

Forecasting Housing Trends in the City of Stuart, Florida



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ABSTRACT

The Government of the City of Stuart is dedicated to promoting the highest quality of life for its citizens. One of the many challenges facing the City as it works to fulfill this mission is to monitor and forecast housing trends within the community. The City chose GIS as tool to provide an early warning system for declines in housing values or increases in rental properties. A baseline of current housing values and percentage of owner-occupied vs. rental units was established. Annual review of the housing trends using GIS will provide critical advance planning information for the City.

INTRODUCTION

The City of Stuart is a waterfront community located on the southeast coast of Florida in Martin County. According to the 2000 U.S. Census, the City has a population of 14,633 residents. The City Limits contain 5,647 acres or 8.83 square miles. Portions of the City Limits include the St. Lucie River, the South Fork of the St. Lucie River and the Intracoastal Waterway connecting the East and West Coasts of Florida.

The City of Stuart enjoys the benefits of a mature and robust Geographic Information System. Existing layers within the City's GIS include a parcel basemap joined to the most current version of the Martin County Property Appraiser's database, a site address point layer containing field verified site addresses, public utilities layers including water, sanitary and stormwater, street centerlines, and many other GIS layers.



PROJECT SCOPE

The City Manager, Mr. David Collier, and City Planner, Mrs. Kim DeLaney retained the services of NorthStar Geomatics, Inc. to use GIS to analyze the housing stock within the City of Stuart. The project scope included the use of the City's existing GIS and current Property Appraiser data to identify the quantity and value of owner occupied and rental single family as well as owner occupied and rental multifamily units within the City. This initial data would be utilized to establish baselines for future housing trend analyses using GIS.

METHODOLOGY AND RESULTS

In order to begin the housing study analysis, the current Property Appraiser's database was joined by NorthStar using ArcGIS to the parcel basemap of the City of Stuart using the parcel control number. A query was then performed to identify those parcels lying within the City of Stuart by selecting those parcels containing the tax millage code established for the City of Stuart. Each municipality in Florida has a distinct millage code that is provided to the Florida Department of Revenue through the annual tax roll provided by the County Property Appraiser. Those parcels lying within the municipality also contain the municipal millage code as an attribute in the Property Appraiser's (PAO) database.

Once the parcels within the City were selected based on their millage code, the real work of identifying the residential properties, their values, and whether they were rental or owner-occupied could begin.

To identify the housing units in the City that would be included in the study, the PAO database was once again utilized. Within the PAO database, a state reporting code required by the Florida Department of Revenue is provided for each parcel. These codes identify the specific use of the parcel such as single family residential, commercial, condominium, and many other possible uses. As licensing of rental property is not currently required by the City of Stuart, the use and understanding of the PAO database and the state reporting codes became crucial to the success of the study. A portion of the state reporting codes for Florida is provided in Figure 1.

SAMPLING OF STATE REPORTING CODES & DEFINITIONS

<u>CODE</u>	<u>DEFINITIONS</u>
0000	Vacant Residential
0080	Vacant, Unit Value Only
0100	Single Family
0108	Single Family Attached
0110	Single Fam/Land Use Comm
0112	Residential Comm Mixed Use
0180	Single Family Unit Value Only
0182	Single Family Res Rec Area
0200	Mobile Home
0204	Mobile Home Condo
0210	Mobile Home Rental Park
0211	Mobile Home Park Store
0282	Mobile Home Rec Area

Figure 1

For the City of Stuart housing study, the state use code for condominiums, single family residences and multi-family units were used to create two selection sets for the analysis. These two sets were single family residences and multi-family residences. Multi-family residences included apartments, mobile homes, and condominiums.

Once this selection set was created, the values of each parcel from the PAO database could be determined. Based on this selection set, the number of units in each category and the values of each were determined.

An interesting challenge developed in attempting to determine the value of the multi-family units such as apartment complexes. The PAO database provided a single taxable value for an entire apartment parcel which contains many individual housing units. It was this number of individual units and values that the City was most interested in. In order to accomplish this, the City addressing point layer was used in the analysis.

Recently, the City completed its address point layer consisting of a single address point for each site address in the City. These points were geo-referenced using orthophotography to the extent that condo and apartment address points were

actually placed on the rooftop of the structure. The City Police and Fire/Rescue Department assisted by field verifying the condominium and apartment addresses.

For the multi-family parcels such as apartments and rental mobile home parks, the parcel polygons were intersected with the address points and the total value of the multi-family parcels was divided by the number of addresses, or units. This technique proved to be very effective and would not be possible without the City's investment in creating the addressing point layer.

The results of the single-family vs. multi-family analysis including value ranges are summarized below in Figure 2.

Single Family vs. Multi-Family

	Less than \$20,000	\$20,000 to \$40,000	\$40,000 to \$60,000	\$60,000 to \$80,000	\$80,000 to \$100,000	\$100,000 and Above	
Single Family	96	118	517	479	437	829	2476
	96	214	731	1210	1647	2476	
	3.9%	4.8%	20.9%	19.3%	17.6%	33.5%	100.0%
	3.9%	8.6%	29.5%	48.9%	66.5%	100.0%	

	Less than \$20,000	\$20,000 to \$40,000	\$40,000 to \$60,000	\$60,000 to \$80,000	\$80,000 to \$100,000	\$100,000 and Above	
Multi-Family	344	2051	1818	460	160	192	5025
	344	2395	4213	4673	4833	5025	
	6.8%	40.8%	36.2%	9.2%	3.2%	3.8%	100.0%
	6.8%	47.7%	83.8%	93.0%	96.2%	100.0%	

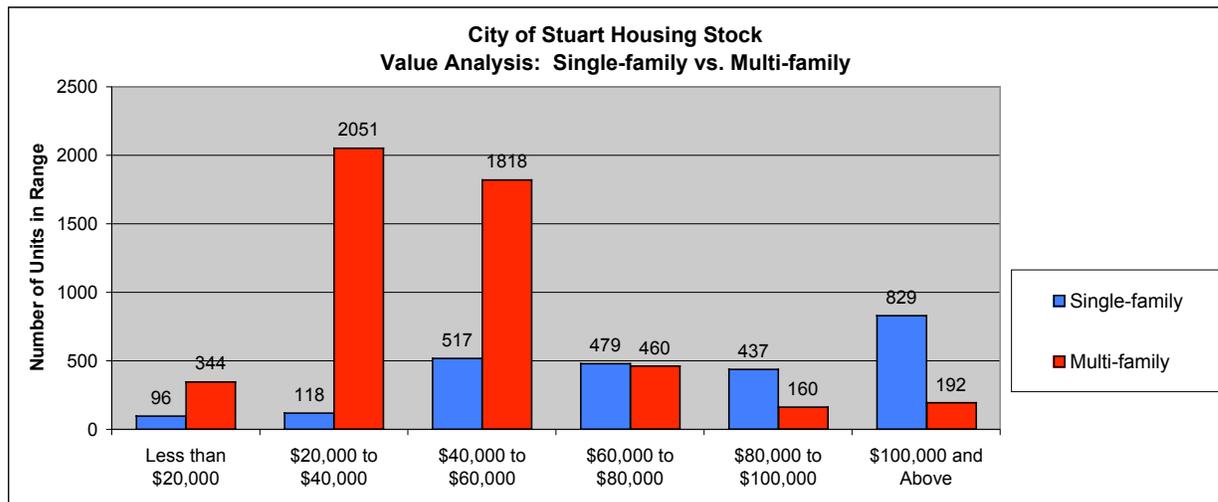


Figure 2

At this point in the analysis, it became necessary to identify those residential properties that were owner-occupied and those units which were rental. The technique utilized in this analysis was to select those parcels which claimed homestead exemption. In the state of Florida, a property owner is entitled to claim a homestead exemption which could reduce the taxable value of the property by up to \$25,000. The property must be the principal residence of the owner, and certain other conditions must also be met to claim the exemption. In addition to homestead, there are other types of tax exemptions available to Florida residents, and these exemptions were systematically removed from the selection set.

Based on taxable exemption amount for each parcel as listed in the PAO database, a query was performed to identify those parcels with a taxable value exemption that matched the range of homestead exemptions. Figure 3 illustrates the results of this analysis.

Owner Occupied vs. Rental*

Owner Occupied	3602
Rental*	3899
	7501

	Less than \$20,000	\$20,000 to \$40,000	\$40,000 to \$60,000	\$60,000 to \$80,000	\$80,000 to \$100,000	\$100,000 and Above	
Owner Occupied	12	391	1313	629	470	787	3602
	12	403	1716	2345	2815	3602	
	0.3%	10.9%	36.5%	17.5%	13.0%	21.8%	100.0%
	0.3%	11.2%	47.6%	65.1%	78.2%	100.0%	

	Less than \$20,000	\$20,000 to \$40,000	\$40,000 to \$60,000	\$60,000 to \$80,000	\$80,000 to \$100,000	\$100,000 and Above	
Rental*	428	1778	1022	310	127	234	3899
	428	2206	3228	3538	3665	3899	
	11.0%	45.6%	26.2%	8.0%	3.3%	6.0%	100.0%
	11.0%	56.6%	82.8%	90.7%	94.0%	100.0%	

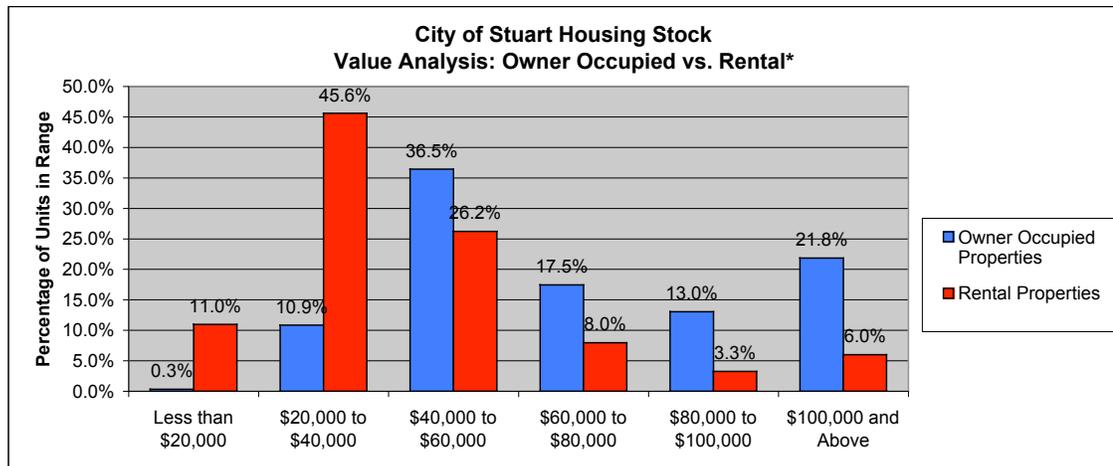


Figure 3

*Rental units are considered those without homestead exemption and include single family, duplex and multi-family properties. This may include seasonal properties.

Once the selection has been made for single-family versus multi-family, owner occupied versus rental, the results of the study can be further analyzed in the following summaries:

- Rental single-family vs. rental multi-family (Figure 4)
- Owner single-family vs. owner multi-family (Figure 5)
- Summary chart of ownership percentages (Figure 6)

Rental* Single-family vs. Rental* Multi-family

	Less than \$20,000	\$20,000 to \$40,000	\$40,000 to \$60,000	\$60,000 to \$80,000	\$80,000 to \$100,000	\$100,000 and Above	
Rental* Single-family	85	87	202	130	84	149	737
	85	172	374	504	588	737	
	11.5%	11.8%	27.4%	17.6%	11.4%	20.2%	100.0%
	11.5%	23.3%	50.7%	68.4%	79.8%	100.0%	

	Less than \$20,000	\$20,000 to \$40,000	\$40,000 to \$60,000	\$60,000 to \$80,000	\$80,000 to \$100,000	\$100,000 and Above	
Rental* Multi-family	343	1691	820	180	43	85	3162
	343	2034	2854	3034	3077	3162	
	10.8%	53.5%	25.9%	5.7%	1.4%	2.7%	100.0%
	10.8%	64.3%	90.3%	96.0%	97.3%	100.0%	

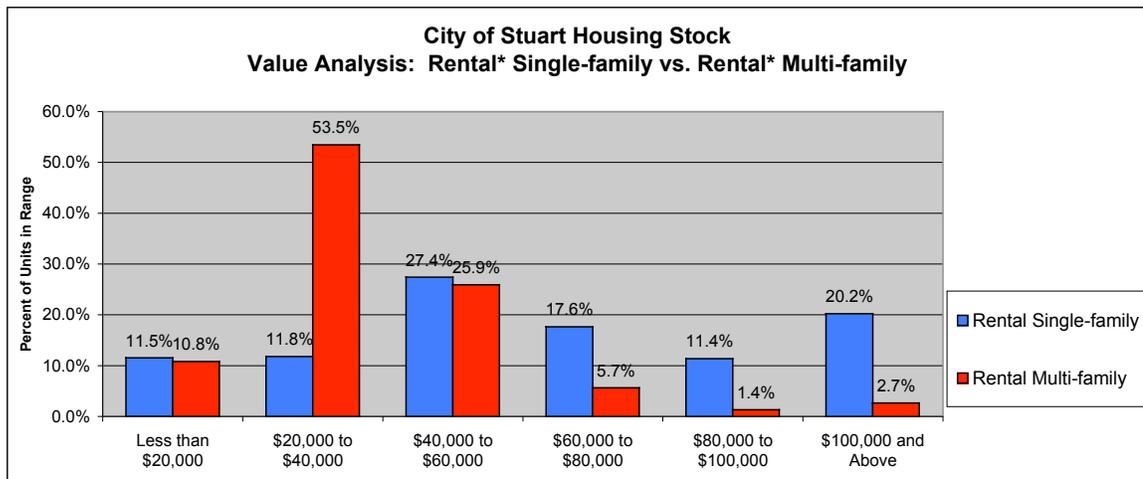


Figure 4

Owner Single Family vs. Owner Multi-Family

	Less than \$20,000	\$20,000 to \$40,000	\$40,000 to \$60,000	\$60,000 to \$80,000	\$80,000 to \$100,000	\$100,000 and Above	
Owner Single Family	11	31	315	349	353	680	1739
	11	42	357	706	1059	1739	
	0.6%	1.8%	18.1%	20.1%	20.3%	39.1%	100.0%
	0.6%	2.4%	20.5%	40.6%	60.9%	100.0%	

	Less than \$20,000	\$20,000 to \$40,000	\$40,000 to \$60,000	\$60,000 to \$80,000	\$80,000 to \$100,000	\$100,000 and Above	
Owner Multi-Family	1	361	997	280	117	107	1863
	1	362	1359	1639	1756	1863	
	0.1%	19.4%	53.5%	15.0%	6.3%	5.7%	100.0%
	0.1%	19.4%	72.9%	88.0%	94.3%	100.0%	

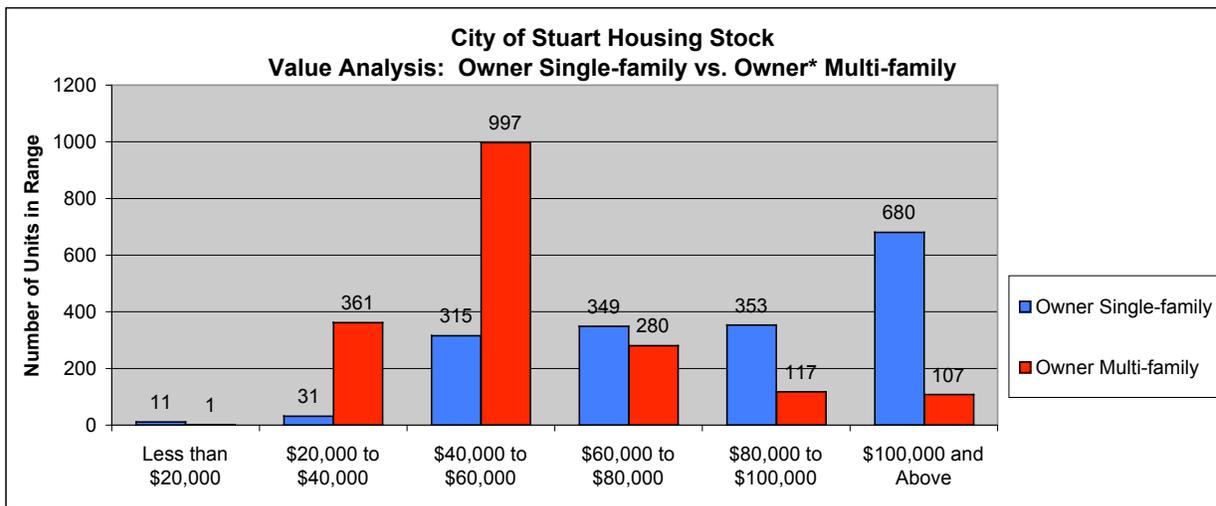


Figure 5

MF Owner	1863
MF Rental	3162
SF Rental	737
SF Owner	1739

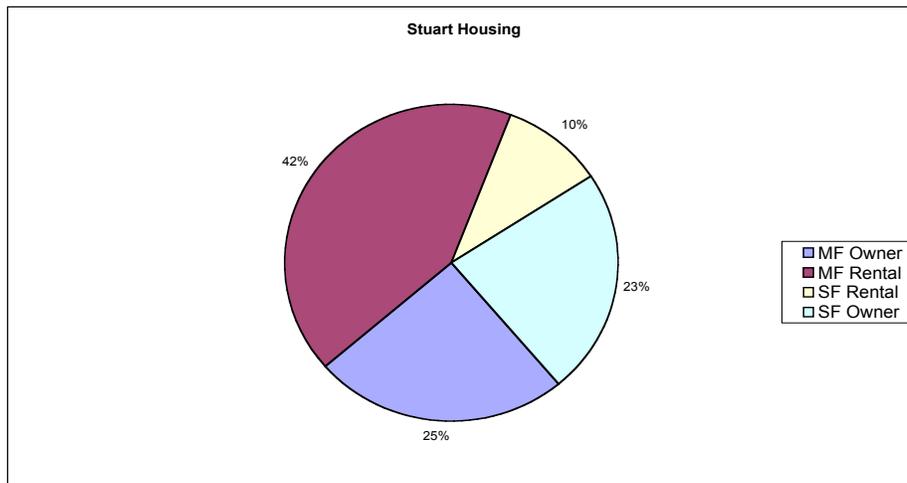


Figure 6

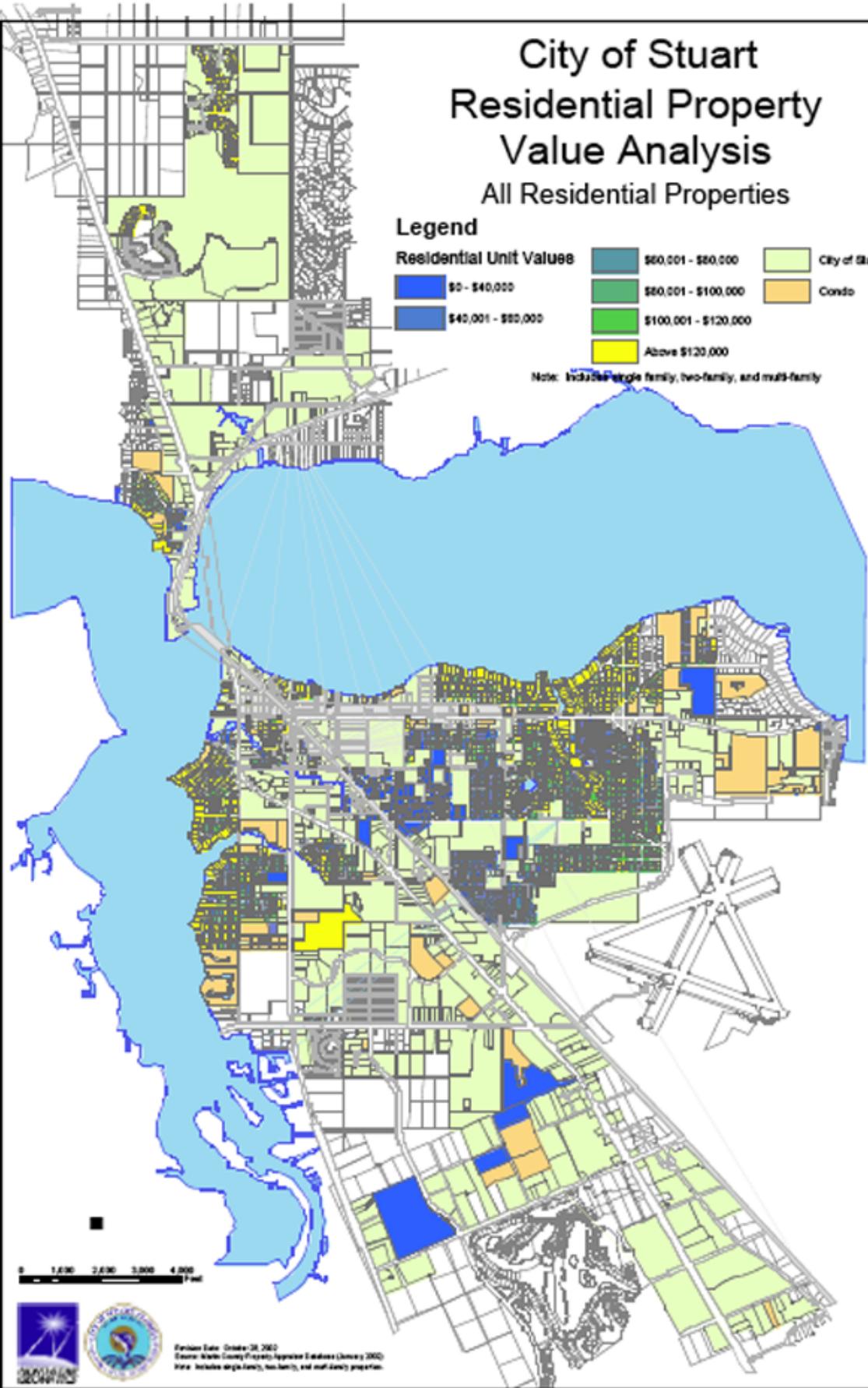
In addition to the tables and chart, a GIS map can easily be produced illustrating any particular results of the analysis. The map below identifies the values of residential property within the City.

City of Stuart Residential Property Value Analysis All Residential Properties

Legend

Residential Unit Values		
	\$0 - \$40,000	
	\$40,001 - \$80,000	
	\$80,001 - \$100,000	
	\$100,001 - \$120,000	
	Above \$120,000	

Note: Includes single family, two-family, and multi-family



0 1,000 2,000 3,000 4,000 Feet



Florida Date: October 28, 2002
 Source: Martin County Property Appraiser's Database (January 2002)
 Note: Includes single-family, two-family, and multi-family properties.

CONCLUSIONS

The City of Stuart Housing Study demonstrates that the City's investment in GIS technology is providing a significant return to the citizens of Stuart. The City's integration of the Property Appraiser's database and State reporting codes into the City's GIS has leveraged the City's potential for using GIS to analyze current challenges and to prepare for the future.

From the perspective of Kim DeLaney, Stuart City Planner, the housing analysis conducted by NorthStar Geomatics was a highly valuable exercise for the City of Stuart. It confirmed many long-held suspicions regarding the values and quantities of various types of housing in the City and provided unique insight into Stuart's total housing picture. With regards to the City's neighborhood planning efforts, this analysis will allow the City to develop an "early warning system" to identify neighborhoods transitioning from owner-occupied to rental. Likewise, for strategic planning purposes, the data allows for the identification of neighborhoods with either increasing or decreasing values over time, and appropriate planning and improvement programs will be developed accordingly. Where possible, the housing analysis may also be used to support grant applications for various programs (e.g., infrastructure, development of neighborhood associations).



NorthStar Geomatics is currently working with the City to further refine the results of the housing study to identify the number of seasonal properties that are not rented during the summer months and to further analyze housing trends at the neighborhood level.

City of Stuart management, staff and NorthStar Geomatics agree that in the absence of GIS technology, an analysis of this nature would have been rudimentary at best, and none of the map products would have been feasible. However, with the GIS role in this specific analysis, the City now has a baseline assemblage of information which can be updated regularly, will improve long-term planning decisions, and help the City better serve its residents and property owners.

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