
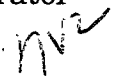


**MARTIN COUNTY, FLORIDA  
INTER-OFFICE MEMORANDUM**

**TO:** The Honorable Board of County  
Commissioners

**DATE:** November 24, 2003

**VIA:** Russ Blackburn   
County Administrator

**FROM:** Nicki van Vonno   
Growth Mangement Director

**MEMO:** gmp04m.050

**SUBJECT:** Residential Capacity Study

On November 18, 2003, the Staff presented the results of a residential capacity study (Item 8C1). The Board took no action on the study but requested that Staff simply submit the Study to the commissioners in the form of a memorandum. The Board also requested that all assumptions relating to the study be included.

1. The Residential Capacity Study is attached. This report is the same as that submitted to the Board for November 18, 2003 except for the following minor corrections:

- On page 2, Section D., Conclusions and Recommendations, has been deleted and subsequent sections renumbered. Section "D" was an incomplete remnant of an earlier draft and should not have appeared in the final report.
- On page 3, Item 10 describes an adjustment related to the figures for the High Density and Mobile Home Density categories which was appropriate due to lack of examples in the study period. The assumption described in Item 10 is reflected in Table 3 (the capacity estimates using the "typical" residential densities) but this detail is was inadvertently omitted from the summary table on that same page.

2. Study assumptions.

- In Tables 2 and 3 of the report, the annual demand for residential units is estimated by using the current population projections and an assumption of the average number of persons per household. A worksheet showing how the annual demand was calculated is now provided at the end of the report.
- On November 18, 2003, Staff made references to assumptions regarding data taken from the Property Appraiser's (tax roll) database. Staff was actually referring to the assumptions outlined in Part I of EDAW's Vacant Residential Land Study (the

inventory portion of the study). The assumptions of Part I can be summarized as follows:

- a. Within the study area (Primary and Secondary Urban Service Districts), the best indication of vacant land available for residential development is the Property Appraiser's State Reporting Code (SRC). The SRC code is a standardized system of categorizing parcels for property appraisal purposes. The following codes were assumed to be indicative of vacant residential parcels:

SRC Code	Description	Notes
0000	Vacant Residential	
0080	Vacant, unit value only	Example: Vacant portions of a condominium project
5100 through 6900	Various agricultural uses	Agricultural uses (e.g., cattle grazing) occurring within the USD and within the study area were assumed to be nonconforming uses and easily convertible to residential uses.
9900 through 9902	Various types of vacant acreage	Example: unplatted tracts of land not used for agriculture

- b. EDAW used the data from the 2002 Tax Roll, meaning that the classification of individual parcels was current through December 31, 2001.
- c. Due to the fact that the GIS parcel boundaries available to the County were only updated through 1995, it was necessary to compare EDAW's initial findings against the April 2000 digital aerial photos (the most current aerial photos available in that format). Where large parcels (>5acres) were mis-designated due to the use of the 1995 parcel coverage, GMD Staff made manual corrections in order to minimize any discrepancies (only eight areas were corrected in this manner).
- d. Within the lands indicated as "vacant residential lands", the acreage of wetlands was determined by using the County's Composite Wetlands Map coverage. The Martin County Composite Wetland Map, which is adopted as Figure 9-1 of the Comprehensive Growth Management Plan, is made up of 1981 Hydric Soils data, the 1985 National Wetlands Inventory data, and satellite classification data (Thematic Mapper and SPOT data) from multiple years, along with Martin County environmental field data. As has been the practice for various County studies, areas indicated as being wetlands by any two of the three listed data sources were assumed to be wetlands.

ATTACHMENTS:

Residential Capacity Within the PUSD and SUSD [gmp04d.015]

Residential demand worksheet [gmpo4d.015]

Alternative Study of "Typical" Residential Densities [gmp04d.016]

Vacant Residential Land Study, Part I [gmp04d.018]

cc.

Russ Blackburn, County Administrator

Dan Hudson, Deputy County Administrator

Stephen Fry, County Attorney

File: LU - Vacant Residential Land Study

NV/dq

**Residential Capacity Within the Primary and Secondary Urban Service Districts**  
Prepared by Growth Management Dept. October 23, 2003

**TABLE 1. FACTORS AFFECTING RESIDENTIAL CAPACITY OF VACANT RESIDENTIAL LANDS**

USD STUDY AREA, EXCLUDING INDIANTOWN					
Future Land Use Designation	Vacant Land in Primary USD (acres) (1)	Vacant Land in Second USD (acres) (2)	Total Vacant Land in USD Area (acres) (3)	Wetlands (acres) (4)	Total Vacant Upland (acres) (5)
Estate Density 1 UPA	32	105	137	25	112
Estate Density 2 UPA	2,229	0	2,229	619	1,611
High Density	54	0	54	1	53
Low Density	2,153	2	2,155	637	1,518
Medium Density	599	0	599	63	536
Mobile Home	160	0	160	34	126
Rural Density	1,641	4,517	6,158	1,379	4,779
Total	6,868	4,624	11,492	2,757	8,735

USD STUDY AREA, INDIANTOWN ONLY					
Future Land Use Designation	Vacant Land in Primary USD (acres) (1)	Vacant Land in Second USD (acres) (2)	Total Vacant Land in USD Area (acres) (3)	Wetlands (acres) (4)	Total Vacant Upland (acres) (5)
Estate Density 1 UPA	0	0	0	0	0
Estate Density 2 UPA	210	0	210	113	97
High Density	3	0	3	0	3
Low Density	1,818	0	1,818	241	1,578
Medium Density	132	0	132	21	111
Mobile Home	27	0	27	0	27
Rural Density	0	874	874	31	843
Total	2,190	874	3,063	405	2,659

**TABLE 2. DEVELOPMENT POTENTIAL AT MAXIMUM DENSITY ALLOWED BY CGMP**

USD STUDY AREA, EXCLUDING INDIANTOWN				
Future Land Use Designation	Maximum Density For FLU Category (UPA)	Potential Dwelling Units from Uplands (1)	Potential Dwelling Units from Wetlands (2)	Total Dwelling Units for FLU Cat. (3)
Estate Density 1 UPA	1	112	12	124
Estate Density 2 UPA	2	3,222	619	3,840
High Density	10	534	3	536
Low Density	5	7,590	1,591	9,181
Medium Density	8	4,288	254	4,541
Mobile Home	8	1,009	137	1,146
Rural Density	0.5	2,389	345	2,734
Sub-total		19,143	2,960	22,103

USD STUDY AREA, INDIANTOWN ONLY				
Future Land Use Designation	Maximum Density For FLU Category (UPA)	Potential Dwelling Units from Uplands (1)	Potential Dwelling Units from Wetlands (2)	Total Dwelling Units for FLU Cat. (3)
Estate Density 1 UPA	1	0	0	0
Estate Density 2 UPA	2	195	113	308
High Density	10	25	0	25
Low Density	5	7,889	602	8,490
Medium Density	8	888	82	970
Mobile Home	8	216	0	216
Rural Density	0.5	422	8	429
Sub-total		9,634	804	10,438

Grand total DU 32,542  
\*Supply @ 1,245 DU per year 26

**TABLE 3. DEVELOPMENT POTENTIAL AT TYPICAL DENSITY BUILD-OUT**  
USD STUDY AREA, EXCLUDING INDIANTOWN

Future Land Use Designation	Typical Upland Density (UPA) (1)	Potential Dwelling Units (UPA) (2)
Estate Density 1 UPA	1.0	112
Estate Density 2 UPA	1.6	2,577
High Density	4.4	235
Low Density	2.2	3,340
Medium Density	4.4	2,358
Mobile Home	4.4	555
Rural Density	0.5	2,389
Sub-total		11,566

USD STUDY AREA, INDIANTOWN ONLY

Future Land Use Designation	Typical Upland Density (UPA) (1)	Potential Dwelling Units (UPA) (2)
Estate Density 1 UPA	1.0	0
Estate Density 2 UPA	1.6	156
High Density	4.4	11
Low Density	2.2	3,471
Medium Density	4.4	488
Mobile Home	4.4	119
Rural Density	0.5	422
Sub-total		4,667

Grand total 16,233  
\*Supply @ 1,245 DU per year 13

**TABLE 1 NOTES:**

- (1) Data from Vacant Residential Land Inventory, Part I, Tables 1 and 2, EDAW, 01/13/03
- (2) Data from Vacant Residential Land Inventory, Part I, Tables 1 and 2, EDAW, 01/13/03
- (3) Column 1 + Column 2
- (4) Wetlands det. by GMD staff by overlaying EDAW's vacant land inventory (vac\_res.shp) onto the County's Composite Wetlands Map.
- (5) Column 3 - Column 4

**TABLE 3 NOTES:**

- (1) Typical densities based on past development approvals. See separate report for methodology.
- (2) Column 1 x Column 5 of Table 1.

\*Annual demand based on pop. projections approved by BCC on March 4, 2003.

Weighted Average Population for All Martin County (Including Incorporated and Unincorporated Areas)				
	Adjusted Population (1)	Annual Change (2)	Pct. Change (3)	Residential Unit Need (DU) (4)
2003	147,673			
2004	150,476	2,803	1.90	1,229
2005	153,332	2,856	1.90	1,253
2006	156,399	3,067	2.00	1,345
2007	159,527	3,128	2.00	1,372
2008	162,717	3,190	2.00	1,399
2009	165,972	3,255	2.00	1,428
2014	181,963	15,991	9.63	7,014
2015	184,303	2,340	1.29	1,026

Average Annual Unit Need 2003 to 2009 = 1,338

Average Annual Unit Need 2003 to 2015 = 1,339

(1) From Table 3, Weighted Average Population for All Martin County, Population Tech. Bulletin - 2003

(2) Using population in Column 1, Annual Change = P2-P1

(3) Pct. Change = [(Pop. T2 - Pop. T1)/Pop. T1]\*100

(4) Residential Unit Need = Column 2/2.28

Weighted Average Population for Unincorporated Martin County				
	Adjusted Population (1)	Annual Change (2)	Pct. Change (3)	Residential Unit Need (DU) (4)
2003	127,110			
2004	129,707	2,597	2.04	1,139
2005	132,355	2,648	2.04	1,161
2006	135,212	2,857	2.16	1,253
2007	138,128	2,916	2.16	1,279
2008	141,105	2,977	2.16	1,306
2009	144,143	3,038	2.15	1,332
2014	159,021	14,878	10.32	6,525
2015	161,132	2,111	1.33	926

Average Annual Unit Need 2003 to 2009 = 1,245

Average Annual Unit Need 2003 to 2015 = 1,243

(1) From Table 6, Weighted Unincorporated Population, Population Tech. Bulletin - 2003

(2) Using population in Column 1, Annual Change = P2-P1

(3) Pct. Change = [(Pop. T2 - Pop. T1)/Pop. T1]\*100

(4) Residential Unit Need = Column 2/2.28

# **Alternative Study of "Typical" Residential Densities**

Prepared by the Growth Management Department  
November 24, 2003

## **A. Description of EDAW study methods for determining "as-built" residential densities.**

1. Used ARDP database to identify all residential projects having a plat approval date after 02/20/82 (date of adoption of Comprehensive Plan).
2. Used site area figures provided in ARDP where possible. For all other cases, used subdivision number to locate project within GIS and used GIS to calculate total project area.
3. Divided total res. dwelling units by total acreage to determine DU/ac.

## **B. Problems identified.**

1. The "subdivision number" sometimes fails to include common areas such as stormwater retention, recreation, and preserve areas. When these areas are not counted, the total area is under-estimated and as-built density is over-estimated.
2. The density calculation for vacant land includes areas that will be dedicated for public roads. However, after roads have been dedicated, they no longer appear as part of the "total project area" in GIS. Thus, using GIS to calculate "as built" density may under-estimate total area and over-estimate of "as built" density.
3. Under the CGMP, density is assigned to wetland areas at only ½ the maximum for the district and this density transfer can only be done as part of a PUD or a "clustered multi-family development within a multi-family zoning district". While including wetland areas within the total area may overestimate actual density potential, assuming that all residential land is eligible for wetland density transfer is also problematic because both PUDs and multi-family zoning are discretionary in nature that cannot be assumed.
4. Reliance on the April 1, 1982 baseline may be problematic for projecting how future residential projects will build out due to key regulatory changes that have occurred more recently, such as upland protection requirements and increases in wetland and upland protection zone requirements. While these reductions in the buildable area of a parcel may not reduce the maximum allowable density, they may affect "as built" density.
5. Some residential projects cross Future Land Use category boundaries. For example, Holly Creek in the Jensen Beach area span Commercial Office/Residential and Low Density areas.
6. For multiple phase projects that build out over a long period of time, examination of only those phases that fall within the study period may not reflect the project-wide density (i.e, density may be over-estimated if the phase being examined is strictly residential while stormwater areas and recreation areas are provided within other phases).

7. Reliance on plat date may exclude residential projects developed on lands platted prior to baseline date but developed much later. Date of final site plan is better determinate of actual development plans.

### **C. Potential Solutions.**

1. The data fields required for "as-built" density calculations include:
  - Total land area (total land area excluding submerged lands)
  - Wetland area
  - Net buildable area (total area – wetland)
  - Approval dates for master and/or final site plans
  - Maximum residential density allowed for the Future Land Use designation.
  - Maximum wetland density transfer
2. To obtain the above data with the highest level of accuracy, rely primarily on hardcopy review of residential site plans approved after January 1, 1991<sup>1</sup>.
3. Exclude projects crossing FLU boundaries.
4. Note whether the project is pursuant to a PUD or has multi-family component.<sup>2</sup>
5. If this method results in a sample of less than three for any particular FLU designation, sample first from proposed site plans, then from site plans approved prior to January 1, 1991 until three have been chosen.

### **D. Methods for re-analysis:**

1. Used the Sept. 2002 draft ARDP spreadsheet as the basis for the master list of approved residential development projects.
2. Included only those projects where master or final development plans were approved after 02/20/1990.
3. Where a final site plan was part of a master plan approved prior to 02/20/90, the data was used only if subsequent final development plans accounted for all lands, including common areas (e.g., the data was not used if the particular final site plan did not include a representative portion of any wetlands or common areas that may have been a part of the master plan.
4. If final site plan was part of a master plan approved after 02/20/90, data was taken from the master plan unless there was some indication that the individual phases were not being developed at the level of density shown in the approved master plan.
5. In "Approved Final" field, if date was blank but other dates indicated approval after 04/20/90, entered date as 99/99/99 for sorting purposes.
6. Used a combination of GMD and Building files and GIS as necessary to fill in missing data (i.e., total acreage, number of units, area of wetlands).

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<sup>1</sup> While this time period precedes the Ear-based plan amendment in 1998 that increased the wetland buffer standard from 50' to 75' for waters of the state and from 25' to 50' for isolated wetlands, limiting the sample to projects approved after 1998 may lead to too small a sample.

<sup>2</sup> This may be used to determine whether the project was eligible for wetland density transfer.

7. Determined FLU and zoning for each project.
8. Determined whether wetland density transfer was allowable. Per Sec. 4.2.I of LDR, wetland density transfer allowed only for 1)PUD; 2) Clustered multi-family within a multi-family district.
9. To determine projects approved after 2002, , used list created by C. Dulin (gmp03m.153). Note: "Approval Date" did not specify master or final so all dates entered as "master".
10. Due to lack of sample projects in the High Density and Mobile Home categories, the typical net upland density was set at the same rate as for Medium Density. This was done on the assumption that a parcel designated for High Density would not likely be developed at a density lower than a typical Medium Density project.

#### E. Results of re-study.

The sample list and densities of past residential projects is provided in Attachment 1. The differences in the two studies are as follows:

<b>FLU Category</b>	<b>Max. Density by Comp. Plan (UPA)</b>	<b>Typical Density per EDAW Study (UPA)</b>	<b>Typical Density per GMD Study (UPA)</b>
Estate Density 1UPA	1.00	0.95	1.00
Estate Density 2UPA	2.00	1.66	1.56
High Density	10.00	2.84	4.43 <sup>3</sup>
Low Density	5.00	1.77	2.21
Medium Density	8.00	5.43	4.43
Mobile Home	8.00	3.02	4.43 <sup>4</sup>
Rural Density	0.50	0.64	0.46

<sup>3</sup> Because there was only one example of residential development in the High Density category during the study period, this category was assigned 4.43 on the assumption that the typical density would be at least as high as for the Medium Density category.

<sup>4</sup> Because there were no examples of residential development in the Mobile Home category during the study period, this category was assigned 4.43 on the assumption that the typical density would be at least as high as for the Medium Density category.