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### Comprehensive plan density analysis

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# Comprehensive Plan Density Analysis

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## *Preface*

*The Tampa Bay Builders Association (TBBA) commissioned the Center for Economic Development Research (CEDR) to conduct the applied economic research reported herein. Within Hillsborough County's urban service area, the research relates the density of residential dwellings authorized by the County's 1994 Comprehensive Plan to rezoning and actual units established. The project covers rezoning cases initiated between 1997 and 2004.*

*CEDR, a unit of the University of South Florida's (USF) College of Business Administration (COBA), initiates and conducts innovative research on economic development. The Center's education programs are designed to cultivate excellence in regional development. Our information system serves to enhance economic development efforts at USF, COBA, and throughout the Tampa Bay area and the state of Florida.*

*We thank Mr. Bob Campbell, Hillsborough County, Planning & Growth Management Department, Hillsborough County and Ms. Lorraine Duffy, Hillsborough County City-County Planning Commission, for their cooperation and assistance in extracting data from public records for this research.*

Robert Anderson, Dean, COBA, University of South Florida (USF)  
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Dodson Tong, Data Manager, CEDR, COBA, USF

## Executive Summary

The objective of this research is to determine from selected rezoning cases the actual built-out density of designated residential land in the urban areas of the 1994 Hillsborough County Comprehensive Land Use Plan.

Information sources include both electronic and paper files, which were provided to the researchers by the Tampa Bay Builders Association (TBBA) and the office of Hillsborough County Planning & Growth Management, as well as Hillsborough County GIS maps, and Integrated Realty Information System (IRIS – IMAP) maps and Hillsborough County Property Tax records.

The research involved a review of 780 rezoning cases for land in unincorporated Hillsborough County. The land covered by the 780 rezoning cases totaled 37,416 acres designated for 181,785 residential units as defined by each rezoning case's Comprehensive Plan designated residential rate multiplied by the number of acres. The research was limited to 1997-2004 rezoning cases that encompassed 10 or more acres in the Urban/Rural area, and originally designated Residential in the Comprehensive Plan. We grouped the cases into one of three categories: 1) Residential – Done, 2) Residential – Partial Built-out or Not Developed, and 3) Non-Residential.

The method of research involved initial data file consolidation, manual case file searches, manual mapping research, data editing, file consolidation, and analysis. We estimated the migration of acres from Residential Partial Built-out and Not Developed to Non-Residential use. We also estimated the number of residential units that would be built-out of the Residential – Partial Built-out or Not Developed cases when they were Residential – Done.

We find that:

1. The gap or deficit between Comprehensive Plan computed available units based on the residential rating factor and the actual number of units that are built-out is important.
  - At present there is a gap of 148,821 units, or an 18.1% built-out rate, with .88 units per acre.
  - The projected gap, when all residential building is done, is smaller but still noteworthy. The projected gap is of 116,103 units or 36.1% built-out rate, with 1.76 units per acre.
2. Land use conversion from planned residential to non-residential is a major factor contributing to the gap. Over 30% or 11,470 acres of the Comprehensive Plan area studied is projected to be converted from residential to non-residential use.

Residential unit deficit caused by converting land to non-residential use is particularly important. We project that nearly 54% or 62,528 units of the Comprehensive Plan calculated unit built-out capacity will be converted to Non-Residential use. Furthermore, our research shows that once land becomes rezoned for non-residential uses, it is rarely recovered back to residential use.

## **I. Introduction.**

The objective of this research is to determine from selected rezoning cases the actual built-out density of designated residential land in the urban areas of the 1994 Hillsborough County Comprehensive Land Use Plan. Within Hillsborough County's urban service area, the research relates the density of residential dwellings authorized by the County's 1994 Comprehensive Plan to rezoning and actual units established. The project covers rezoning cases initiated between 1997 and 2004.

## **II. Information Sources.**

Information sources:

- TBBA database of rezoning cases (paper and electronic).
- Rezoning Commission Agenda files (electronic) – Provided by Ed Scilex, Senior Zoning Technician, Hillsborough County Planning & Growth Management
- Re-zoning case files (paper) – provided by Vernon Hampton, Office Assistant – File Clerk, Hillsborough County Planning & Grow Management
- Hillsborough County GIS maps (paper & on-line) to include the 1994 Comprehensive Planning map.
- Integrated Realty Information System (IRIS – IMAP) maps and property data base

We met with Hillsborough County staff and The Planning Commission staff to determine possible information sources for Board of County Commissioners (BOCC) approved, planned and actual land use. Although some additional automated data file exchanges were considered, we felt that manual research of each rezoning paper case file was necessary. The staff persons contacted included:

- Roy Mazurm P.E., P.E.II, Planning & Growth Management
- Gary Pailthorp, P.E., Manager, Development Services Division
- Edna Santos, Manager, Electronic Release/Certificate of Occupancy
- James Hosler, Director, Economic Development & Research
- Michael Stover, Planner, Research /Economic Development.

## **III. Scope.**

The TBBA provided an initial database of 2,333 rezoning cases to the researchers. It was compared to the database provide by Hillsborough County Rezoning Agenda Case files. This database contained a list of 11,659 cases. After review of these cases, we decided to limit research to the following criteria:

- 8 year period, 1997 – 2004 cases,
- Equal to or greater than 10 acre,
- In Urban/Rural area,
- Comprehensive Plan originally designated Residential,

- “Unit” represents an apartment or lot with separate tax folio (may or may not have home constructed), and
- Eliminated cases of no value (denied, withdrawn, missing, duplicates).

As a result of these criteria we manually searched a total of 780 rezoning cases. These cases totaled 37,416 acres - equaling 181,785 units (defined by each rezoning cases Comprehensive Plan approved residential rate multiplied by the number of acres). To delineate the land use study results the findings are categorized by:

- Residential – Done,
- Residential – Partial built out or Not Developed,
- Non-Residential –for example, schools, towers, excavations, commercial orretail structures, correctional facilities, hospitals, farm worker housing, and mobile home parks.

As the study proceeded we noted that all years (especially 2003 and 2004) had missing data and a large number of Partial Built-out and Not Developed land. Therefore, to provide more meaningful information the project’s scope was expanded to include:

- Estimating the migration of Partial Built-out and Not Developed to Non-Residential use, and
- Projecting future actual built-out of Partial and Not Developed.

#### **IV. Method.**

##### **Initial Data File Consolidation.**

We obtained electronic data files from TBBA and Hillsborough County Planning & Growth Management. The file transfers were validated and converted to Excel worksheet format.

The two files were sorted by case number by year initiated (1<sup>st</sup> 2 digits of the case number represents the year). They were then merged and a master database created. Duplicate and non-applicable information was purged (i.e. less than 10 acres, prior to 1997, variances request, etc.).

In situations where differences existed between the TBBA database and the Hillsborough County Rezoning Agenda Case file, the Rezoning Commission agenda information was considered the most accurate information.

##### **Manual Case Files Research.**

To obtain needed additional data not contained in the electronic files, we manually reviewed Hillsborough County historical paper rezoning case files from 1997-2004. The information in the case files included land plot location, development project name, Comprehensive Plan land use designation, and the BOCC Land Use Hearing action.

BOCC actions included specific land use criteria, such as the number of residential units, non-residential land use approvals, and denials. In instances of denial or withdrawal, we performed no further research on the case.

We copied selected documents from the files. For example, we copied location maps, hearing recommendations, and proposed land use. When Comprehensive Plan future land use designated residential rating information was not available in the case file, we referred to the actual County Planning map to determine the original planned use designation.

Where differences existed between the previously created merged electronic data base and the paper rezoning case file information, we considered the paper file information more accurate and thus we reported this information.

We created an abbreviated worksheet that contains key information from the paper case files. This new worksheet has the following data fields:

- Case file
- Development name
- Acreage
- Comprehensive Plan land use category
- Comprehensive Plan land use rating (units per acre)
- Calculated Comprehensive Plan units allowable (number of acres X residential rating)
- Existing zoning (Rezoned from)
- Requested new zoning (Rezoned to)
- Approved BOCC rezoning units
- Calculated Rezoning rating (approved units / number acres)
- Remarks (primarily for researcher reference to note additional information on use, cross references to other case, etc.).

#### Manual Mapping Research.

We obtained actual land use from on-line mapping source data bases. Two map sources were used; Hillsborough County GIS maps to include the 1994 Comprehensive Planning map and IRIS – IMAF on-line maps and property records data base. Maps showing plots were printed and the actual residential units were counted. For apartment complexes, we used the County Tax records to determine the number of units in a complex. Additionally, we referred to the Greater Tampa Association of Realtors street atlas as necessary to find the location and a development / apartment name.

Cases that involved mixed use of land (for example, residential, commercial, retail, schools, etc.) measurements using IMAF were made to separate the non-residential acres from the total case acres. This information was entered on separate lines on the new worksheet initiated from the individual paper case file review described previously. The new additional data fields are:

- Actual units on the land
- Calculated land use rate (units / acre)

- Date of mapping look-up of actual units
- Status of development – “Done” or “Partial”

Common use areas, such as, wetlands, playgrounds, ponds and recreational areas, in a builder’s planned land use are included in the measurement of acreage. Non-residential land uses ,for example, commercial structures, towers, schools, land excavation, farm worker housing, RV parks, and correctional facilities, are also included when the Comprehensive Plan indicates the planned future land use is residential.

In some cases a sub-division, when developed, included adjacent parcels. For this study we only counted that land area identified in the rezoning case. If a property line ran between individual lots, a partial unit was not counted.

We categorized a rezoned area as Residential - Done if the number of units/lots were within 90% the number of units approved, or if most of the useable land was built-out. A built-out unit is a lot as defined by an established, separate tax folio. An actual residence may or may not have been constructed on the land and a Certificate of Occupancy (CO) may or may not have been issued.

#### Final File Consolidation and Analysis.

All of the above research information presented in the newly created analysis worksheet was then reviewed with TBBA representatives. Final edits were made as well as a search of County paper records to capture any information previously missing that might now be available.

We then combined our data from the rezoning case file worksheet with the merged master TBBA/BOCC file. We reviewed the new composite database for accuracy and completeness. For example, we found that due to modifications to previous rezoning cases the acres referenced in a case may be duplicated in a subsequent case. We deleted duplications. Further, we cross-referenced commercial land use with Sector/Range/Township in order to purge the database of duplicate entries. The most current case file was used to glean the required information and the data contained in the older case was eliminated with reference made to the most current file.

We performed the following analytical tasks:

1. Sorted each year’s data by:
  - Comprehensive Plan Rate (0.2 to 35 residents per acres).
  - Category (Residential – Done, Residential – Partial Built-out or Not Developed, Non-Residential).
2. Combined all years’ data by:
  - Comprehensive Plan Rate.
  - Category.
3. Estimated migration of planned Residential land to Non-Residential use. The number of acres for each case in category Residential – Partial Built-out or Not Developed was reduced by 10% and the same amount was then added to Non-Residential acres.

4. Projected actual built-out units of Residential – Partial Built-out or Not Developed cases. The projections are based on the all years’ average for each residential rating factor’s actual built-out unit percent for Residential – Done cases.
5. Calculated:
  - Actual and projected built-out rate (units per acres).
  - Difference between original Comprehensive Plan future unit built-out capacity per rezoning case and the actual / projected built-out number of units.
  - Percent of Comprehensive Plan future planned vs. actual / projected built-out units.
  - Distribution percent of land use both number of acres and units by Category and Density rate.
6. Constructed charts and tables to report the findings.

## **V. Findings.**

There are two measures that summarize our findings. The measures are land use 1) in terms of acres (size) and 2) in terms of building units, i.e. density. These elements show two distinct dimensions to our research.

We note that missing case information or unfinished development may bias our actual measures. Thus, we project future development outcomes based on the actual measures. The actual measures indicated 16,177 acres or 43.2% of the total land included in our study is currently in the category Residential – Partial Built-out or Not Developed. Thus, we assume at least a 10% migration of this land to the Non-Residential category and project future development of the remaining land by multiplying the actual completion percentage for the applicable residential unit per acre rate by the Comprehensive Plan calculated total available units.

Our projections are:

- Total built-out unit per acres rate is 1.76 (Table 1, next page).
- Difference between the future land use plan and actual built-out is 116,103 fewer units (Table 1, next page).
- 36.1% of the Comprehensive Plan land use unit capacity is being built-out (Table 1, next page).
- The reason for the deficit and low built-out rate is the conversion of use from residential to non-residential - migration of land 11,470 acres or 30.7%, and unit deficit of 62,538 units or 53.9% (Charts 1 & 2, page 8).

**Table 1. Summary of Data All Years.**

<u>Category</u>	<u>Acres</u>	<u>% of Land</u>	<u>% Comp PI Units</u>	<u>Comp PI Units</u>	<u>Actual Units</u>	<u>Built Rate</u>	<u>Deficit</u>	<u>% Built</u>
<b>w/o Projections:</b>								
RES-Done	11,387	30.4%	31.0%	56,362	29,930	2.63	26,432	53.1%
RES-Partial/Not Dev	16,177	43.2%	38.4%	69,871	3,033	0.19	66,838	4.3%
NON-RES	<u>9,852</u>	<u>26.3%</u>	<u>30.6%</u>	<u>55,552</u>	<u>1</u>	<u>0.00</u>	<u>55,551</u>	<u>0.0%</u>
<b>TOTAL</b>	<b>37,416</b>	<b>100.0%</b>	<b>100.0%</b>	<b>181,785</b>	<b>32,964.0</b>	<b>0.88</b>	<b>148,821</b>	<b>18.1%</b>
<b>with Projections:</b>					<b><u>Projected</u></b>			
RES-Done	11,387	30.4%	31.0%	56,362	29,930	2.63	26,432	53.1%
RES-Partial/Not Dev	14,559	38.9%	34.6%	62,884	35,751	2.46	27,133	56.9%
NON-RES	<u>11,470</u>	<u>30.7%</u>	<u>34.4%</u>	<u>62,539</u>	<u>1</u>	<u>0.00</u>	<u>62,538</u>	<u>0.0%</u>
<b>TOTAL</b>	<b>37,416</b>	<b>100.0%</b>	<b>100.0%</b>	<b>181,785</b>	<b>65,681.8</b>	<b>1.76</b>	<b>116,103</b>	<b>36.1%</b>

Examination of the total acres rezoned per year reveals an increasing trend in the amount of land being rezoned each year. In the year 2004 there are 4,280 acres more than 1997 (Chart 3, page 9). However, we note that 10% of the 2004 cases files were missing due to being in various stages of work by the County, and thus not included in this research. The highest number of rezoned acres, 7,172, was in 1998. Other years, 1997 and 1999, had fewer acres. Also, included in 1998 cases are several large developments (Lake St. Charles 421 acres, Lake Brandon apartment complex 445 acres, Lake Nancy Estates 276 acres, Lake Pear 290 acres, Turtle Creek 1,013 acres).

The actual percent of units built-out to planned units shows a decline from 26% in 1997 to 5.9% in 2004 (Chart 4, page 9). But when we use our estimates of future development, the projection is an increasing trend from 29.2% in 1997 to a high of 47.2% in 2002 (Chart 5, page 10). The lower projections for 2003 and 2004 relative to 2002 are due to missing case files.

The gap or deficit between planned units and actual units built-out is large. Chart 6 on page 10 depicts the gap.

The actual unit built-out rate per acre is trending down (Chart 7, page 11). The projected built-out rate per acre is trending up from 1.36 in 1997 to 2.00 in 2004 (Chart 8, page 11). Once the 2004 cases are complete it is likely that this rate will be higher. This means the overall land use density is increasing.

Although, as mentioned above, we project that the land density rate will increase to 2.00 or higher, it is still considerably less than the Comprehensive Plan future use land rate. Most of the land (over 50%) was designated residential 4 and 6 in the Plan (Charts 9 & 10, page 12). The composite Comprehensive Plan future use rate of all the cases is 4.858 (181,785 units / 37,416 acres). The projected 2.0 rate is less than half of the Comprehensive Plan's rate.

## **VI. Conclusions.**

1. The gap or deficit between planned units and built-out units is high at 63.9% of planned density. The actual gap is 148,821 with an 18.1% built out rate, at .88 units per acre. The projected gap is 116,103 with a 36.1% built out rate, at 1.76 units per acre.
2. Land use migration from residential to non-residential is a major cause for this gap. We project that over 30% of the Comprehensive Plan area studied will be converted from Residential to Non- Residential (11,470 acres).
3. The unit deficit of 116,103 from the planned use is influenced by the conversion of Residential to Non-Residential use. Nearly 54% of the 1994 Comprehensive Plan future use calculated unit deficit is projected to be from conversions to Non-Residential (62,538 units).
4. A noteworthy observation regarding this loss of residential units is that once land becomes non-residential it is rarely recovered back to residential.

## Charts

Chart 1. Projected Acres of Land Use

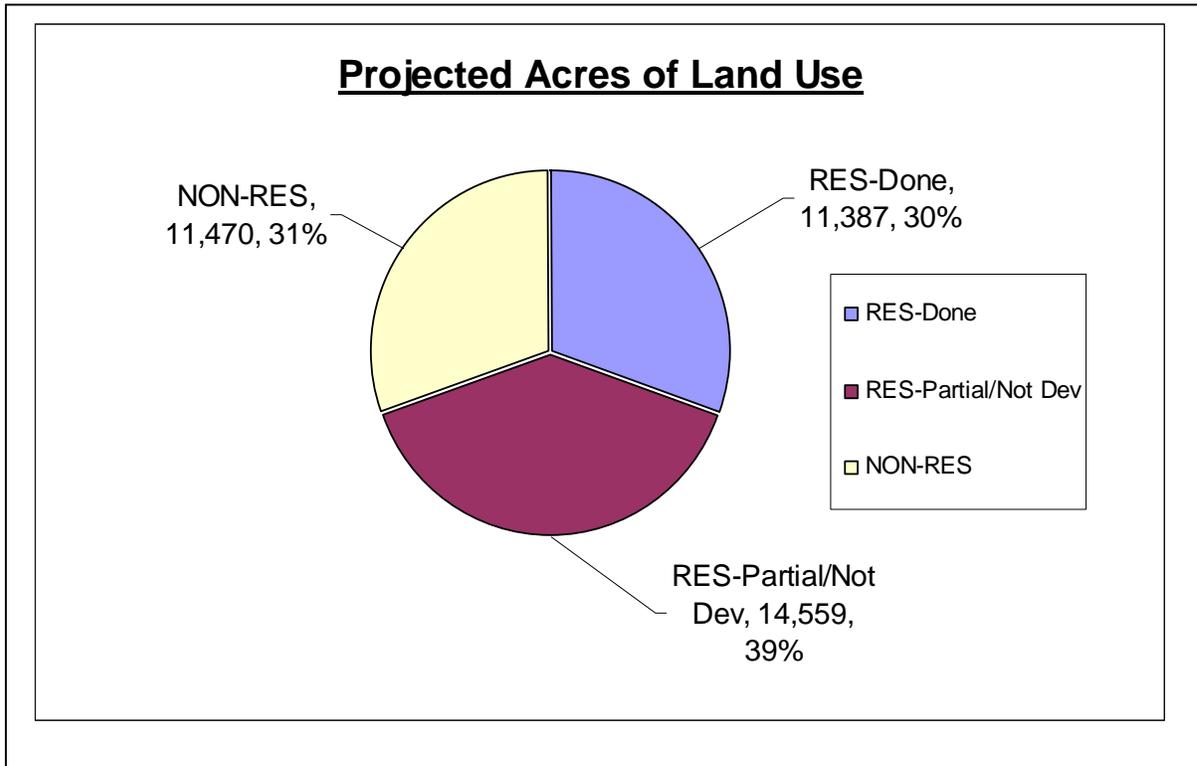


Chart 2. Projected Unit Deficit

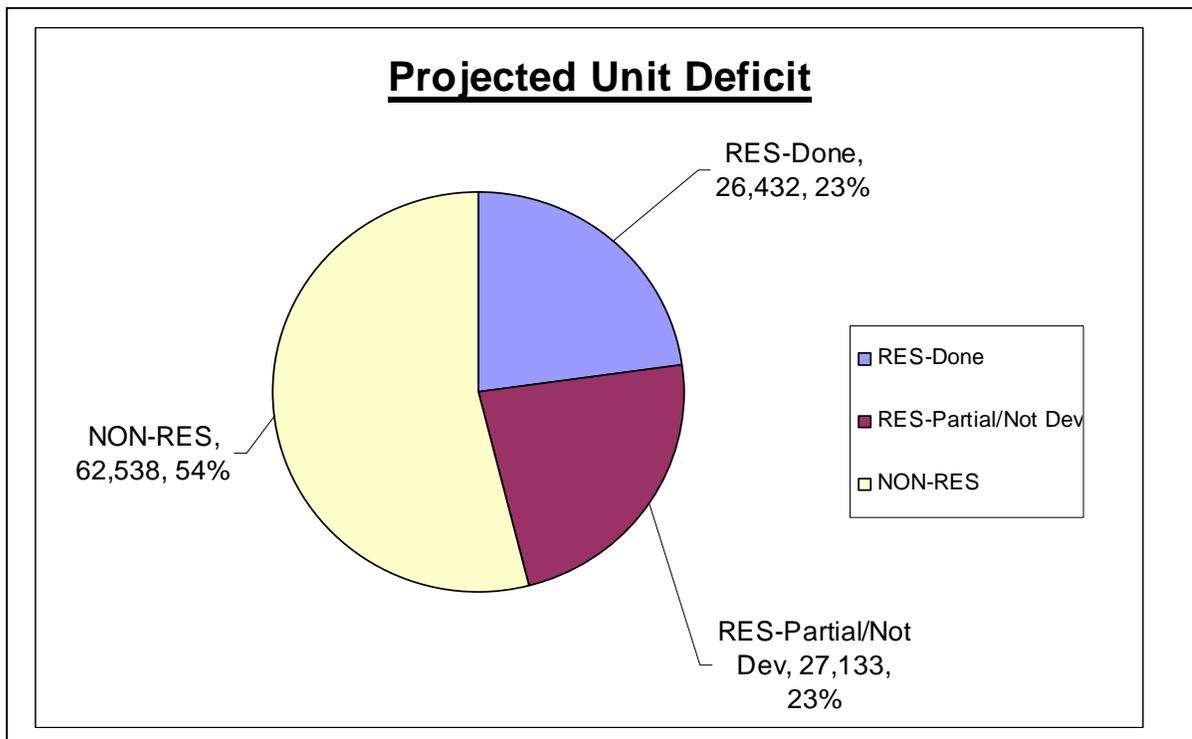


Chart 3. Total Sample Rezoning Acres per Year

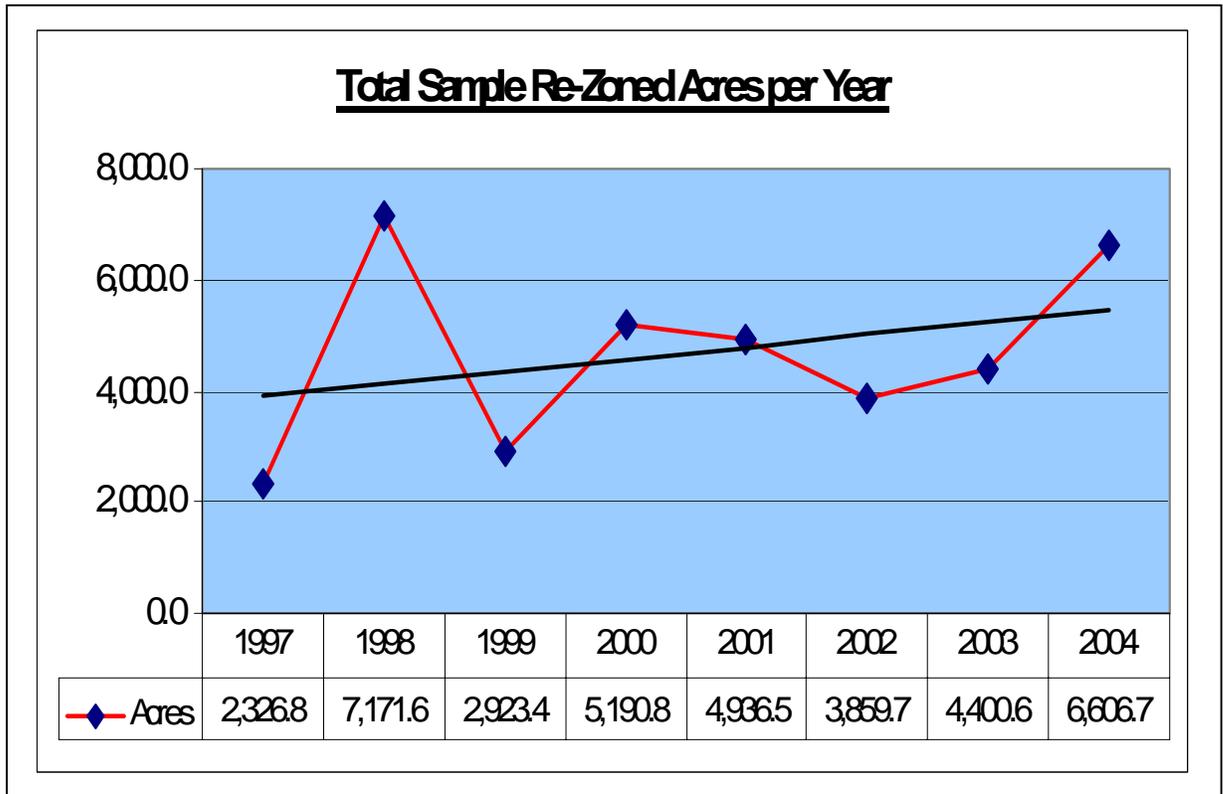


Chart 4. Actual % Units Built-out of Comprehensive Plan

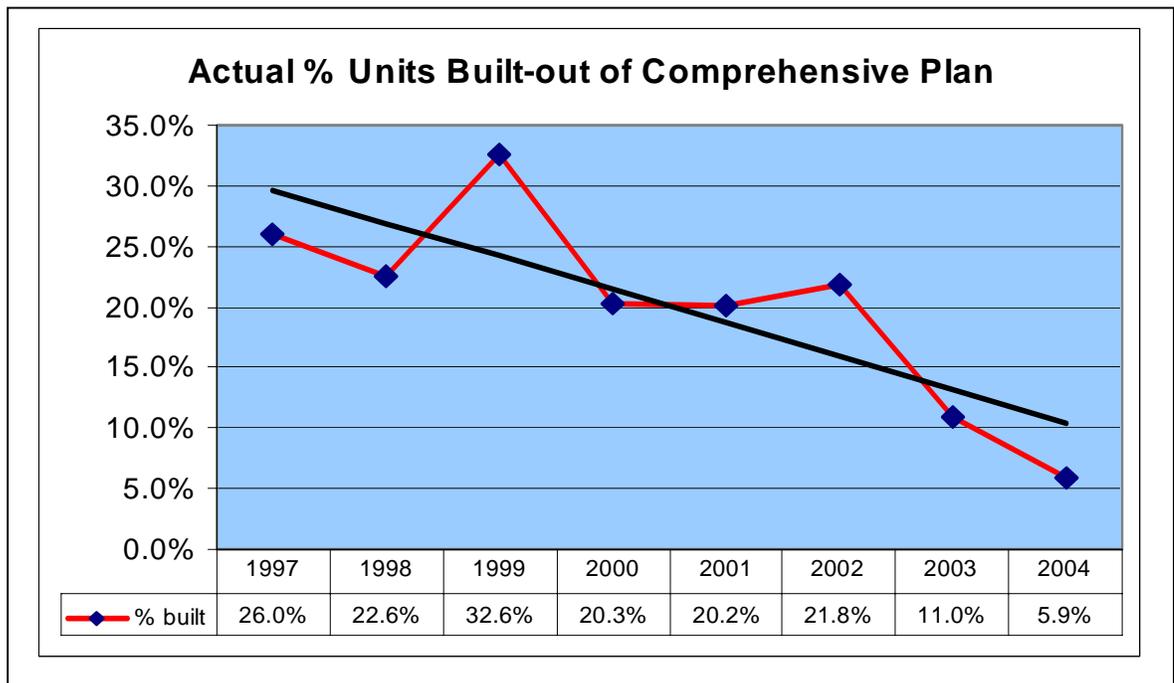


Chart 5. Projected % Units Built-out of Comprehensive Plan

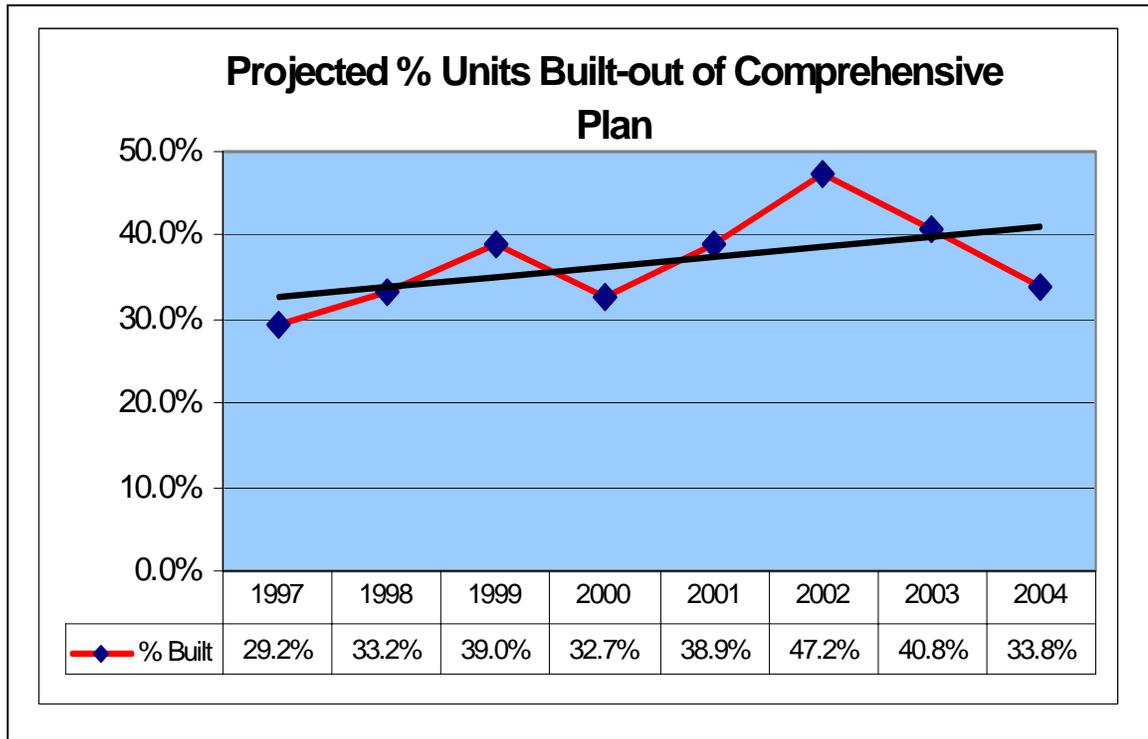


Chart 6. Projected Unit Built vs. comprehensive Plan

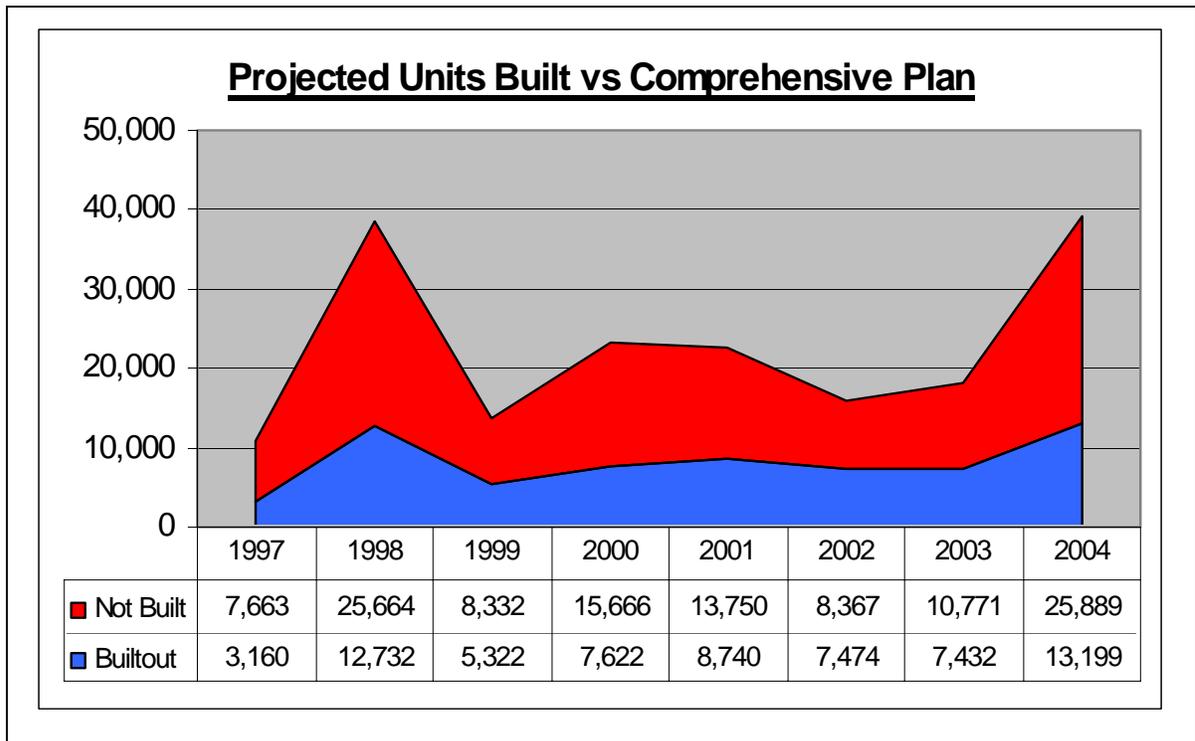


Chart 7. Actual Unit built-out Rate per Acre

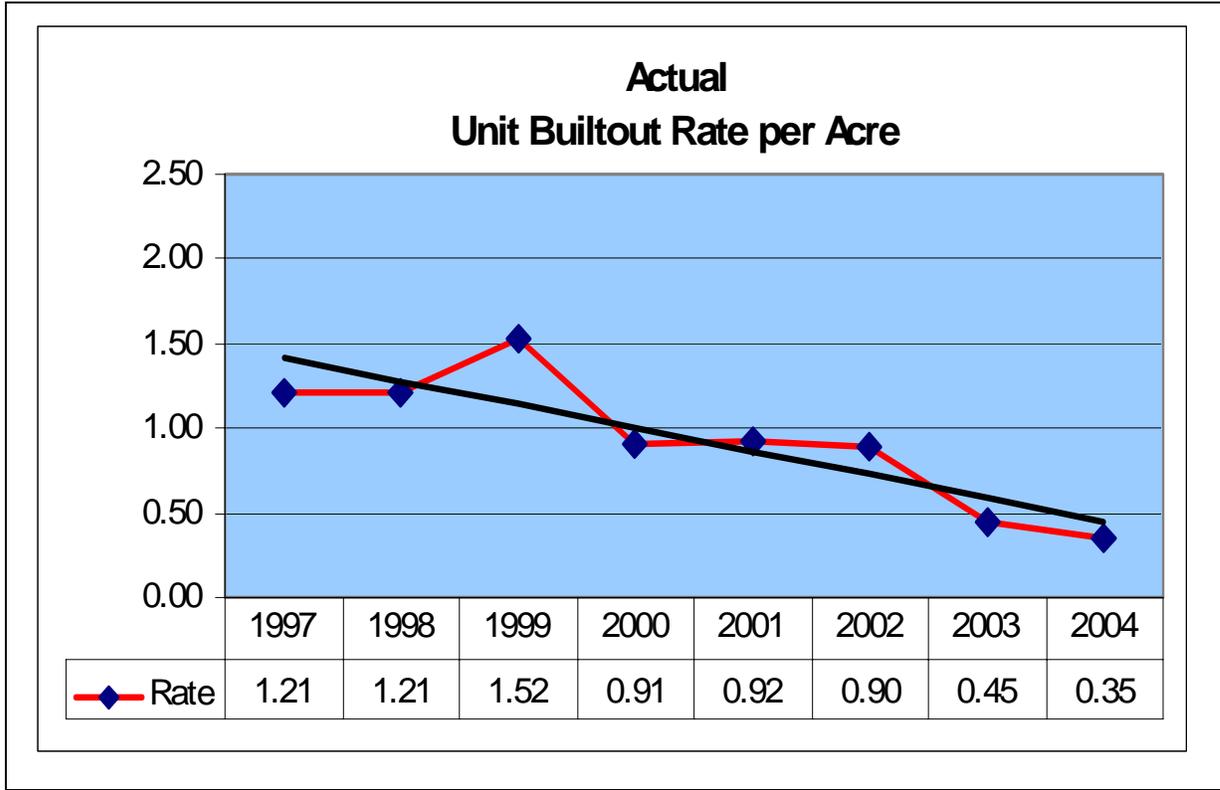


Chart 8. Projected Unit Built-out Rate per Acre

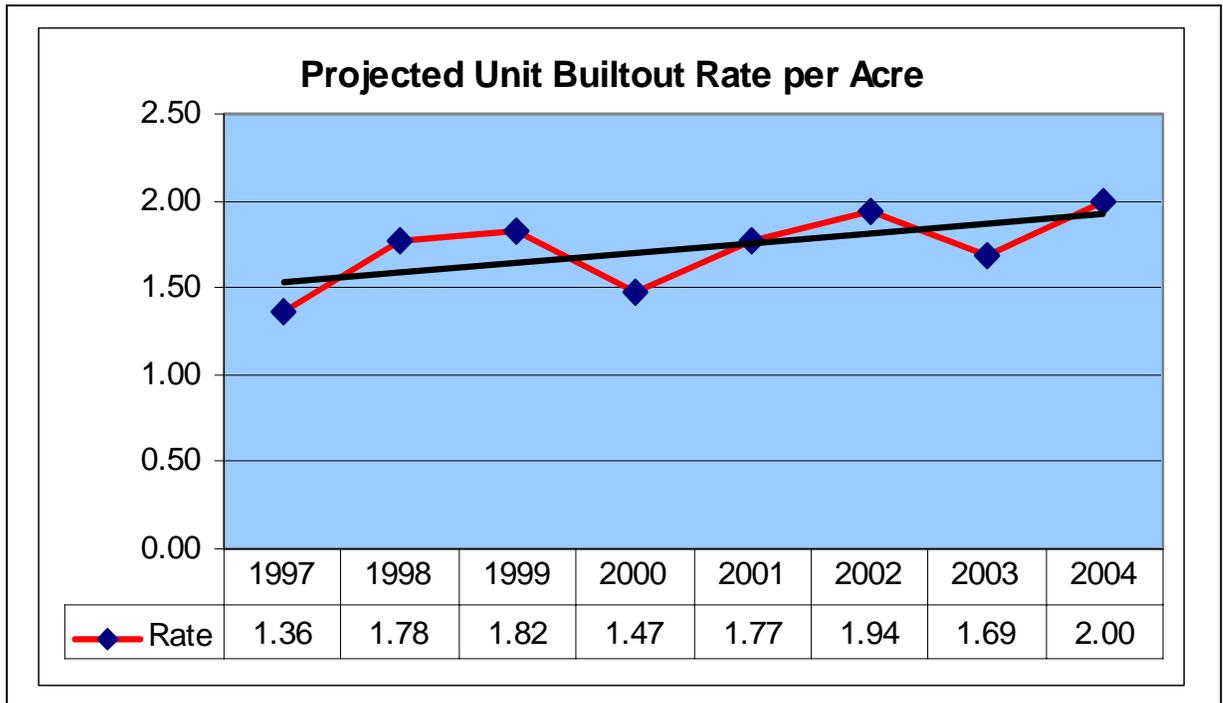


Chart 9. % of Land by Comprehensive Plan Rate

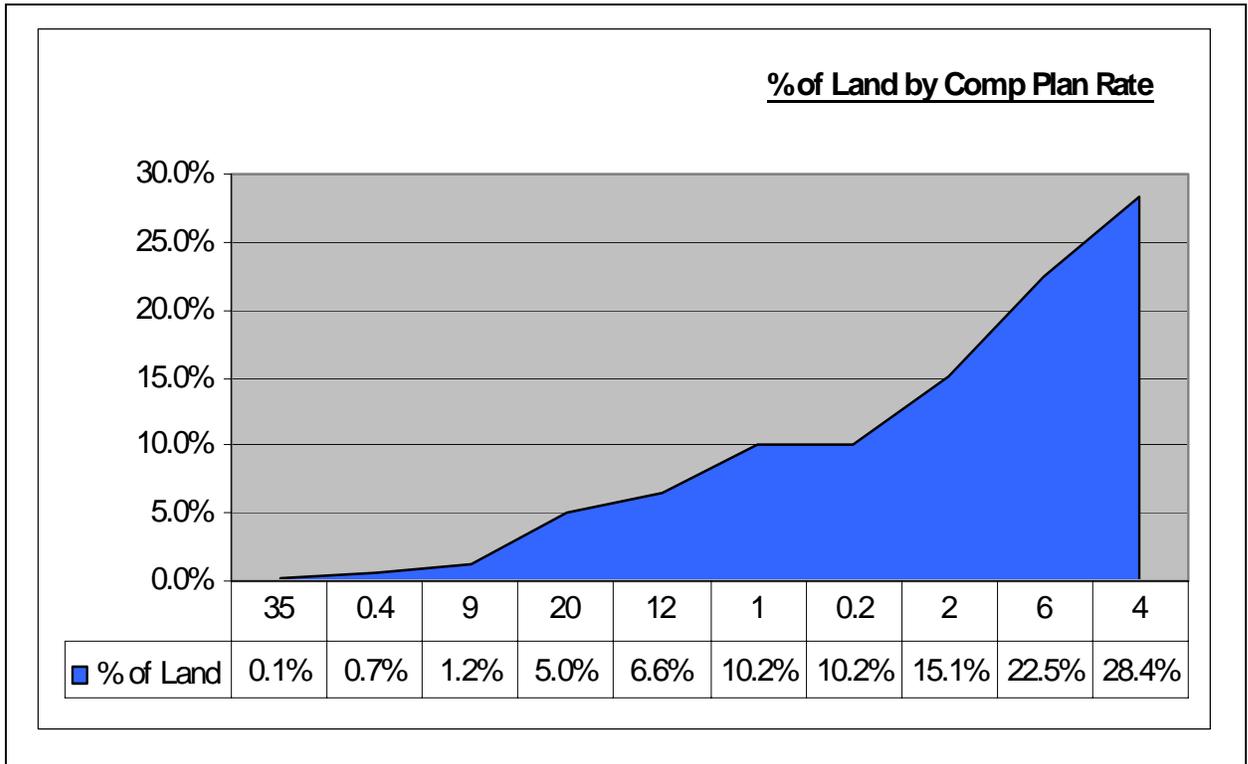


Chart 10. Acres by Comprehensive Plan Units / Acres

