A CONCEPTUAL FRAMEWORK
for
Addressing Loudoun's Unmet Housing Needs

Unmet Housing Needs Discussion Group

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INTRODUCTION

The work presented below was developed as an outgrowth of the Unmet Housing Needs Discussion Group, and is a work in progress. With continued work, we believe this analysis could evolve into an "inter-active framework" which will allow staff and policy makers to test alternative combinations of policies and program inputs in response to changing conditions.

We believe such a framework will help make the Unmet Housing Needs Strategy dynamic, and provide continuing support to address this significant economic and social problem.

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I. KEY COMPONENTS TO ADDRESS HOUSING NEEDS

PREMISE: ADDRESSING THE PROBLEM REQUIRES EVALUATION OF HOUSING CAPITAL ALLOCATIONS, UNIT DENSITY, AND REQUIRED LAND AREA FOR SETTING TARGETS

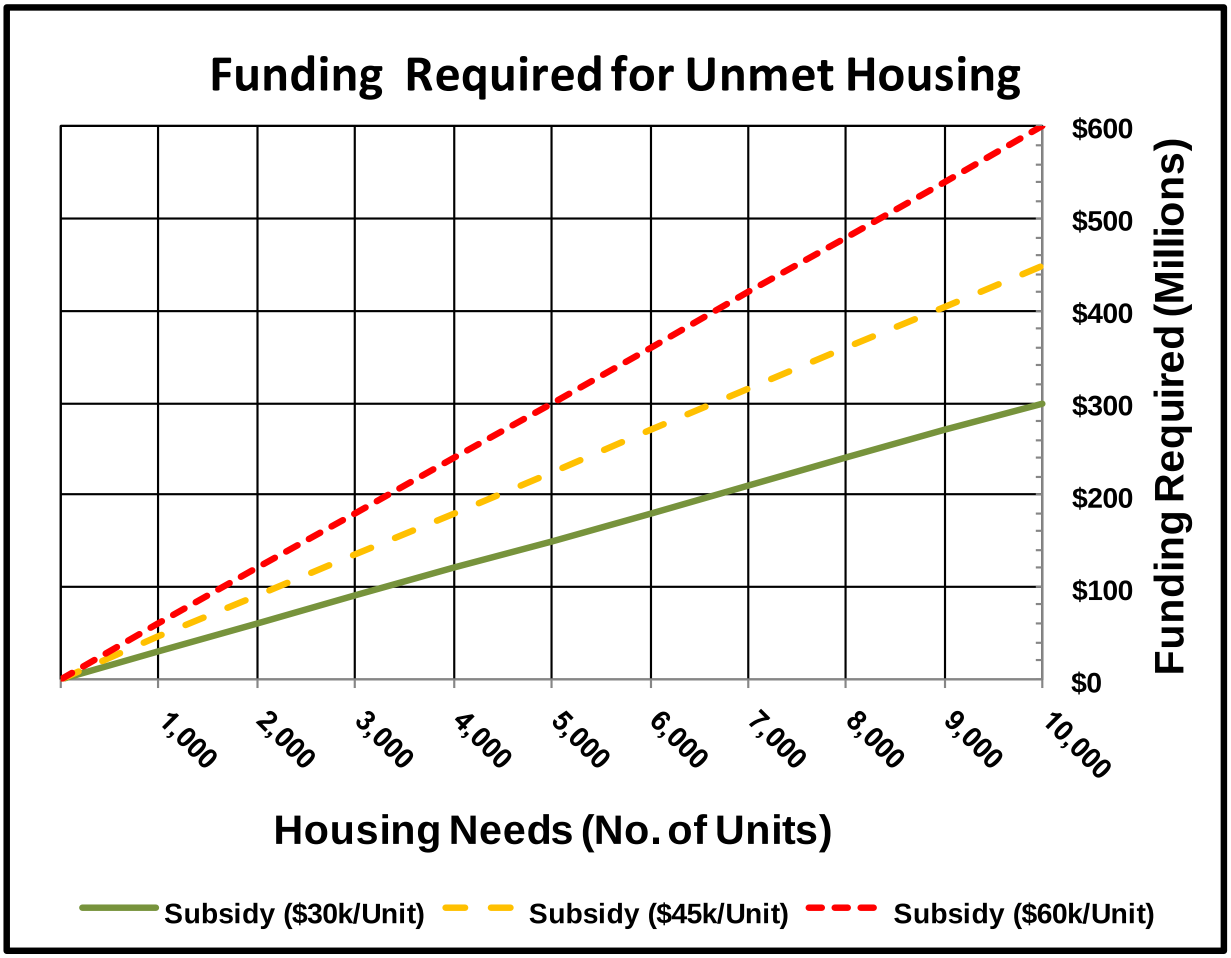
Affordable housing is widely recognized as a large "need" in Loudoun County for citizens earning modest incomes. Various estimates ranging from the George Mason University (GMU) study concluding that 11,000 more units are needed, to the more recent County data which shows that 20,519 homeowners (21% of Loudoun's total) and 12,551 renters (47% of total) are "house burdened" in Loudoun. The need will continue to grow as Loudoun accommodates the projected 100,000 plus population increase over the coming twenty years.

Therefore, the annual target for Unmet Housing Needs Units (UHNUs) will be only a fraction of what is perceived to be the overall need. The County annual targets for building UHNU's are not related to overall "needs" directly, but rather to the available "inputs" marshaled by the County and private developers.

Essentially there are three major inputs which will determine the number of UHNU's to be built in any given year or longer period:

1. **The Relationship of Housing Capital Allocations:** The Housing Trust Fund has been used to provide low interest loans on favorable terms for specific affordable projects. These loan funds are then used by the builder/developer recipients to subsidize funding obtained through various state and federal programs to provide housing that is more affordable. The policy controlling the amount of loan subsidy on a per unit basis for these projects is a key factor in determining the required magnitude of funding and number of units ultimately constructed within the County. The following graph (**Figure 1**) illustrates the impacts of various levels of subsidy on funding levels and number of housing units provided.

Figure 1: Funding Required for Unmet Housing

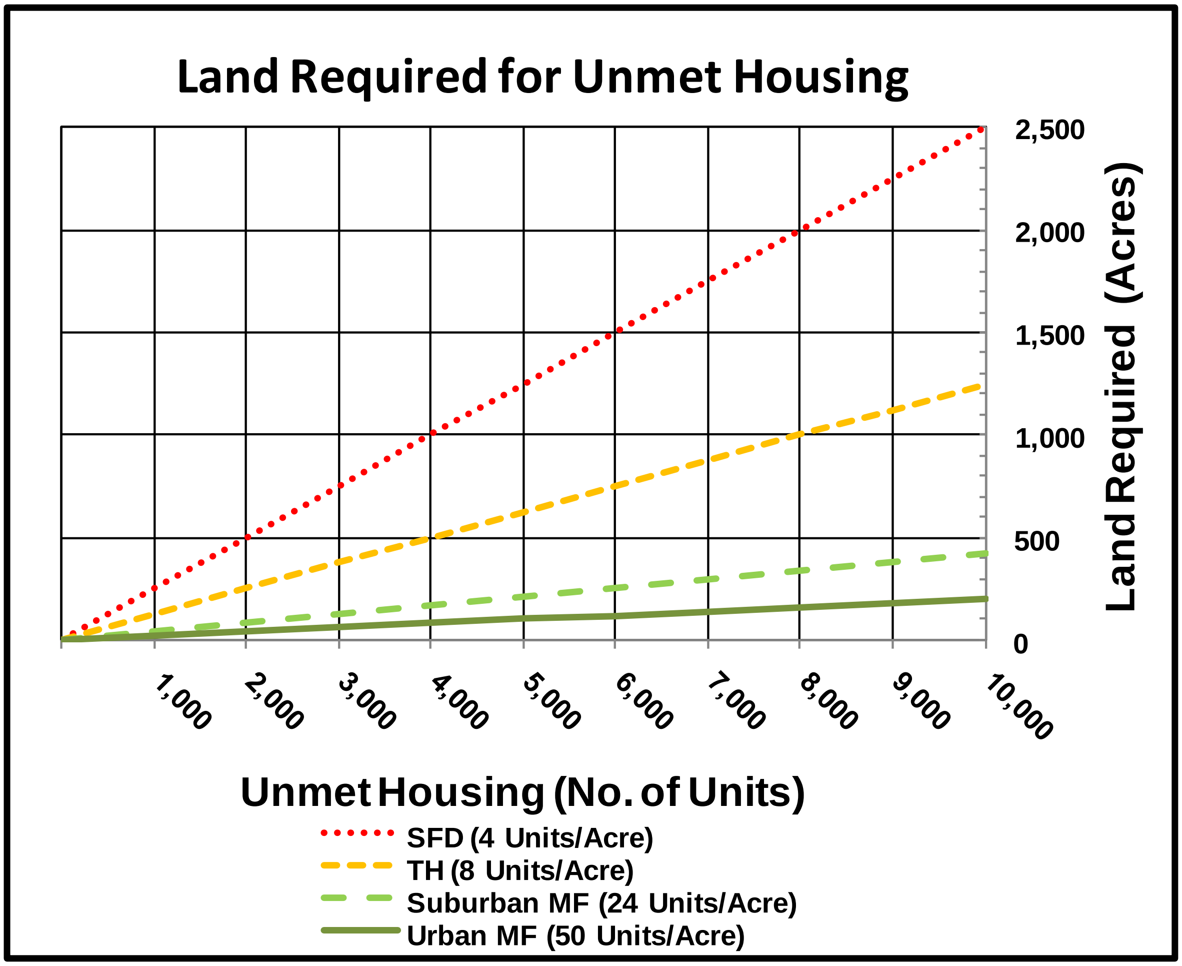


FINDING:

"Funding levels per unit of unmet housing need to be capped to be sustainable the long term."

2. **Land:** Our recommendations cover a variety of ideas for obtaining land for construction of housing that addresses the unmet housing needs of Loudoun County. Land, properly zoned, at zero basis or minimal cost, is the key driver in providing housing that is more affordable. **Figure 2** illustrates this need.

Figure 2: Land Required for Unmet Housing



FINDING:

"Adoption and implementation of a land acquisition strategy is crucial to the success of an overall unmet housing solution."

3. **Density:** An important factor in addressing the issue of providing more housing to accommodate the unmet needs of County residents is the types of housing and resulting density. This directly affects the amount of land area required for unmet housing development and the associated impacts. **Figure 2** illustrates the dramatic effects of typology – thus the density – required to address the identified housing needs within Loudoun County.

II. FUNDING SOURCES: UNMET HOUSING NEEDS (0 to 80% of AMI)

A. Low Income Housing Tax Credit Financing

The below charts reflect potential funding sources for construction of unmet housing needs units in Loudoun County based on historical data for the past several years. The primary capital source is equity derived from the sale of Low Income Housing Tax Credits (LIHTCs), associated with affordable developments providing housing opportunities for those with incomes up to eighty percent (80%) of the Area Median Income (AMI) for the locality in which the units are constructed.

Tax credits may be derived from one of two programs

- **9% credits** which is a competitive based program with limited annual funding. As the name suggest, the 9% credits are based on 9% of allowable project cost for a period of ten (10) years.

- **4% credits** which are based on 4% of allowable project costs for a ten (10) year period. These credits can be derived through certification and local bond offerings which are non-competitive and have more lenient funding limitation. In Loudoun, the bonds associated with the 4% tax credit program are offered though the Loudoun County Economic Development Authority.

The 9% credit program generates more tax credit value which translates, through the sale of the tax credits, to more equity to use toward project cost. Thus, additional capital requirements for projects supported with 9% tax credits are less than those using 4% tax credits, and should require less local subsidy.

Further, projects utilizing 9% tax credits, with a lesser capital requirement (thus less debt) have a lower debt service. This results in the need for less rental income to support their debt service, and allows them to offer lower rents and serve housing needs of those with in the lower AMI bands. Remaining project costs in both programs are typically covered through other governmental program grants and subsidies, contributed land, and deferral of a portion of the developer fees for the project.

An alternative concept that is now being promoted is combining the use of 4% and 9% LIHTC programs within a single project. **Figure 3** provides a summary of typical capital sources and funding percentages for project financed utilizing 4% LIHTCs, 9% LIHTCs, and a "hybrid" of projects qualifying for 4% LIHTCs and qualifying for 9% LIHTCs.

Figure 3: Capital Sources- LIHTC Financed Projects

	Project with 4% LIHTC Structure			Project with 9% LIHTC Structure			Hybrid Project - 4% LIHTCs & 9% LIHTCs		
Source of Funds		**Dollars/Unit**	**%**		**Dollars/Unit**	**%**		**Dollars/Unit**	**%**
Primary Debt	***$***	***129,000***	***43%***	***$***	***69,000***	***23%***	***$***	***109,000***	***36%***
Tax Credit Equity	***$***	***111,000***	***37%***	***$***	***186,000***	***62%***	***$***	***136,000***	***45%***
Local Subsidy Funding	$	33,000	11%	$	24,000	8%	$	30,000	10%
Other Funding	$	-	0%	$	6,000	2%	$	2,000	1%
Land Value	$	15,000	5%	$	15,000	5%	$	15,000	5%
Deferred Developer Fee	$	12,000	4%	$	-	0%	$	8,000	3%
TOTAL			100%			100%			100%
Assumption =	**$**	**300,000**	**per unit**	**$**	**300,000**	**per unit**	**$**	**300,000**	**per unit**

FINDINGS:

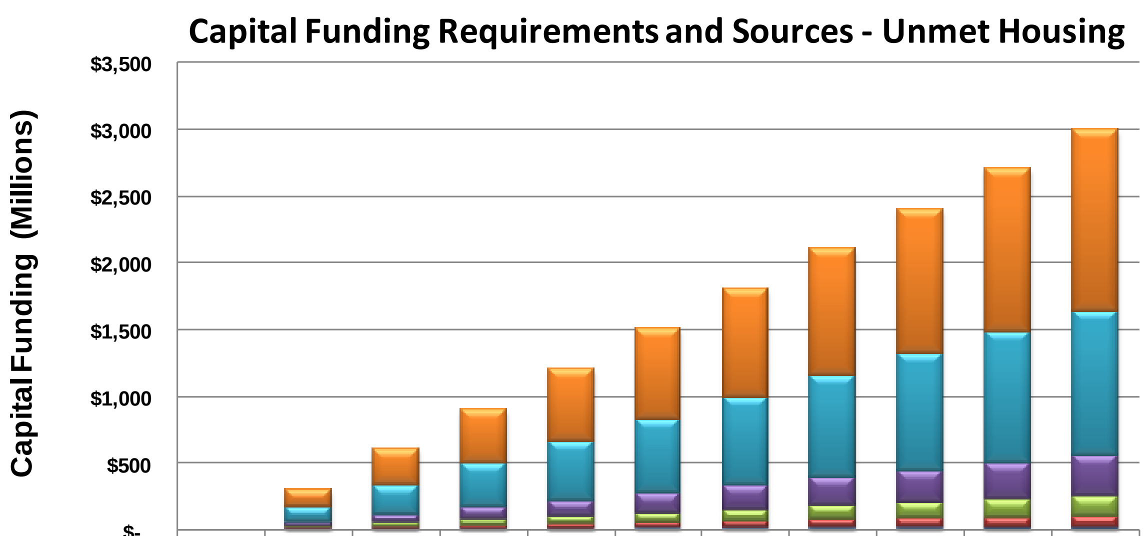
"Debt funding requirements for projects supported with 9% tax credits are less than those using 4% tax credits."

"Projects qualifying for 9% tax credits should require less local funding subsidy than bond funded projects with equity derived from 4% tax credits."

B. Capital Funding Requirements and Sources

The per-unit blended capital stack assumption in Figure 3 was scaled to look at funding requirements for the total unmet housing needs in Loudoun County as identified by various organizations. **Figure 4** illustrates the funding requirements from various sources. Although the numbers may look daunting – $1.36 billion in LIHTC equity to fund construction of 10,000 units – it is reported that Louisiana used LIHTCs following Hurricane Katrina to leverage $1.1 billion in tax credit equity to support the creation of 8,448 new units after Hurricane Katrina (Scaly et al., 2018).

Figure 4: Capital Funding Requirements & Sources



	0	1,000	2,000	3,000	4,000	5,000	6,000	7,000	8,000	9,000	10,000
LIHTC Equity	$-	$136	$272	$408	$544	$680	$816	$952	$1,088	$1,224	$1,360
Primary Debt	$-	$109	$218	$327	$436	$545	$654	$763	$872	$981	$1,090
Local Subsidy Funding	$-	$30	$60	$90	$120	$150	$180	$210	$240	$270	$300
Land Value	$-	$15	$30	$45	$60	$75	$90	$105	$120	$135	$150
Deferred Developer Fee	$-	$8	$16	$24	$32	$40	$48	$56	$64	$72	$80
Other Funding	$-	$2	$4	$6	$8	$10	$12	$14	$16	$18	$20

No of Housing Units/Sources of Funding (Total Cost = $300,000/Unit)

FINDING:

"10,000 UHNUs could be provided with a combination of $300M of local subsidy funding, $1.36B of equity funding using LIHTCs, and $1.09B of primary debt – much of which could be HUD insured non-recourse loans."

C. Virginia Housing Development Authority (VHDA) Funding

In Virginia, the allocation of Low-Income Housing Tax Credits (LIHTC) is administered by the Virginia Housing Development Authority (VHDA). As discussed above, its two major programs are the 9% "competitive" program and the 4% "bond" program. VHDA also sends funding to local jurisdictions for affordable housing through a variety of low-interest loan programs.

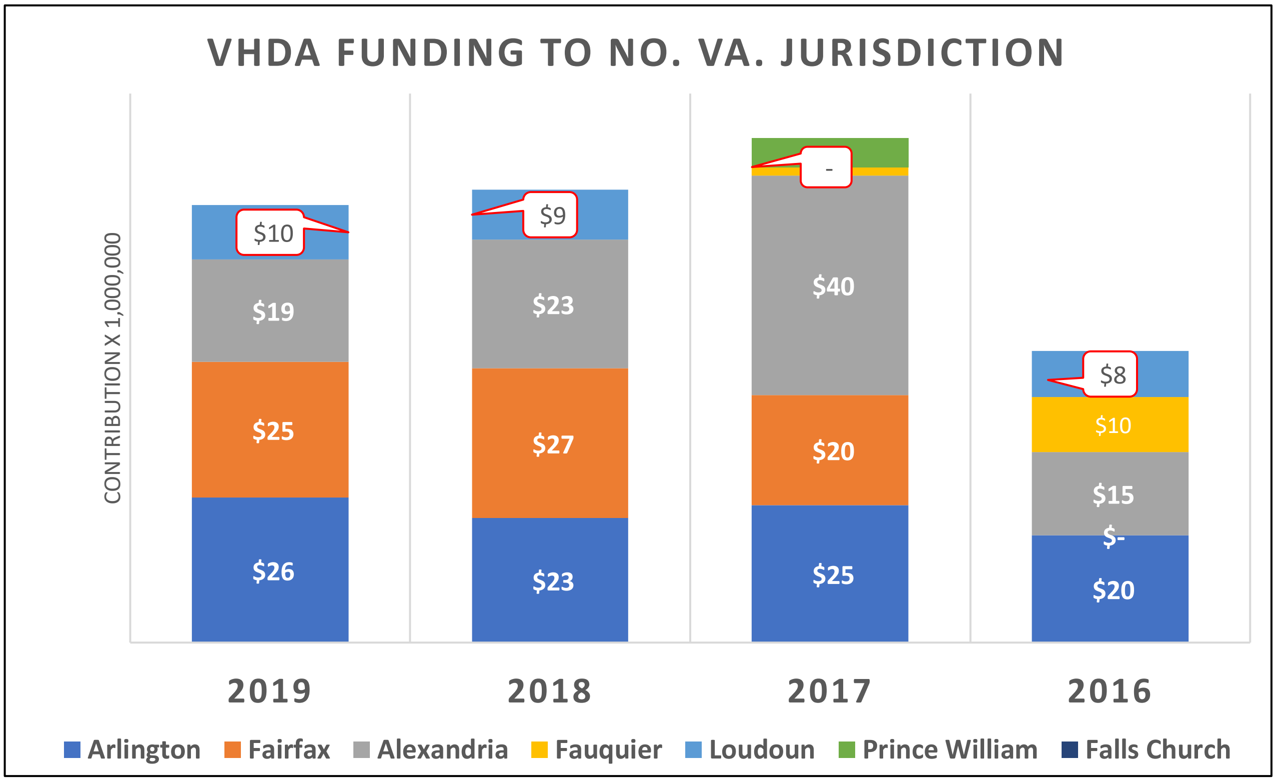
As illustrated in **Figure 5**, Loudoun County has received a great deal less competitive tax credit funding than the other major jurisdictions in Northern Virginia. Over the period from 2006 through 2019, Loudoun County has received only 9% ($60.66 million) of VHDA funds coming to Northern Virginia as compared to 36% going to Arlington County ($242.99 million). As noted, 85% of VHDA's funding to Northern Virginia has gone to three jurisdictions: Arlington, Fairfax, and Alexandria.

Figure 5: Historical Record of Virginia Housing Development Authority Allocations of Funding for Northern Virginia Local Governments

JURISDICTION	*2019 (millions)*	*2018 (millions)*	*2017 (millions)*	*2016 (millions)*	*2015 (millions)*	*2014 (millions)*	*2013 (millions)*	*2012 (millions)*	*2011 (millions)*	*2010 (millions)*	*2009 (millions)*	*2008 (millions)*	*2007 (millions)*	*2006 (millions)*	*TOTAL $ (millions)*	*% of TOTAL*
Arlington County	22.7 3.67	22.65	25.00	19.50	20.94	20.0	3.93	12.3	21.32	12.65 10.28	12.6		12.0	11.45 12.00	242.99	36%
Fairfax County/ Fairfax City	24.75	20.17 3.49 3.61	5.93 14.18		5.79 13.12 11.33	17.48 6.83				3.13	9.79		18.8 2.78 2.93	9.00	173.11	26%
Alexandria City	18.63	23.46	5.00 12.95 22.02	15.25	18.05		15.00		7.31 2.30	3.55	4.02	7.07			154.61	23%
Fauquier County			1.54		4.59		6.63 8.00			3.40					24.16	4%
Loudoun County	9.97	9.12		8.44 15.51				14.20				1.00	2.42		60.66	9%
Prince William County			5.33					10.33							15.66	2%
Falls Church City															0	0
Town of Herndon															0	0
City of Manassas															0	0
City of Manassas Park															0	0
														TOTAL	671.19	100%

As illustrated in **Figure 6**, Loudoun County has done much better in the last four years (2016-2019). But, as illustrated in **Figure 7**, Loudoun is still short of achieving VHDA funding proportional to its relative size, as measured by population.

Figure 6: VHDA Funding to No.Va. Jurisdiction

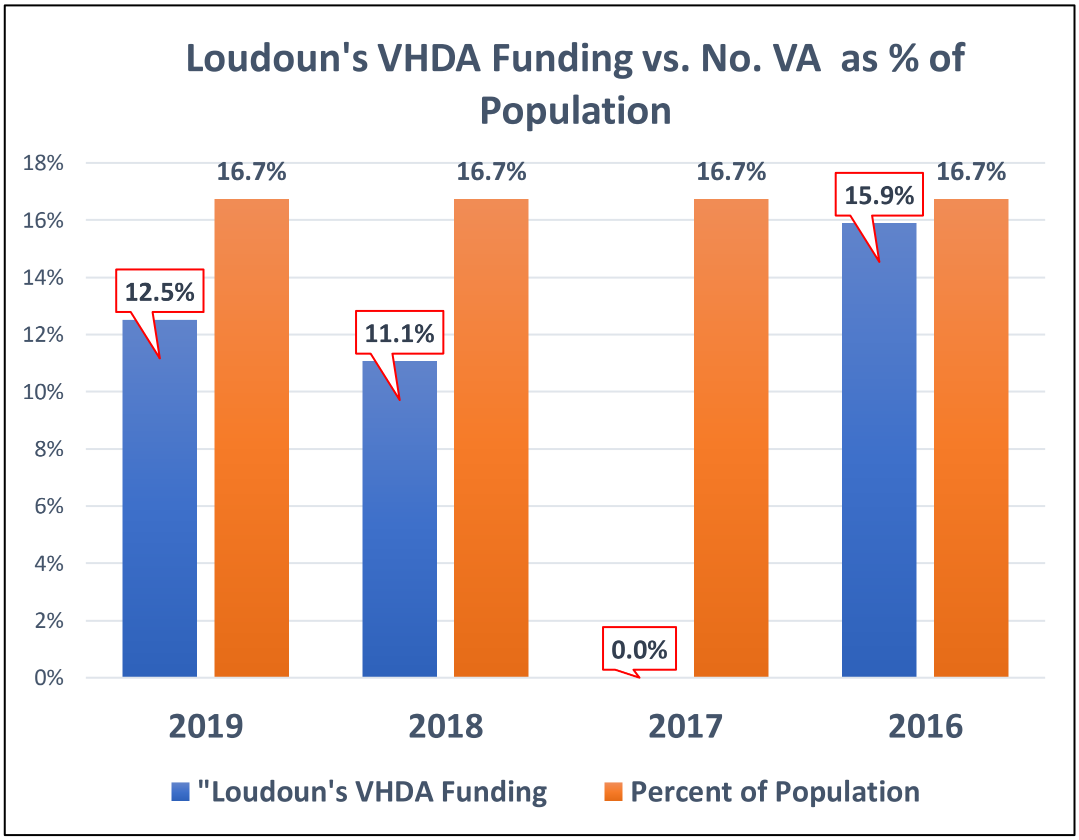


FINDING:

Loudoun County's receipt of VHDA funding is at the top of the chart, showing just under $10 million for 2019, 2018, and 2016. There was no contribution in 2017.

There are several reasons for this relative shortfall in funding. Most importantly, prior to 2016, Loudoun County had drafted its Affordable Dwelling Unit (ADU) Zoning Ordinance in such a way as to make it very difficult to use VHDA funding. That ordinance was revised in 2016 with obvious effect. It is also very important to point out that, since 2016, Loudoun established program guidelines for using the Housing Trust Fund and the County began to deploy those resources. Thirdly, and very important, Loudoun has been adding Housing Department staff and giving them the resources necessary to grow Loudoun's Housing Program.

Figure 7: Loudoun's VHDA Funding



FINDING:

Loudoun has received less than 10% of VHDA funds to No.Va. over the last four years compared with the other No.Va. jurisdictions, while its 2019 population consisted of almost 17%.

By continuing to build the County Housing Fund with sustainable funding, by deploying those precious resources strategically, and by continuing to build strong public/private partnerships, there is plenty of room for Loudoun County to procure a larger share of VHDA funding coming to Northern Virginia to the benefit of providing many more UHNUs.

III. CONCLUSIONS

The material presented in conceptual format in this report lends itself to the creation of an inter-active model which could enable County Staff and the Board of Supervisors to test multiple scenarios for meeting Unmet Housing Needs on an Annual, Short Term and Long Range Strategy within the context of other public policy goals and financial demands. The beginnings of such a model are provided in the attached Appendix.

A. OBVIOUS OBSERVATIONS:

1. The more funding available the more UHNU's can be built.
2. The allocation of funding per unit significantly effects the number of units financed with an equal amount of money. Rental units are cheaper overall and require less public funding than purchase units.
3. There is a direct relationship with increasing the densities of the units per acre and the reduction of the land area in acreage to accommodate the same number of units.

B. OTHER CONCLUSIONS

1. The setting of targets for the creation of UHNU's is NOT a technical issue, but rather it is a public policy issue to be determined by the Board of Supervisors by committing the level of resources they wish to mobilize to contribute to reducing the overall "need."
2. The Conceptual Framework is simply a means of graphically showing the overall relationships among the key determinates.
3. The other major policy determinate is to set policy on where resources should be focused along the continuum of Average Median Income (AMI). A more sophisticated model might be able to build this into the relationship making it easier to understand the requirements of different levels of AMI target groups.
4. It should be noted that there are a number of other issues that the UHN Strategy can, and should, address -- such as ways to fast track applications, fee waivers, in-kind contributions, and other policies and regulations -- which will affect the output annually of UHNU's. These factors are secondary to the availability of finance and land.
5. Finally, one overall objective of the UHN Strategy is to provide a robust, sustainable, and certain level of County commitment so that the builders with the expertise and commitment can make development plans with certainty to maximize the opportunities available.

C. FURTHER ANALYSIS DESIRABLE

1. Establish what the total public costs of affordable rental and purchase housing are including in-kind public contributions such as fee waivers, bonus densities, etc. in order to make a more precise and informed judgement on the optimum allocation of public resources between them.
2. Set criteria or similar policy framework for determining priorities of financial commitments among the "house burdened target groups" as measured by the % of AMI.
3. Attempt to estimate more accurately Unmet Housing Needs based on social and demographic factors rather than the simplistic calculation of "need" based on Annual Salary x 30% = level of affordability.
4. Clarify how special needs target groups will be funded (i.e. homeless, abused women, physical and mental disabled, low income seniors etc.
5. Survey the existing "market rate" housing inventory by price categories by Magisterial Districts to calculate existing Affordable Housing that should be preserved.
6. Develop a Rural Loudoun response to farm worker housing needs.

APPENDIX: Model for Calculating Housing Needs Across AMI Needs Categories

While preparing this Conceptual Framework, a sub-set of volunteers, lead by appraiser Norman Myer, prepared a number of very useful mathematical models. The purpose of these models was to test variables and the impact of those variables on possible policy outcomes to address unmet housing needs.

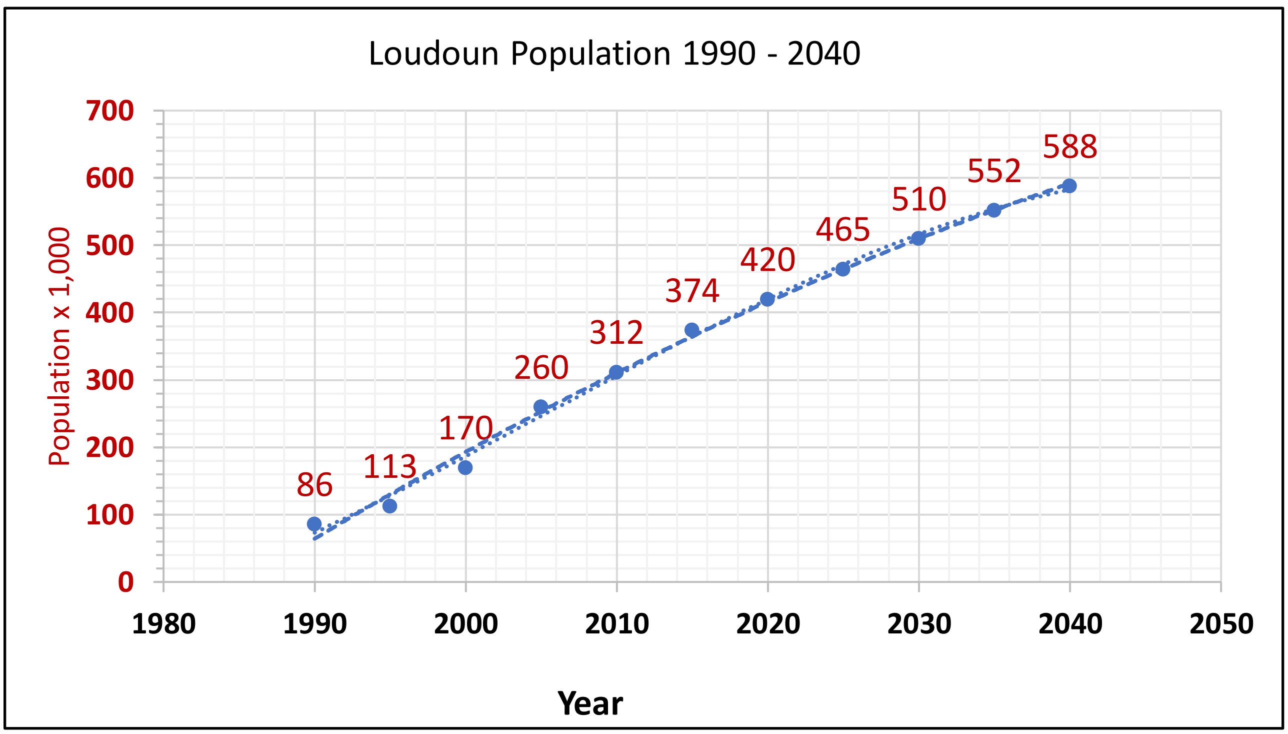
The following charts are intended to show a methodology for beginning to quantify a variety of elements. The charts have some basic assumptions and parameters that meet relatively current conditions, i.e., mortgage rates, average median income, housing and debt to earnings ratios, dwelling units per acre, and growth projections. For each model these parameters may be changed and tested based on changes in market and other conditions.

Although not yet sophisticated, this is the beginning of a model that could be developed by County staff and used by the County for doing simulations of various policy options being considered by the Board of Supervisors. Following are three examples of formulas developed to date.

A. Population Projections

Based on the Kimley Horn medium population forecast, Loudoun County is projected to grow from an estimated population of 420,000 people in 2020 to 588,000 in 2040, or 40% (1.7% per year). The growth rate for the prior 20 years was 147% (4.6% per year). This growth rate is provided on **Chart A-1**. While this chart as been displayed previously, we added it here so as to make it available to the rest of the charts following.

Chart A-1: Population Projection 2020-2040



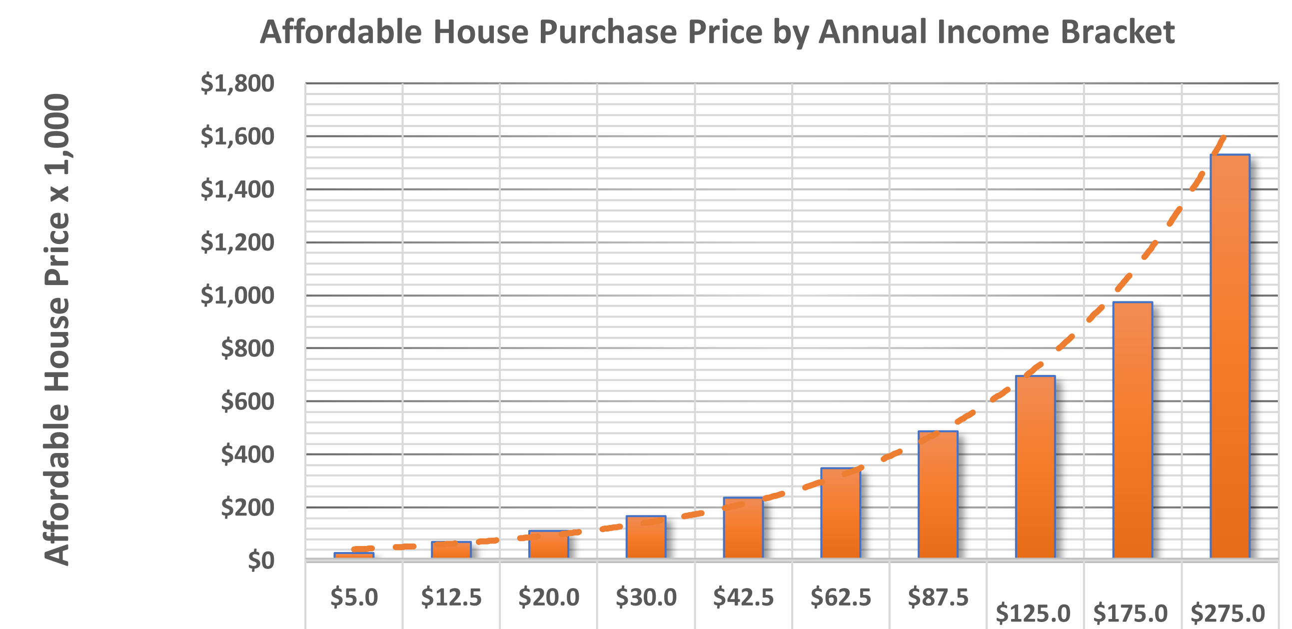
Loudoun County Market Analysis for Envision Loudoun by Kimley Horn January 2018 2015 through 2040 Total Population Medium Forecast, Pages 21 at 1.9 and 91 at 2-15.

B. Affordability

A key question is how many units would be rented versus how many would be purchased under various methods of financing and at various levels of income. The following charts show what a household can pay for housing at each income range.

Chart B-1 illustrates increasing amounts of household income on the x axis and the amount that household can pay for a house on the y axis. For example, looking all the way to the right, a household earning $275,000 per year can afford a home priced at $1.533 million.

Chart B-1: Affordable House Purchase by Annual Income



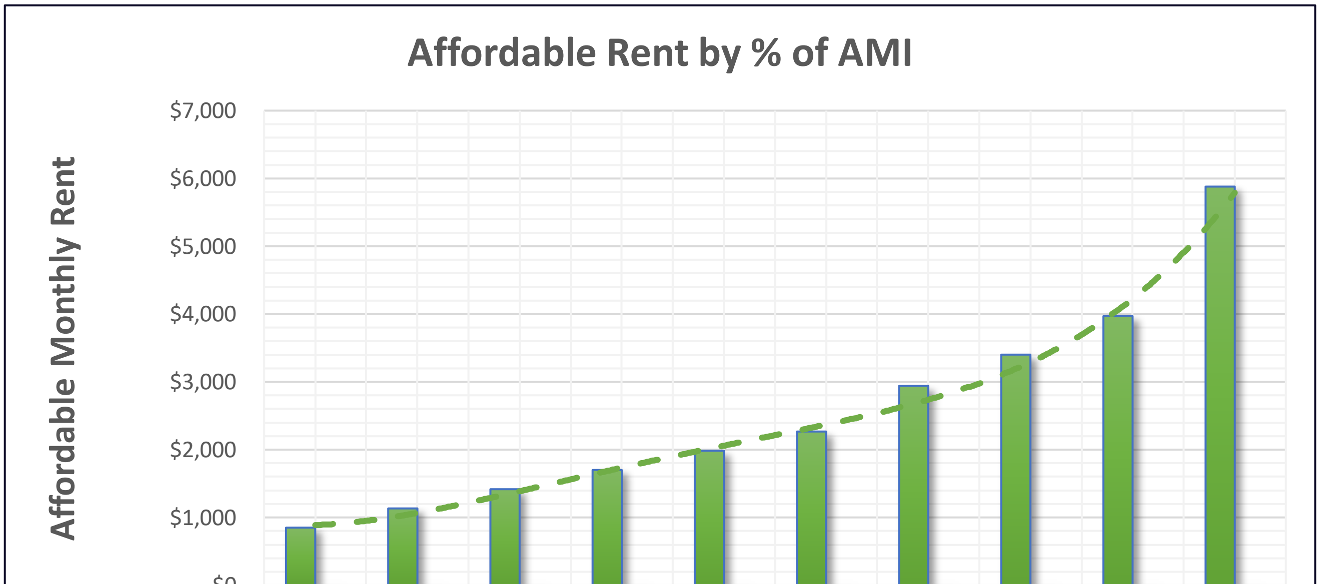
Household Income x 1,000	$5.0	$12.5	$20.0	$30.0	$42.5	$62.5	$87.5	$125.0	$175.0	$275.0
House Value x 1,000	$27.84	$69.59	$111.35	$167.02	$236.61	$347.96	$487.15	$695.92	$974.29	$1,531.0

Key Point: With opening market prices for homes in Loudoun County starting at approximately $350,000, a household must be earning at least $63,000 to qualify to purchase that home (based on current mortgage rates and 30% of income allocated to housing). At the Median Sale Price in Loudoun, as of February 2020, of $493,750, the household income would have to be in excess of $87,500 per year or over 70% of the Area Median Income (approximately $130,000 for a family of four). Considering other factors, such as credit ratings, other debt obligations, job security, and history of earnings, even purchasing a home in the $350,000 range is a considerable challenge.

In short, Chart B-1 illustrates that households earning less than $85,000 per year, or 70% of AMI, are increasingly likely to be renters not home buyers.

Chart B-2 is built like the previous chart, but here it is to illustrate what monthly rent can be afforded based on a household's income. As before, Annual income is shown increasing on the x axis. The rent affordable at that income is shown on the y axis.

Chart B-2: Affordable Rent by Percent of AMI



	$37.8	$50.4	$63.0	$75.6	$88.2	$100.8	$126.0	$151.2	$176.4	$252.0
Affordable Rent	$851	$1,134	$1,418	$1,701	$1,985	$2,268	$2,940	$3,402	$3,969	$5,880
% of AMI	30.0%	40.0%	50.0%	60.0%	70.0%	80.0%	100.0%	120.0%	140.0%	200.0%

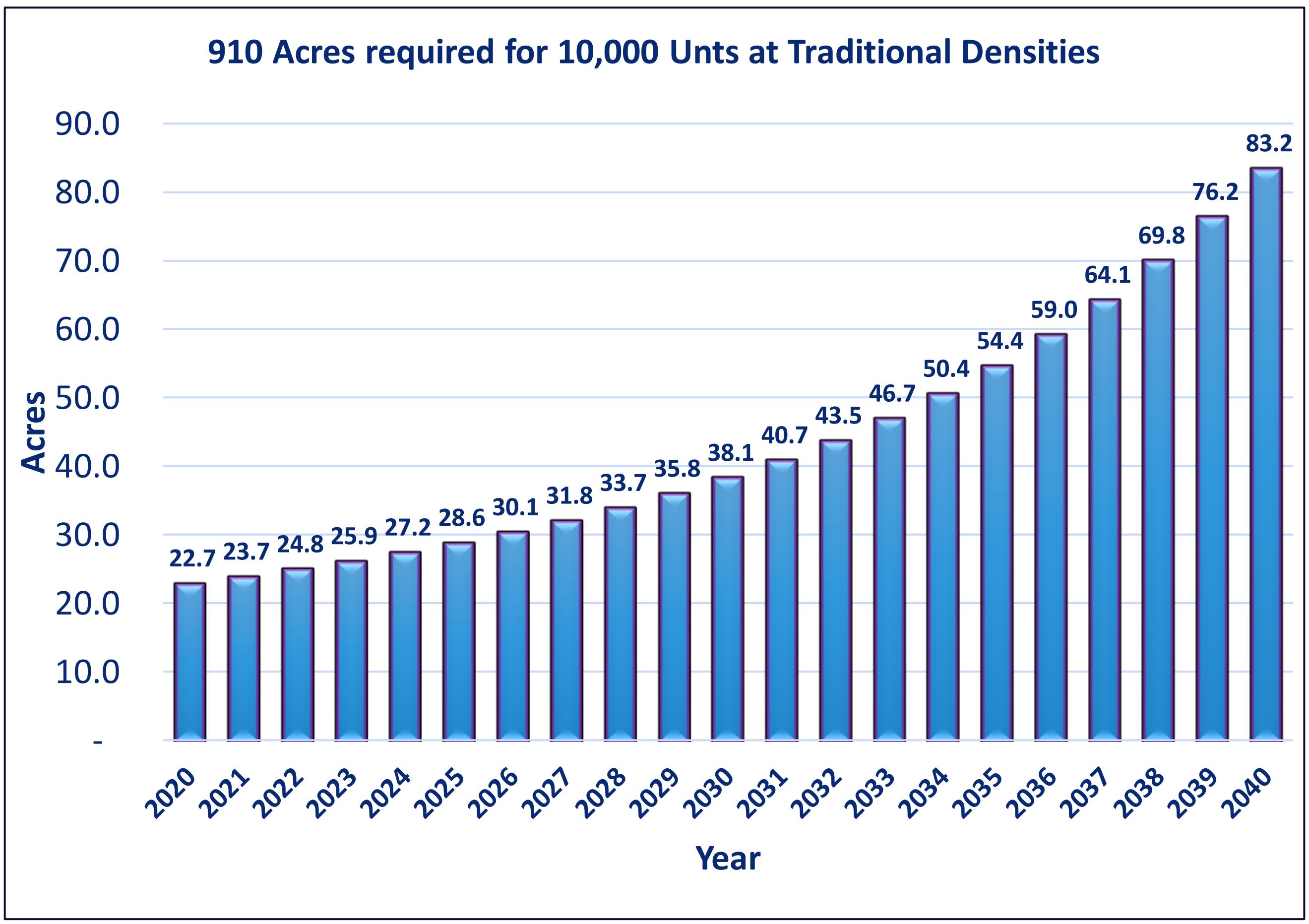
Key Point: With the HUD Fair Market Rent (often considered the average rent) for a 2-Bedroom apartment in Loudoun County at $2,184 per month (in 2019), a family of four would have to be earning close to $100,000 per year (80% of AMI) to afford that rent (based on 27% of income for housing expense). There are, of course, older apartment units and smaller apartments that rent well below this figure. Still, it is virtually impossible to find a non-subsidized apartment in Loudoun County for under $1500 per month. According to the chart, that rent would take a household income of over $63,000 per year (50% AMI). Households below 30% of AMI simply cannot afford to live in Loudoun at all.

C. Land Requirements

For the purpose of building the next two charts, assume that Loudoun County is willing to commit to construction of 10,000 Unmet Housing Need Units over the next 20 years. A first question is, how much land is required? The following two charts show the land area, in acres per year, that would be required under two scenarios: 1) using a “traditional” mix of housing densities and 2) using an “urban” density mix. The number of units per year is phased in based on population growth, from Chart A-1, and providing time for long term goals to be developed and implemented.

Chart C-1 is based on more typical Loudoun County densities with a mix of: 10% single family detached (4 DU/Acre); 40% townhouses (8 DU/Acre); and 50% garden style apartments (24 DU/Acre).

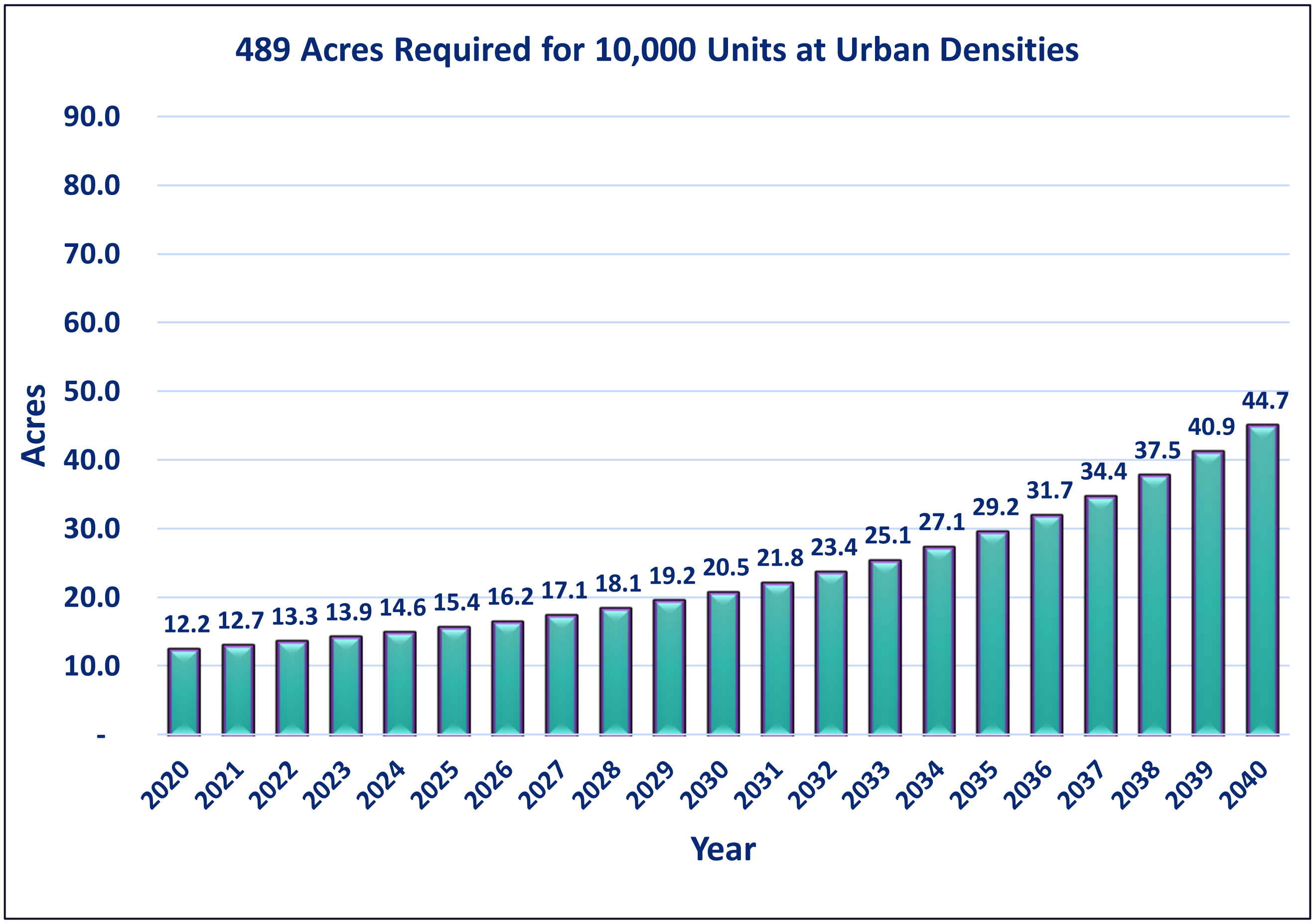
Chart C-1: Land Required in Acres by Year – Traditional Density



Key point: The required total area required for 10,000 dwelling units is 910 acres.

Chart C-2 is constructed using a more urban density mix of: 30% townhouses (8 DU/Acre) and 70% apartments (50 DU/Acre).

Chart C-2: Land Required in Acres by Year – Urban Density



Key point: The required total area required for 10,000 dwelling units is 489 acres, which is roughly half of the acreage needed in the scenario above. If Loudoun County is going to pursue this more urban approach to density, in order to reduce the amount of land needed for UHNUs, it will be necessary to revisit the current policy of not having UHNUs near Metro.

In closing, the Excel spreadsheets prepared by the committee and presented here are only a glimpse at the type of interactive model that might be prepared in order to simulate and test various housing policy options. This need not be an expensive or lengthy process. The handful prepared here and used by the committee have been very helpful in focuses our thinking. We are happy to provide these to the County for their use.