county were damaged—by wind and/or water events—in less than a decade, in a period that no major hurricanes hit the area directly.

In 2004, three major hurricanes crossed over Polk County and damaged or destroyed about 15 percent of the mobile homes in the county. Nearly 500 mobile homes were destroyed and about 5,806 mobile homes were damaged in Charley, according to Polk County officials. Nearly 166 mobile homes were destroyed during Frances, and another 435 sustained major damage. Jeanne left 660 mobile homes with major damage.<sup>ix</sup>

### Zoning and Building Codes.

The Polk county study area for this research is comprised of 18 governmental jurisdictions: the County of Polk and its 17 incorporated cities (Lakeland, Winter Haven, Auburndale, Bartow, Davenport, Dundee, Eagle Lake, Fort Meade, Frostproof, Haines City, Highland Park, Hillcrest Heights, Lake Alfred, Lake Hamilton, Lake Wales, Mulberry, and Polk City).

Zoning information was obtained by an electronic search was conducted on [www.municode.com](http://www.municode.com) using "mobile homes" as the primary key words for several representative communities. The Polk County Land Development Code is available on the county's web site.

At least eight jurisdictions within the study area have identifiable zoning/land use districts that specifically recognize new or existing mobile home residential developments. These eight include: Davenport, Dundee, Eagle Lake, Lake Wales, Lakeland, Polk City, Winter Haven, and Polk County. "We permit them in mobile home parks and mobile home subdivisions, but not on individual lots," said Lakeland planner Bruce Kistler. (Palmer) Winter Haven also restricts mobile homes to mobile home parks.

Numerous zoning codes for Polk County (analyzed as part of this phase) and Hillsborough and Pinellas Counties (analyzed in an earlier phase of this project) include requirements that should be building codes—especially for tie downs, additions, foundations. Zoning officials, in many cases, do not have the expertise or training to enforce these requirements.

The duplication of information and requirements in the zoning codes and building codes is confusing to consumers, government officials, and building professionals. Often times, building code issues were added to zoning codes, because it was a simpler process to change the latter in certain municipalities. However, the result is a lack of clarity as to which code—zoning or building—addresses important health safety and welfare issues, such as tie downs, additions, and maintenance. The team was concerned about the significant number of site built attachments to mobile homes in the parks it visited. Most zoning codes have authority over the locations of residential structures, but the laws are unclear, or apparently unenforced, for mobile homes within parks. The site built additions are a significant cause of windborne debris in hurricanes.

Several jurisdictions contain mobile home anchorage requirements in their zoning regulations. While these documents' intention may be to draw emphasis to this critical need, the inclusion of these requirements in the zoning codes is problematic. This is an on-site construction matter that is more properly addressed in the communities' building codes. (In the field, the team observed many older mobile home units with rusting, missing, improperly installed tie-down straps).

No Polk County zoning codes specifically address mobile home maintenance.

In fact, poorly maintained units plague many areas of the county. For example, as reported in the *Tampa Tribune*:

For others, mobile home living is a necessity. Katrina Kirkland pays \$250 a month rent to live in a rundown trailer on a dirt road in Kathleen, a community north of Lakeland. She shares the home with her daughter, Beth Stephenson, and three grandchildren. The home isn't in the best shape, Stephenson said. "The windows leak and don't open. The walls are falling apart. If you look behind our couch, you can see daylight"<sup>10</sup>

According to *Strategic Regional Policy Plan*, Central Florida Regional Planning Council:

Mobile home communities, which are generally safer than individually sited units due to tougher development standards, are not being developed to meet the demand for affordable units among the two groups who need them the most: the farm workers and the low income wage earners.<sup>11</sup>

### *Land Use*

A threat to Polk County mobile home parks is incompatible land use. Polk County itself allows mobile home parks in several different land use zones. Many parks are not located in compatible zones, and are susceptible to development and commercial and other uses. It is often the parks in incompatible land uses are poorly maintained, and vulnerable in storms.

Of the 436 parks the team could locate, 273 are located in unincorporated Polk. About three-quarters are in compatible districts. (A detailed analysis was not conducted to determine whether or not the parks meet current zoning standards.) Those that are not are susceptible to development and commercial and other uses.



Some Polk County zoning ordinances address flood and wind damage control for future development but appear to have a limited impact on the existing conditions. Since these regulations usually apply only to new parks, or to new mobile homes within parks, most existing mobile home parks have not been upgraded. This is particularly problematic, because the 2000 flood maps for Polk County show that 40 percent of the county is in a flood zone. In Polk County, 109 out of 436 mobile home parks (that the team could locate) are positioned within 1000 feet of a lake or other waterway, the most likely flood hazard in this non-coastal area. Almost all are within a mile of a lake.

## Platting issues

Given the number of older mobile home units still in use today, it is reasonable to explore alternatives that will minimize the potential of human injury and loss of life, as well as major property damage and destruction resulting from their continued use. One approach is to adopt policies and regulatory measures for retiring or phasing out older mobile home units, and replacing them with small “site-built” houses. This approach suggests that older mobile home parks with units in excess of thirty years old, phase in a “cottage development” pattern (detached dwelling units), or one that incorporates a modest form of “party-wall” residential construction. This approach would over time, make use of the original mobile home lot platting patterns, by replacing older mobile homes with another form of affordable housing that will withstand the elements far greater than the older structures they replaced.

Most mobile home parks in Florida were platted for travel trailers; or older, small singlewide mobile homes. Modern larger mobile homes, with safer design features, do not fit on the older plats. Therefore park owners are unable to accommodate new mobile homes and maintain required setbacks. The team investigated several case studies of parks where these barriers exist, and propose solutions for replatting and/or modification of setbacks.

In general, mobile home parks tend to follow the patterns of larger residential subdivisions developed at the same time. That is, many were developed on a strict gridded format at a time when other residential communities were so-planned, and more recent parks have moved to an arterial model at the same time that residential suburbs have done so. Many mobile home parks also embody many of the principles of good urbanism: narrower, pedestrian-friendly roadways with low speed limits; the close proximity dwellings to the roadway; and the enhanced abilities of home occupants to observe and interact with passersby. Many parks have an abundance of front screened porches and lanais (due in part to the frontal orientation of the units and their smaller size which creates an incentive for residents to create additional spaces by adding outdoor living spaces) and gathering places (such as local community mailboxes, recreation centers, swimming pools, and management offices).

Park layout does not have a direct physical impact on storm survivability, but layouts can affect the sense of community. Strong community pride is directly related to safer neighborhoods with greater potential for successfully surviving major traumas such as hurricane and other storm events. Additionally, alternate park layouts may allow for increasing densities that would promote the economic viability of the manufactured home parks as businesses and thereby continue to provide a stable housing alternative.

The team analyzed “small unit” housing alternatives: structures that resemble mobile homes in size, configuration, and affordability. These newer, permanent homes are inherently safer due to the incorporation of stricter building codes. As well, being larger, they may reduce the need for out-buildings and attached structures.

Most manufactured home park share many similar characteristics, such as an emphasis on the narrow end of the lot facing the street, setbacks on all four sides of the unit that result in the unit being centrally located on its lot, and a lack of usable green space in the area immediately surrounding the unit.

Park reconfigurations involve the replacement of the current manufactured home stock with new, permanent structures. This would represent a substantial investment on the part of the homeowner and, if the land were still to be rented, may require a change in lease terms. It is possible to consider changing the legal structure such that the dwelling occupants own the lots. It is unlikely that the resulting homes would be as low-cost as the existing housing units. However, the changes would retain the higher density of the land use while still retaining the community characteristics of the existing parks.

The small parcel layout is common in older mobile home parks in the west central Florida area, and allowed for a convenient and economical use of land for platting purposes. While the resulting close proximity of individual mobile home units may suggest some degree of perceived shelter, the fact remains that the structural integrity of most, if not all of these homes is questionable under abnormal or extreme weather conditions.

The team found that it is not feasible, nor practical to try to renovate or upgrade older mobile homes. The costs associated with any such investment would not be effective in realizing any significant benefits. Any serious attempt at renovating these older structures would ultimately prove to be exorbitant in cost and face the following barriers (among others); an inability to support appreciating values, difficulty in complying with current codes, continuing poor performance in providing shelter that can reasonably withstand severe natural weather phenomena.

Several municipalities, in west central Florida have a variety of zoning and other code restrictions that do not allow mobile homes and mobile home parks. Most of these ordinances have “grandfathered in” many older mobile home facilities. Cities and counties are faced the challenge of what to do with these older mobile home structures, from a public safety point of view. Some are considering creating “small lot” or similar ordinances that permit small, site-built dwellings on atypically small lots. These types of ordinances would allow for the phased or sustained replacement of older mobile homes with more stable structures that will help minimize property loss and damage in severe weather conditions and also enhance the physical character of these communities. In many instances, the use of similar types of “replacement” ordinances can serve as progressive and proactive measures for minimizing mobile home property loss, as well as general public safety in these areas.

The team studied two precedents that can be looked at to provide insights on the use of small-lot platting for single-family housing, both in Pinellas County; Yachthaven, a mobile home park being converted to permanent housing in Largo; and the re-use of former mobile home lots in Indian Shores.

### *Yachthaven Estates*

Yachthaven Estates community area was developed as mobile home subdivision in unincorporated Pinellas County in the 1950s and through resident petition annexed into Largo in 1966 by referendum. There are 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 developed with mobile homes. 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.<sup>12</sup>

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.<sup>13</sup>

### *Indian Shores*

The Town of Indian Shores has initiated an effort to redevelop several acres of land that was originally platted for mobile homes back in the late 1940's. This "paper" subdivision, so named as a result of its original speculative and "impermanent" nature, is currently in the city's Town Square Planning Area. It was originally laid out as five slender blocks running parallel the main north-south thoroughfare. Characteristic of a typical surveyor's plat for a mobile home park, this area had just fewer than 200 lots each with dimensions of 25 feet by 40 feet. Although all of the original mobile homes are gone, several of the lots were improved over the years with various types of site-built structures. Today, the town is considering redeveloping the remaining vacant lots in this subdivision with various types of "live/work" townhouses. This type of party wall construction is very appropriate for this type of narrow-lot platting. Several years ago, the Town enacted restrictions on placing mobile homes on these lots because of their proximity to the Gulf coast and the likelihood of major property damage following a hurricane or storm. This has created an opportunity for the Town to re-claim all of the land from this former mobile home park and adapt it to a small-lot subdivision with a more stable form of site-built houses.

## KEY FINDINGS

While this project focused on obstacles to upgrading mobile home parks, identified an even larger problem in west central Florida—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 least advantaged 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. 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.

In the process of conducting the research for this report, the researchers discovered numerous gaps in information that impeded the team's progress. These same gaps can be barriers to upgrading mobile home parks in west central Florida.

The estimate of the number of mobile homes in Polk County varies widely. In Spring 2002, for example, the Tampa Tribune estimated that there are 84,000 mobile homes in the county, while the Lakeland Ledger estimated the number to be 50,000. The Ledger's on-line guide to the county gives different number: 61,000 mobile homes. The research team counted 46,000 mobile home spaces in mobile home parks from data provided by the Department of Health. The wide range of estimates indicates that there are probably a large number of mobile homes that are not accounted for (and not inspected).

Addresses for mobile home parks in Polk County are listed in a wide range of formats on Department of Health documents. The same road might be indicated by its local informal name; by the county, state, or federal route number; or in some other manner. These discrepancies made it very difficult for the team to geocode many of the parks for the GIS based maps. Site plans of mobile home parks on file are presented in a wide range of formats. Many are sketched, not to scale, and/or not accurate. These poorly drawn site plans make it difficult for inspectors to identify possible zoning or building code violations. Also, representatives of government agencies are not always aware of how to find these site plans. For example, representatives of the planning and building departments for several jurisdictions, had no copies of these site plans, and were not aware what agency did have them.

Only 11 of the 18 jurisdictions in Polk County have zoning information available through Municode or other searchable means. However, even this information is not easily found through most of the communities' web sites. Polk County does have a link to frequently asked questions about developing mobile homes in the unincorporated county.

While 40 percent of Polk County is in flood zones, this information is not available on line. By comparison, several Florida counties include storm surge and flood maps on their web sites, as a means of educating the public. Similarly, GIS based information for land use, demographics, and other conditions in Polk County are not readily accessible.

The review of the many codes and ordinances indicates that multiple regulatory approaches are used to render such developments economically unfeasible. These zoning regulations attempt to mitigate the scope of damage to mobile homes as the result of hurricanes by attempting to limit further mobile home developments. It cannot be contended that local land use regulations or political factors have forced mobile home parks into high hazard areas, as most mobile homes in Polk County were constructed before hazardous areas were clearly articulated and mapped.

Zoning ordinances address flood damage control for future development but appear to have a limited impact on the existing conditions. Local zoning codes do attempt to mitigate flood damage, but they do not appear to make any positive attempts to provide similar protection against damage caused by high winds. Many jurisdictions contain mobile home anchorage requirements in their zoning regulations. While these documents' intention may be to draw emphasis to this critical need, the inclusion of these requirements in the zoning codes is problematic.

Many existing parks maintained an obvious sense of community pride. These parks foster positive interaction between management, residents in the park, and in the neighboring area. However numerous parks appear to suffer from confusing site design, poorly managed operations, and little interaction between residents. The residents of these parks seem less concerned and informed about storm related issues. Good community design appears to facilitate communication about hurricane matters.

## NOTES

1. See complete report on the International Hurricane Research Center web site:  
[http://www.ihrc.fiu.edu/lwer/hlmp\\_index.htm](http://www.ihrc.fiu.edu/lwer/hlmp_index.htm)
2. Deborah Alberto, "Polk Mobile-izing," *Tampa Tribune* (May 6, 2002): 1.
3. Robin Benedick, "A Test of Strength," *South Florida Sun Sentinel* (November 26, 2004): 1
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