

4 Sustainable Housing Options to Meet Housing Needs Today and Tomorrow

Sustainability generally means that the decisions we make today, and the resources we use today, do not compromise future generations. The following discussion elaborates on new and old techniques that offer creative and sustainable solutions to the issue of affordability.

CHANGING THE MARKET AND CHANGING PERCEPTIONS – SMALLER HOUSES AND MANUFACTURED/MODULAR HOUSING

A smaller home can be economical in resources and superior in energy efficiency. Smaller homes leave a smaller footprint on the earth in many ways: fewer trees are cut down, less earth is bulldozed, less petroleum is burned, less steel is mined, etc. There are also personal advantages to living in a smaller home. There is less to clean and maintain, small houses are cheaper to buy and build, and they are inherently energy efficient.

In Pinellas County in 2005, according to the 2005 *Housing Report*, the median size of a *new* single-family home was 2,147 square feet. Of *existing* single-family homes that sold in Pinellas County during that same year, the median size was 1,363 square feet. As the population has grown in Pinellas County, so has the size of the average single-family home. This growth in home sizes is not just limited to single-family houses. The median size of a new condominium in Pinellas County in 2005 was 1,800 square feet. Meanwhile, the Pinellas County School District reports a declining population of school-aged children suggesting that the size of these newly built homes does not reflect an increasing family size that would warrant all of that additional space.

The trend across the country over the recent past has been towards building larger homes, often rebuilding large houses in modest neighborhoods, disrupting the character and scale of the neighborhood. Families without children are often buying homes with multiple bedrooms and additional rooms that may go un-used or under utilized. To build such large homes, a great deal of raw material is needed and in turn, a large amount of waste is produced during construction. Larger homes also require a significantly greater amount of energy to maintain, consuming more energy for cooling and lighting costs. The result is that these larger homes are also often unaffordable to the average family. With an average household income in 2005 of \$40,694, and a median housing price of \$356,400, many Pinellas County residents cannot afford the new homes being built. (Please see the section in this Element on housing cost burden for more information).

The idea of more sustainable housing, for both the environment and the consumer, is starting to take hold though. The interest in green building is increasing and many communities are starting to encourage, and even require, designs and construction practices that have less of a “footprint” on the environment – and on the consumer’s pocket book! Two key initiatives with the ability to make an immediate impact are: more realistically-sized housing and requiring energy efficiency in design and appliances.

Smaller Houses and Cottage Housing

Overall, **smaller homes** can be more affordable to construct as they require less materials and less land. Features like vaulted ceilings and big windows, for example, can mean higher heating and cooling costs. Promoting a more realistic scale of housing to builders may increase the inventory of affordable housing and provide more affordable options than just apartment living. Cottage houses, mobile homes, manufactured housing and modern manufactured housing are all examples of smaller homes that are generally more affordable than site-built homes.

Cottage houses are usually less than 1,000 square feet, detached, single-family homes. These houses incorporate many of the traditional single-family amenities, but they occupy smaller lots, meaning more can be built in less space, and maintain the neighborhood feel of single-family subdivisions. Currently, lot size requirements usually restrict the ability to cluster “cottage-style” homes in a neighborhood. A small house on a big lot is cost prohibitive to both the builder and the prospective owner. By adjusting lot size requirements, cottage housing units would be able to be constructed on smaller lots, allowing the developer to build more units, making a more affordable product for the consumer, and still making a profit.

Manufactured and Modular Housing as an Affordable Housing Option

Manufactured home communities (and mobile home parks) currently provide some of the most affordable housing in Pinellas County, providing over 49,000 housing units as of 2007. However, with the escalating land values of the recent past, and the diminishing availability of vacant developable land, mobile home parks became easy targets for redevelopment. No new manufactured home communities have been built in recent years, and, countywide, the mobile/manufactured inventory has reduced by 4,939 units since 2006, resulting in fewer and fewer affordable housing options. (**Appendix D** provides an inventory of mobile/manufactured housing in Pinellas County as of 2007, as well as a table depicting the loss of mobile/manufactured homes over the past two years).

Cost of Manufactured Housing

According to the Manufactured Housing Institute, manufactured homes cost considerably less than those that are site-built. According to **Table 21**, purchase prices of manufactured homes increased by only 27 percent between 1994 and 2000 while the site-built home purchase price increased by approximately 40 percent during the same time period.

TABLE 21
Cost Comparison of Manufactured Versus Site-Built Homes

	Average Sales Price		
	1994	1997	2000
New single-section manufactured homes	\$23,900	\$29,400	\$30,400
New multi-section manufactured homes	\$41,800	\$47,300	\$53,900
All new manufactured homes	\$32,900	\$40,000	\$46,500
New single-family site-built homes	\$115,575	\$138,450	\$162,300

Note: Price of manufactured homes includes the installation of the home but excludes land costs. Price of site-built homes includes land cost (house and land sold as a package).

Source: Manufactured Housing Institute 2002

Table 22 compares manufactured and site built homes based upon their cost per square foot. Again, here it is clear that manufactured home cost much less than their site-built counterparts. Also in this Table, land costs are not included for manufactured homes, but the costs of the land would not drive the cost of manufactured housing above that of site-built housing, when the homes are of similar size.

TABLE 22
Cost Per Square Foot Comparison of Manufactured Versus Site-Built Homes

	Cost Per Square Feet (\$)		
	1994	1997	2000
New single-section manufactured homes	\$22	\$25	\$27
New multi-section manufactured homes	\$27	\$30	\$32
All new manufactured homes	\$25	\$28	\$31
New single-family site-built homes	\$55	\$65	\$73

Note: Cost includes installation of manufactured home and includes land price for new single-family site-built homes.
Source: Manufactured Housing Institute, 2002.

Modular Housing

Modular homes are homes that are built in a factory controlled environment in sections. These sections are then transported to the building site where they are pieced together and finished. Unlike a manufactured home, which arrives at the home site mostly completed, a modular home requires a good deal of finishing work including electrical wiring, plumbing installation, walls need to be put together, interior finishing work, and other construction components. Modular homes must be built in accordance to the local building code, as must regular site-built homes, and must be built on a permanent foundation. These homes contrast with everyday site-built homes because some of their pieces are constructed within a factory and sent to the home site to be put together.

In Pinellas County, modular homes are referred to as Residential Design Manufactured Homes (RDMH). In order to be placed within any single-family residential zoning category, they are subject to site-plan review and must meet specific criteria ensuring that the home is compatible with the surrounding neighborhood. Approval for a RDMH is not granted unless it is found that the “RDMH is substantially similar in size, siding, material, roof pitch, roof material, foundation (this point is where the RDMH-modular home-varies from a modern manufactured home) and general appearance to site-built housing which may be permitted by the zoning and/or building code in the neighborhood in the same zoning district.” (Pinellas County Zoning Code, Chapter 138.1343)

Because modular homes are built largely in a factory-controlled environment, costs are often lower than with site-built homes. Weather delays do not contribute to cost over-runs when constructing a modular home and the home can be constructed more quickly than traditional site-built homes. Overall, modular housing presents a viable, creative and attractive affordable housing alternative in Pinellas County.

The Future of Manufactured and Modular Housing

Manufactured and modular housing can offer an affordable housing option, especially in Pinellas County, where land values are very high and citizens are being priced-out of the local housing market. This especially affects those working in the service and retail industries, which employ a significant portion of the labor force in Pinellas County. These citizens are often forced to look outside of the County for housing options, often commuting long distances to their places of employment. By encouraging the replacement of mobile homes with modern manufactured or modular housing, Pinellas County will be able to preserve and enhance its existing stock of affordable housing and enable the continued residence of those working in the service, retail and other sectors within the County borders.

GREEN BUILDING STANDARDS EQUATE TO LONG TERM AFFORDABILITY

Green building has become increasingly common throughout the United States, and there are a variety of ‘green’ construction methods that have become highly regarded in terms of sustainability and energy efficiency including: advanced framing/insulation; high efficiency water heaters; efficient household appliances; air sealing the drywall; using low-pile or less allergen-attracting carpet; using low-VOC (Volatile Organic Compound) paints to reduce toxic off-gassing; rainwater collection systems; installing low-flow faucets; and installing glazed windows. Each of these practices can earn a builder a certain number of points in the quest for a ‘green’ house under Florida’s Green Building Coalition guidelines or LEED certification. These practices address things like reducing the amount of waste produced during construction, reducing the amount of energy the home will consume during its lifetime, etc. Below is a description of some of the ‘green’ construction methods listed above and how they impact energy efficiency in homes.

According to Built Green™, a program of the Master Builders Association in Partnership with King and Snohomish Counties in Washington, advanced framing and insulation techniques use 30% less lumber, takes less time to construct and costs less to build. In this technique, structural insulated panels are used to frame a house, instead of the typical framing and adding fiberglass insulation at a later time. Unlike fiberglass insulation, the foam insulation in

the panels does not lose its efficiency over time, and provides a greater value of insulation. This technique can save 2-4% of total energy use for a home.

Water heaters are known to use, and waste, a high amount of energy. As water sits in the tanks, heat is lost through the tank walls and must be re-heated continuously so that it is ready on-demand. If water heaters are located on the opposite side of a home from a faucet, the water loses heat as it travels through the pipes to its desired location. By insulating the water heater tank and the pipes, less energy will be lost while not in use and when traveling to the desired location. Tank-less water heaters are another option to conserve on energy costs. These systems heat water only when it is needed and do not require a tank to continuously heat water throughout the day. While electricity-powered tank-less water heaters have been reported to impact neighborhood electricity use in some situations, those that are powered by natural gas may be a better option and do not have an impact on the electrical grid.

Pinellas County has a sub-tropical climate, and is subject to both a rainy and a dry season. During the dry season, many citizens opt to irrigate their lawns and ornamental plants in order to maintain them for recreational and aesthetic purposes. According to the Florida Department of Environmental Protection, up to one half of all potable water in Florida is used for irrigation. By installing a rainwater collection system, homes can utilize rainwater runoff that may otherwise flow into surrounding surface water bodies, for irrigation of plants and lawns. This would reduce the costs associated with using potable water for irrigation, and have a positive impact on the environment, as less potable water would be being used for lawns and the quality of the area surface waters would be protected from polluted runoff.

These are just a few of the possible ‘green’ building techniques that can be applied to homes built in Pinellas County that would benefit not only the natural environment and conserve resources, but would also ensure the long-term affordability of homes as the homeowners will have to pay less to maintain their homes in the long run. High energy and utility bills are often not budgeted by families of modest incomes, and by utilizing energy-efficient practices around the home, these financial impacts can be minimized.

LIVABLE COMMUNITIES - BALANCING HOUSING DECISIONS WITH INFRASTRUCTURE CAPACITIES, ENVIRONMENTAL CONDITIONS AND LIMITATIONS, AND PUBLIC SAFETY

The term “livable communities” is used to describe urban environments where walking, bicycling and transit service is safe, comfortable and efficient and where the physical environment offers an interesting and unique experience from the standpoint of street, land and building design. Another key aspect of livable communities is the mixing of land uses which allows people to live closer to their points of destination such as shopping and work locations.

The Pinellas County Metropolitan Planning Organization (MPO) initiated a program to develop a set of model comprehensive plan policies and land development codes designed to implement livable community features in the design and construction of streetscape improvements and land development projects. A number of these objectives and policies have been incorporated into the *Future Land Use and Quality Communities Element* to provide the policy framework for the subsequent update of the Pinellas County Land Development Code. It

is the goal of the program to improve the quality of life in Pinellas County by providing diverse, well-designed and walkable destinations while creating and maintaining choices in housing, offices, retail, workplaces and travel modes.

PRESERVING AND IMPROVING THE EXISTING HOUSING STOCK

An often overlooked sustainable housing practice is the value of preserving the housing stock, including the diversity of housing options, in place today. A significant portion of Pinellas County is developed in some sort of residential use. As addressed in **Table 2**, much of the housing was developed prior to 1990. Frequently, the older Florida homes were built to take advantage of natural cross ventilation, windows opened, houses were elevated to allow for cooling airflow underneath, etc. In other words, they were naturally energy efficient. Older construction often included *heart of pine*, a naturally insect resistant wood. Older, established neighborhoods were frequently diverse, with different housing types, characters and styles, and often, a variety of neighborhood services and neighborhood schools were within walking distance. Much of that housing stock is aging, but with the high cost of new home construction, perhaps the *most* affordable housing product for the affordable market is the *existing* home. And by directing monies to neighborhood improvements and revitalization areas, and promoting loans and other methods of improving existing construction, and by working closely with the real estate industry, perhaps Pinellas County can take better advantage of existing affordable assets. From a sustainability perspective, a home that is already built has less of an impact, or “footprint,” than a home that requires all new resources to be built. Existing housing stock is a valuable contributor to a sustainable and affordable future.