Real Estate Development, Step Three Of The Twelve Step Process

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Abstract

This article focuses on some simple techniques of how to complete a preliminary market feasibility study in a proposed residential real estate development. The twelve steps in real estate development are reviewed with special emphasis on step three: the preliminary market feasibility, which is an important step in determining the financial feasibility of the proposed real estate development. The feasibility analysis requires specific analyses of existing and proposed developments that will likely compete with the proposed development; this is termed a competitive survey. A specific analysis of population demand is also required. This article explains in simple terms how to measure and estimate housing demand, compared to the existing and planned housing supply.

Introduction

Fifteen years ago, an article was published in B-QUEST about real estate development that received far more attention than was expected. The article was titled "Residential Real Estate Development", and was published by B>Quest (https://www.westga.edu/~bquest/2000/resident.html), the online business journal of the University of West Georgia. The initial article described in simple terms how to develop a residential subdivision from the idea to the final phase of marketing and selling. The author has personally used this development process in the past, and he distilled the process into the twelve steps listed below.

1. Create the development **idea**
2. **Secure** the vacant site or undeveloped land
3. Complete a **preliminary** market feasibility study
4. Have the **preliminary plans** and specifications drawn
5. Obtain a mortgage **financing** commitment
6. Cause the **final** market feasibility study to be completed
7. Complete the engineering **final plans** and specifications
8. Estimate the **final total costs**, direct and indirect
9. Complete a **discounted cash flow** analysis
10. Analyze various **risks** associated with the proposed development
11. Begin actual **construction** of the streets, utilities, and lots
12. Create a **marketing** and selling plan and sell the lots

In land development, it is important to understand which things are changeable (our plans) and which are not (the market). The first part of that process is understanding what market conditions exits.

After receiving numerous comments and requests for development consulting since the article's publication in 2000, there seemed to be a need for more information on this topic. Therefore, the article's central purpose is to focus on a single part of the residential real estate development process: Step 3 - **how to complete a preliminary market feasibility study.**

After the developer has an idea and has executed an option agreement or a contract to purchase the site, he/she must complete a preliminary market feasibility study. In most cases, an independent real estate expert is hired to complete it. The study involves the research and analysis of **supply** based on an investigation of competing single-family residential developments in the market area, and **demand** based on population demographics.

In a market feasibility analysis, first we define a market area or trade area for the proposed subdivision. Several simple ways to define the residential market area are by county, city, or zip code; however, with new demographic analysis computer programs, for example, the Site To Do Business (STDB.com), trade areas using driving time or physical boundaries such as roads or rivers can also be used to define markets.

Competitive Survey of Supply

The market analyst must consider the existing and planned supply of **competition** for the proposed development in the defined market area. For existing supply, the analyst should tour the area to inspect the competing subdivisions in the defined market or trade area. For planned supply, a visit to the planning office is warranted, and an evaluation of the possibility those planned developments will be approved should be made.

Once the existing competing subdivisions have been identified, the analyst must review the sales data to determine the prices and absorption levels of lots in those competing subdivisions. In Georgia, most sales data is available easily online from each County Tax Assessor's office. The sales data from the county can be saved onto a spreadsheet program, which can be sorted according to vacant lot and improved house sales. Below is a sample spreadsheet of improved house sales from the Turtle Point Subdivision in Carroll County Georgia.

Turtle Pointe Sales 2014-2015								Year	
Parcel No.	Landlot	District	Sale Date	Sale Price	Bldg. SF	$/SF	Acres	Built	Location Address
C04 02302	214	5	May-15	$ 121,000	1,564	$ 77	0.15	2001	319 TURTLE POINTE DR
C04 02302	214	5	Dec-14	$ 150,000	1,913	$ 78	0.1	1999	206 TURTLE POINTE DR
C04 02302	214	5	Oct-14	$ 143,000	1,694	$ 84	0.12	1997	106 TURTLE POINTE DR
C04 02302	214	5	Sep-14	$ 115,000	1,702	$ 68	0.14	1999	112 TURTLE WALK
C04 02302	214	5	Aug-14	$ 137,900	1,683	$ 82	0.1	1998	202 TURTLE POINTE DR
C04 02302	214	5	Jun-14	$ 99,500	1,694	$ 59	0.12	1997	106 TURTLE POINTE DR
C04 02302	214	5	May-14	$ 121,378	1,355	$ 90	0.12	1998	104 LAKE CROSSING
C04 02302	214	5	Feb-14	$ 110,000	1,622	$ 68	0.11	1998	101 TURTLE WALK
				$ 997,778	13,227	**$75**			
			Mean:	**$124,722**	1,653	$ 75			

The improved house sales were extracted from the Carroll County Tax Assessor’s office data online. They are then modified to show the simplified pertinent data.

The following are vacant lot sales extracted from the County Tax Assessor’s web site online. These lot sales were from 2002 to 2010 in a large subdivision called Fairfield Plantation, which is located in the northern part of Carroll County, Georgia. The data was saved in spreadsheet format for easy analysis. Note the average lot price was $12,600 (rounded), and the average price per square foot of land area was $0.82.

Fairfield	Lot Sales							
Parcel No.		LL	Dist.	Sale Date	Sale Price	Acres	$/SF	Location Address
F04	0044	48	5	5/1/2010	$ 6,000	0.35	$0.39	4044 GOLFVIEW CT
F04	0007	17	6	6/1/2007	$ 25,000	0.35	$1.64	4007 GOLFVIEW DR
F04	0054	48	5	8/1/2006	$ 36,000	0.34	$2.43	4054 GOLFVIEW DR
F04	0076	48	5	6/1/2006	$ 14,900	0.46	$0.74	4076 GOLFVIEW DR
F04	0181	48	5	6/1/2006	$ 14,900	0.33	$1.04	4181 ESSEX DR
F04	0133	17	5	5/1/2006	$ 13,500	0.4	$0.77	4133 ESSEX DR
F04	0161	48	5	4/1/2006	$ 15,900	0.28	$1.30	4161 GOLFVIEW DR
F04	0054	48	5	4/1/2006	$ 18,900	0.34	$1.28	4054 GOLFVIEW DR
F04	0004	17	5	3/1/2006	$ 7,500	0.39	$0.44	4004 GOLFVIEW DR
F04	0116	17	5	3/1/2006	$ 12,500	0.39	$0.74	4116 ESSEX DR
F04	0195	48	5	2/1/2006	$ 13,000	0.28	$1.07	4195 ARGONNE DR
F04	0222	48	5	1/1/2006	$ 11,000	0.39	$0.65	4222 GREEN CT
F04	0211	48	5	12/1/2005	$ 28,000	0.48	$1.34	4211 GREEN CT
F04	0007	17	6	11/1/2005	$ 16,500	0.35	$1.08	4007 GOLFVIEW DR
F04	0143	48	5	10/1/2005	$ 12,000	0.29	$0.95	4143 ARGONNE DR
F04	0143	48	5	10/1/2005	$ 12,000	0.29	$0.95	4143 ARGONNE DR
F04	0095	48	5	10/1/2005	$ 20,000	0.25	$1.84	4095 ESSEX DR
F04	0161	48	5	9/1/2005	$ 2,500	0.28	$0.20	4161 GOLFVIEW DR
F04	0115	17	5	9/1/2005	$ 5,000	0.5	$0.23	4115 ESSEX DR
F04	0115	17	5	9/1/2005	$ 5,000	0.5	$0.23	4115 ESSEX DR
F04	0191	48	5	9/1/2005	$ 8,500	0.32	$0.61	4191 ARGONNE DR
F04	0205	48	5	7/1/2005	$ 7,000	0.32	$0.50	4205 GREEN CT
F04	0133	17	5	4/1/2004	$ 5,000	0.4	$0.29	4133 ESSEX DR
F04	0031	48	5	3/1/2004	$ 5,000	0.29	$0.40	4031 GOLFVIEW DR
F04	0044	48	5	11/1/2002	$ 7,500	0.35	$0.49	4044 GOLFVIEW CT
F04	0162	48	5	7/1/2002	$ 5,000	0.32	$0.36	4162 GOLFVIEW DR
				Mean	**$ 12,619**	**0.36**	**$0.82**	

Also take note of the distribution of lot sales each year:

Year	Sales
2010	1
2009	0
2008	0
2007	1
2006	10
2005	10
2004	2
2003	0
2002	2

The individual parcel details can be reviewed online at the County Tax Assessor's web site. Each parcel record includes ownership information, floor plan sketches, site plan, construction features, and sales history. An individual parcel example is shown below.

Carroll County Georgia
Board of Tax Assessors

Office of the Tax Assessor
Carroll County Georgia
P O Box 338
Carrollton, GA 30112
Phone: (770) 830-5812
Fax: (770) 830-5810

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Owner and Parcel Information

Owner Name	DANIEL BRITTANY & REESE MARCUS (JTRS)	Today's Date	February 26, 2016
Mailing Address	140 FAIRFIELD RD	Parcel Number	172 0119
	VILLA RICA, GA 30180	Tax District	COUNTY (District 02)
Location Address	140 FAIRFIELD RD	2015 Millage Rate	27.964
Legal Description	HSE/LOT 5 ABBOTSFORD UNIT 1	Acres	0.48
Property Class(NOTE: Not Zoning Info)	R3-Residential	Neighborhood	ABBOTSFORD SD
		Homestead Exemption	Yes-(S1)
Landlot/District	69/5	Parcel Map	Show Parcel Map
Water	Public	Sewer	Septic Tank
Electric	Electricity	Gas	Pipe Gas
Topography	Level	Drainage	Good
Road Class	County	Parcel Road Access	Paved
Map/Tie	CD035202 CD038404	Special	

2015 Tax Year Value Information

Land Value	Improvement Value	Accessory Value	Total Value	Previous Value
$ 12,485	$ 101,415	$ 0	$ 113,900	$ 99,217

The value of this parcel reflects the 1-year sales value cap (Improvement value above includes accessory value information if parcel contains accessory items).

Land Information

Type	Description	Calculation Method	Number of Lots	Photo
RES	Res-Abbotsford	Lot	1	NA

Improvement Information

Style	Heated Sq Ft	Interior Walls	Exterior Walls	Attic Area Sq Ft	Basement Area Sq Ft	Year Built	Photo
One Story	2,284	Sheetrock	Vinyl/Aluminum Siding	528 Finished	0	1994	Building Images
Roof Type	**Flooring Type**	**Heating Type**	**Rooms Bedrooms/Bathrooms/Extra Plumbing**	**Value**	**Cond**	**Number Fire Pl**	**Sketch**
Asphalt Shingles	Carpet/Tile	Central Heat/AC	5/2/2.0/4	$ 101,415	Average	1	Sketch Building 1

Accessory Information

Description	Year Built	Dimensions/Units	Value
No accessory information associated with this parcel.			

Sale Information

Sale Date	Deed Book / Page	Plat Book / Page	Sale Price	Reason	Grantor	Grantee
10/31/2014	5376 882	52 286	$ 113,900	Fair Market Sale	S-NELSON FAMILY LLC	DANIEL BRITTANY & REESE MARCUS (JTRS)
04/18/2014	5323 525	52 286	$ 74,800	Repo resale - resold same year	SECRETARY OF HUD	S-NELSON FAMILY LLC
05/07/2013	5292 481	52 286	$ 148,861	Govt Repo Sale	SUNTRUST MORTGAGE INC	SECRETARY OF HUD
05/07/2013	5268 787	52 286	$ 148,861	Repo/Foreclosure	BEASLEY SAMUEL E	SUNTRUST MORTGAGE INC
12/15/2006	3816 037	52 286	$ 127,300	Fair Market Sale	GILLIAM DARRYL L	BEASLEY SAMUEL E
09/04/1998	1073 278	52 286	$ 85,400	Not Fair Market	FEDERAL HOME MORTGAG	GILLIAM DARRYL L
08/02/1998	1052 675	52 286	$ 0	Repo/Foreclosure	NATIONSBANC MTG	FEDERAL HOME MORTGAG
08/02/1998	1052 672	52 286	$ 112,000	Repo/Foreclosure	ZELMAN ARONA	NATIONSBANC MTG
04/06/1995	869 321	52 286	$ 125,000	Fair Market Sale	LBS & ASSOCIATES INC	ZELMAN ARONA
04/11/1994	826 709		$ 0	Multiple Parcel Sale	LBS & ASSOCIATES INC	LBS & ASSOCIATES INC

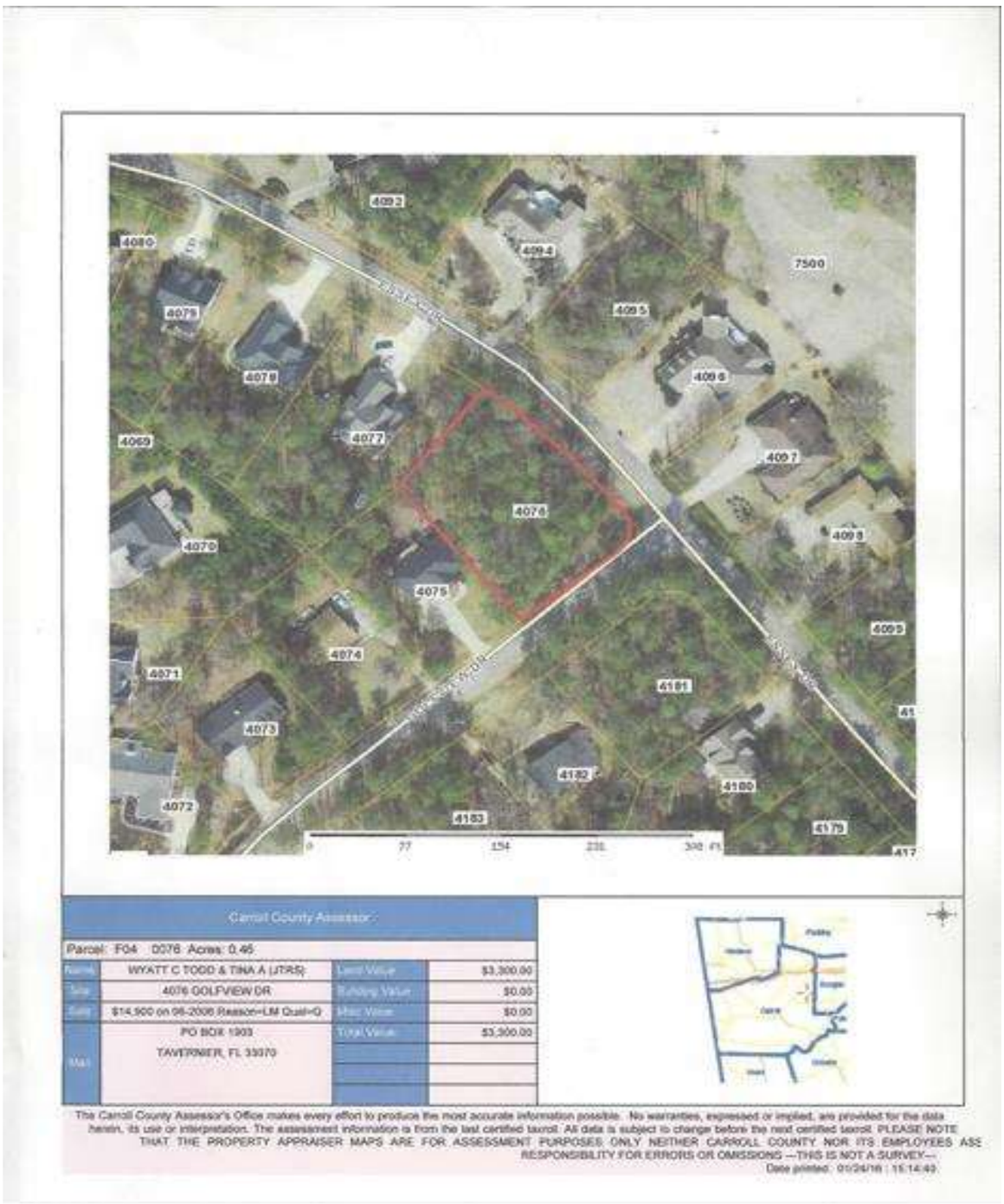
Permit Information

Permit Date	Permit Number	Type	Description
No permit information associated with this parcel.			

Recent Sales in Neighborhood | Recent Sales in Area | Previous Parcel | Next Parcel | Field Definitions | Return to Main Search Page | Carroll Home

The Assessor's Office makes every effort to produce the most accurate information possible. No warranties, expressed or implied, are provided for the data herein, its use or interpretation. The assessment information is from the last certified tax roll. All data is subject to change before the next certified tax roll. Website Updated: February 23, 2016

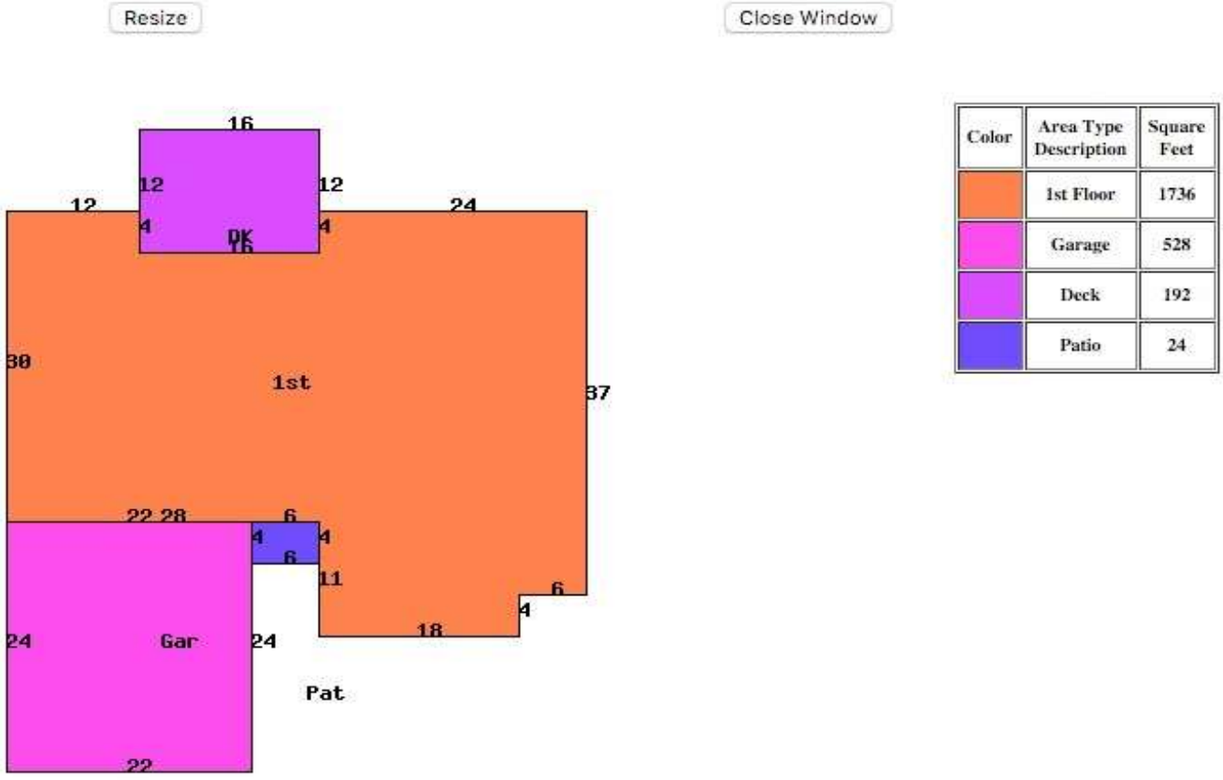
Note that the top banner of the Tax Assessors' individual parcel page has a link where you could click on "Recent Sales in Neighborhood" or "Recent Sales in Area." Under the owner and parcel information includes, the owner's address, utilities available to the subject site, the tax parcel number, and the number of acres or lot size. This page also has a link to "Show Parcel Map"; if you click on the "Show Parcel Map" link, a plat of the subject parcel will appear, like the aerial plat below.



The next block is the “Tax Year Value Information” for 2015, which shows the tax assessors’ estimate of the land value, the improvement value, and the total value. Although tax assessors typically use mass appraisal techniques, their estimate of market value should be within 90% to 110% of the fair market value of the property. Of course this range may vary by location.

There is also a section entitled “Improvement Information,” which describes the type of construction, the square footage of the house or building, the date built, roof type, flooring type, heating and air conditioning type, and number of rooms, bedrooms and bathrooms. Additionally, this section has a link to “Sketch Building"; if you click on the “Sketch Building” link, a floor plan of the subject building will appear, like the plan below.

The last section of the individual parcel, “Sales Information” shows the parcel’s sales history. This may be important when analyzing specific sales data and making relative time comparisons.

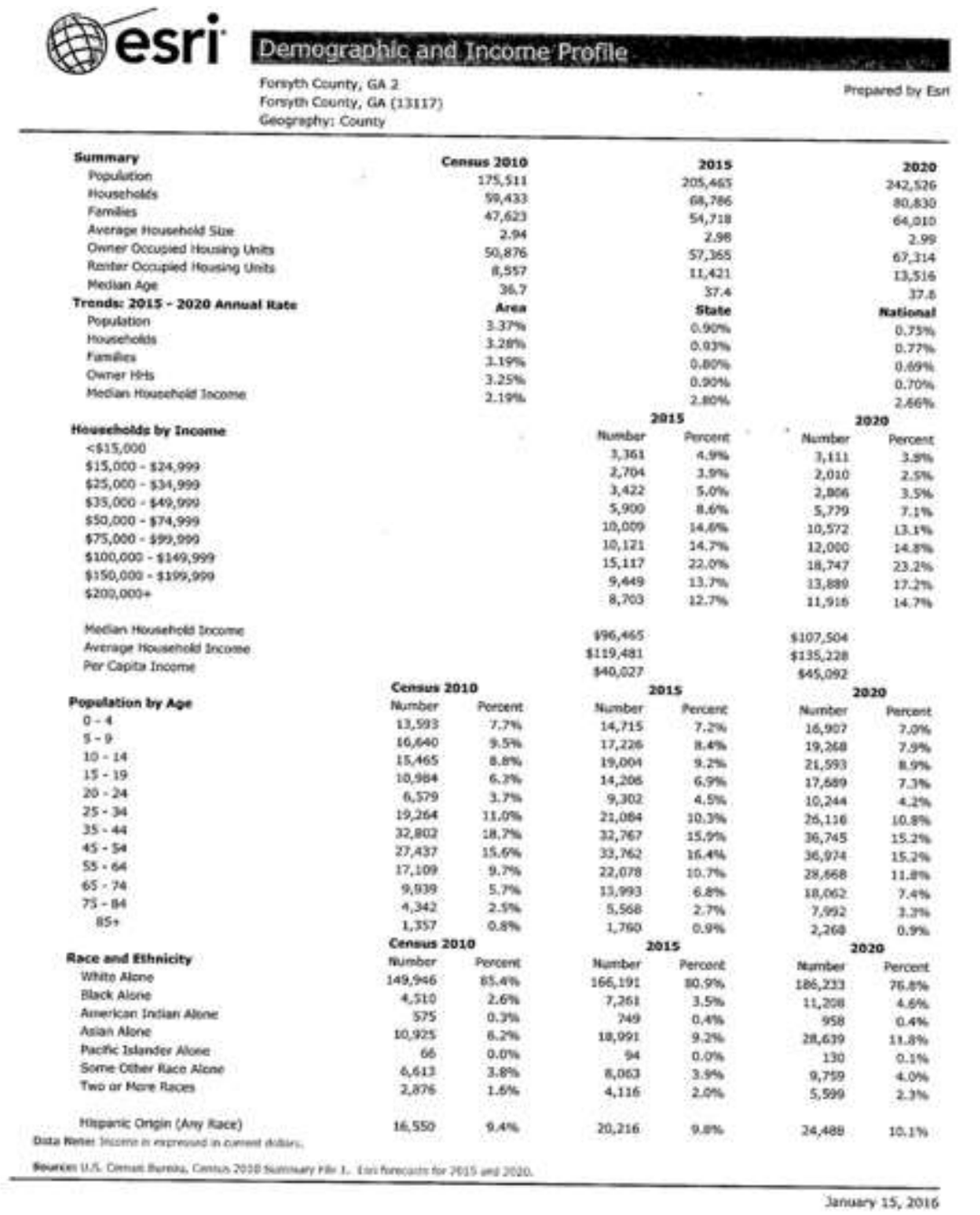


For proposed supply, the local planning authorities should be contacted to discover any undeveloped subdivisions that have been approved for development, evaluate the likelihood of approval, and consider the time frame for those lots/houses to be available to the market and compete with the subject development. Another indicator of supply is the number of single-family and multifamily residential building permits issued monthly and annually for the past several years. Typically these are also available through the County or municipality (city) planning department. Then, the analyst should compare the total existing competing developments plus the proposed subdivision developments with the forecasted demand for single-family lots and homes within the defined market area.[1]

Estimating Preliminary Demand

An accurate preliminary demand analysis is **critical** to the market feasibility of any development. For a proposed single-family subdivision, the number of existing households in the market area should be estimated, and the expected or forecasted growth of the number of households during each of the next five years should be estimated. This data is readily available from local planning agencies and many online data sources such as STDB.com, ESRI Demographics, Neighborhoodlink.com, U.S. Census data, State and National Departments of Labor, etc. In addition to the number of existing and forecasted households in the market area, the annual income distribution within the market area per household is important. Such information reveals the income available for housing expenses, and hence, the likely price ranges of lots and homes in the proposed subdivision. Below is a sample page from ESRI on Forsyth County in Georgia.

[1] For further information, there is a book Market Analysis for Real Estate, by Stephen F. Fanning, MAI available through The Appraisal Institute which may be helpful for further technical aspects of this type analysis.



esri

Demographic and Income Profile

Forsyth County, GA 2
Forsyth County, GA (13117)
Geography: County

Prepared by Esri

Summary	Census 2010	2015	2020
Population	175,511	205,465	242,526
Households	59,433	68,786	80,830
Families	47,623	54,718	64,010
Average Household Size	2.94	2.98	2.99
Owner Occupied Housing Units	50,876	57,365	67,314
Renter Occupied Housing Units	8,557	11,421	13,516
Median Age	36.7	37.4	37.8

Trends: 2015 - 2020 Annual Rate	Area	State	National
Population	3.37%	0.90%	0.75%
Households	3.28%	0.93%	0.77%
Families	3.19%	0.80%	0.69%
Owner HHs	3.25%	0.90%	0.70%
Median Household Income	2.19%	2.80%	2.66%

	2015		2020	
Households by Income	Number	Percent	Number	Percent
<$15,000	3,361	4.9%	3,111	3.8%
$15,000 - $24,999	2,704	3.9%	2,010	2.5%
$25,000 - $34,999	3,422	5.0%	2,806	3.5%
$35,000 - $49,999	5,900	8.6%	5,779	7.1%
$50,000 - $74,999	10,009	14.6%	10,572	13.1%
$75,000 - $99,999	10,121	14.7%	12,000	14.8%
$100,000 - $149,999	15,117	22.0%	18,747	23.2%
$150,000 - $199,999	9,649	13.7%	13,889	17.2%
$200,000+	8,703	12.7%	11,916	14.7%
Median Household Income	$96,465		$107,504	
Average Household Income	$119,481		$135,228	
Per Capita Income	$40,027		$45,092	

	Census 2010		2015		2020	
Population by Age	Number	Percent	Number	Percent	Number	Percent
0 - 4	13,593	7.7%	14,715	7.2%	16,907	7.0%
5 - 9	16,640	9.5%	17,226	8.4%	19,268	7.9%
10 - 14	15,465	8.8%	19,004	9.2%	21,593	8.9%
15 - 19	10,984	6.3%	14,206	6.9%	17,689	7.3%
20 - 24	6,579	3.7%	9,302	4.5%	10,244	4.2%
25 - 34	19,264	11.0%	21,084	10.3%	26,116	10.8%
35 - 44	32,802	18.7%	32,767	15.9%	36,745	15.2%
45 - 54	27,437	15.6%	33,762	16.4%	36,974	15.2%
55 - 64	17,109	9.7%	22,078	10.7%	28,668	11.8%
65 - 74	9,939	5.7%	13,993	6.8%	18,062	7.4%
75 - 84	4,342	2.5%	5,568	2.7%	7,992	3.3%
85+	1,357	0.8%	1,760	0.9%	2,268	0.9%

	Census 2010		2015		2020	
Race and Ethnicity	Number	Percent	Number	Percent	Number	Percent
White Alone	149,946	85.4%	166,191	80.9%	186,233	76.8%
Black Alone	4,510	2.6%	7,261	3.5%	11,208	4.6%
American Indian Alone	575	0.3%	749	0.4%	958	0.4%
Asian Alone	10,925	6.2%	18,991	9.2%	28,639	11.8%
Pacific Islander Alone	66	0.0%	94	0.0%	130	0.1%
Some Other Race Alone	6,613	3.8%	8,063	3.9%	9,759	4.0%
Two or More Races	2,876	1.6%	4,116	2.0%	5,599	2.3%
Hispanic Origin (Any Race)	16,550	9.4%	20,216	9.8%	24,488	10.1%

Data Note: Income is expressed in current dollars.

Source: U.S. Census Bureau, Census 2010 Summary File 1. Esri forecasts for 2015 and 2020.

January 15, 2016

Note that the number of households in this county is expected to grow from 68,786 in 2015 to 80,830 in 2020, an increase of 12,044 households during the fiveyear period, or an average increase of 2,408 households each year. The estimated increase in households can be refined further by the distribution of household incomes. For example, assume that the proposed subdivision has expected sales prices of homes ranging from $250,000-$300,000, typical mortgage terms are 80% loan-to-value ratio, and 5% interest for a 30 year fully amortized term, and typical housing cost ratio is 25% of monthly income. These assumptions suggest annual income levels need to be between $52,000 and $62,000 to afford new homes in our proposed subdivision.

$250,000-$300,000 x 80% = $200,000 - $240,000

$200,000 - $240,000 x 0.064419 (mortgage constant)

$12,884 to $15,461 annual mortgage payments

$12,844 - $15,461 / 25% = $51,376 to $61,844 annual income required

Looking at the above ESRI demographic chart, it is noted only 13.1% of households in this county range from $50,000-$75,000 income per year. Assuming that

the higher income levels would purchase more expensive houses, this would suggest that the total market capture rate for the households in our county would be 315 households per year (2,408 households * 13.1%). Let's also assume typical distribution between renters and homeowners in our local market is 70% homeowners and 30% renters; hence, our 315 households potentially demanding our produce would be further reduced by allocating 220 households per year to ownership versus renters. This estimate would be **divided among all of the competing developments** in our price range in this county or market area.

Demand and Supply Conclusions

If the forecasted quantity of demand exceeds the existing and projected quantity supplied, the preliminary market feasibility study would indicate potential success for the proposed development. Of course, if the existing and proposed competing developments available exceed the forecasted demand, then the developer should not pursue the development of this new single-family subdivision as proposed.

For example, assume that there are three competing residential developments in our price range of $250,000 to $300,000. Also, assume that these three competing developments have sold a total of 50 lots and houses during the past three years; however, they have another 250 additional lots available for sale; hence, there are 200 lots unsold which will need to be absorbed in the future. Also assume that there are two additional subdivision developments planned and approved for development by the local planning board; one subdivision has a proposed and approved 150 lots and the other subdivision has a proposed and approved 135 lots.

Now let's compare the existing supply of competing lots in the area with the estimated demand for new lots and homes in the area. The three existing competing developments have sold 50 lots over the last three years, or approximately 16 lots per year. The existing developments have 200 lots remaining to be sold, and there are an additional 285 lots approved to be developed. Therefore, the total competition is 485 lots. Let's also assume that my development has 65 lots proposed. Combining the available lots, approved lots, and my development, which is a total of 550 lots.

If we consider 220 households are in our development's income bracket and price range in the county each year, one way to allocate those purchases is a direct percentage of each development to the total count.

	Number of Lots	Percentage Capture	Potential Households/lot sales
Existing subdivision	200 Lots unsold	36.6%	81
Approved Subdivision	150 lots	27.2%	60
Approved Subdivision	135 lots	24.5%	54
Our subdivision	**65 lots**	**11.8%**	**26**
Total Market	550 lots	100.1%*	221*

* (not exact due to rounding)

The proposed subdivision must capture 11.8% of the market to compete. This would mean a sellout of the project estimated in 2.6 years (25 sold per year of 65 total lots) assuming no new competing development occurs. There would be costs of interest, taxes, maintenance, marketing, selling commissions, and other items during that period while the lots were selling.

The primary point here is the developer, lender, and appraiser should complete a relatively thorough preliminary market analysis. This analysis would compare the number of competing developments and lots with the number of new households living in the area who have the money available to buy homes in the subject's proposed development and the competing developments in the defined area.

Some Problems with This Preliminary Market Analysis

1. Households with lower income levels may in fact qualify to purchase homes at the higher levels. Increasing overall demand for housing. Some higher level income households may also qualify for higher priced housing, but choose this lower price range.

2. Although the numbers may suggest a go, the target market of potential homeowners should be shown the development plan and their feedback obtained. They may see a problem which could be fixed prior to development.

3. Interest rate fluctuations for home buyers affects the ability to purchase.

4. Other problems could be a limited supply of retail and office space in the area inhibiting potential growth.

5. Possible watershed restrictions may prevent development.

6. Lack of suitable soil for septic systems or water treatment options in the market.

Conclusions

Real estate development can be very exciting and profitable. It can also be difficult and risky. This paper focuses on a specific step of real estate development: how to complete a preliminary market feasibility study. This step takes into consideration an evaluation of supply and demand.

Ultimately, the two main goals for a developer and his or her lender are to mitigate risk and maximize profit. In order to accomplish those goals, a forthright and accurate comparison needs to be made between potential home buyers and the competition and future competition for those home buyers. Without this information, it is difficult for any developer to determine the proposed market they need to capture and the feasibility of a project.