

Arlington's Role in Addressing the Washington Region's Missing Middle Housing Challenges

By Michael A. Spotts

On May 12, 2021, I had the opportunity to join Arlington's Committee of 100 discussion on Missing Middle housing. In this post, I am sharing and expanding upon my presentation and discussing why Arlington should lead on missing middle housing from the perspectives of infrastructure expenditures/efficiency, housing need and affordability, and environmentalism (view the video of the [full Committee of 100 presentation](#) and the accompanying slides). Several graphics included below were produced by the Alliance for Housing Solutions.

Can Arlington Solve Missing Middle Housing On its Own?

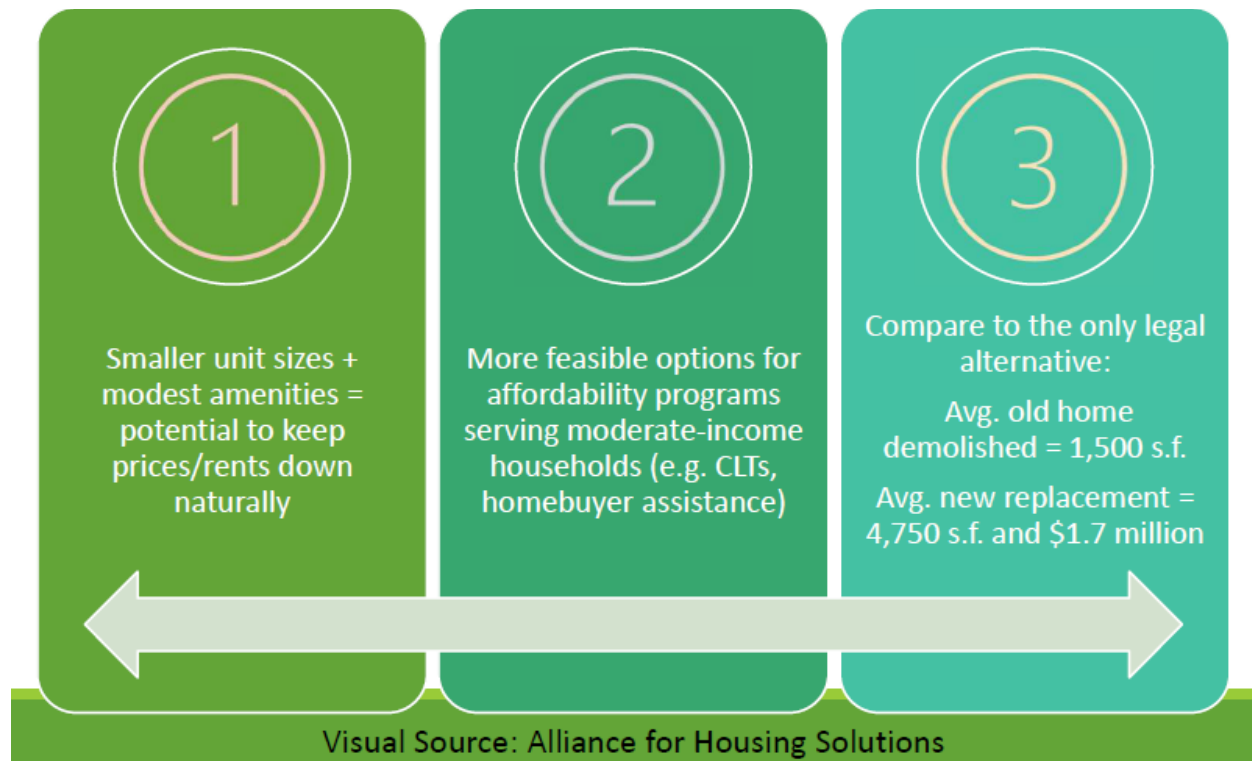
As with any housing challenge the short answer is "no." Housing markets are impacted by both local and regional factors, and no single jurisdiction can solve any housing challenge on its own. However, Arlington is not alone, and Arlington's specific circumstances and place in the region make local action all the more critical.



Source: <https://missingmiddlehousing.com/>; Opticos Design

Missing middle generally refers to diverse building types that are often absent in the market, in part due to zoning constraints. The specific housing types that are missing vary by jurisdiction. Missing middle in the District of Columbia is different from missing middle in Loudoun County.

As such, details matter. There is no one "missing middle policy" – there are policy ideas, but the ultimate impact of a policy that allows duplexes by right would vary from one that prioritized townhomes, or one that allows quadriplexes but requires a portion of the units to be affordable. Arlington County is in the research phase. No specific changes have been proposed, and as such, we have the opportunity to define missing middle in a way that best addresses the housing, infrastructure, and environmental challenges present in Arlington County.



In reference to affordability, building form relates to, but is not the sole determinant of, housing prices.

However, newer missing middle housing types are typically lower cost than the alternative. In Arlington, that alternative is most often a complete redevelopment that pushes purchase prices up to and above \$1 million. ***Our point of comparison in a post-missing middle environment is not the status quo (or a perception of the status quo that overstates the affordability of the current single-family housing stock). The counterfactual is the continued repurposing of existing property into the ultra-luxury space, a trend that continues apace across the County.***

From an affordability perspective, there are benefits beyond lowering the potential price point of ownership-oriented housing. First, missing middle types are often more conducive to rental housing, which could open more neighborhoods up to households with a wider range of incomes (or those without the wealth or family support to provide a down payment). In addition, allowing multiple units on a given lot can lower the cost of producing housing; land and fixed costs are spread over a larger number of units, and on average there are marginal construction cost savings associated with attached housing forms. Reducing the cost profile of housing production can make targeted affordability policies financially viable.

MISSING MIDDLE BANNING SINGLE-FAMILY DETACHED HOMES

At this point, I think it is important to note that allowing missing middle does not mean banning single-family detached homes. We are talking about ending the practice of using the power of the state – that is, government zoning policy – to intentionally raise the cost of housing and limit the production of more naturally attainable housing types.

Despite many of the claims to the contrary, ending bans on these housing types will not automatically result in a radical transformation of Arlington’s lower-density neighborhoods. While I believe that well-designed missing middle reforms can have a positive impact, single-family homes will continue to be the most prevalent housing type in lower-density neighborhoods – and will continue to be produced – for the foreseeable future. I believe this to be the case for several reasons:

- **Recent rehabilitation/addition activity:** Much of Arlington’s existing single-family stock has recently been upgraded and/or considerably expanded. Those homes are unlikely to be redeveloped until they again reach the end of their useful life or otherwise require capital improvements. Though missing middle policies could allow these larger homes to be retrofitted to multi-unit homes if that’s in the interest of the owner, such conversions have been a natural part of urban evolution throughout history and would not result in further changes to the visual element of the neighborhood environment.
- **Matching willing sellers with willing buyers:** Even in the (near impossible) scenario that all homes that went on the market were redeveloped as missing middle housing, most neighborhoods do not see sufficient short-term turnover to experience radical change.
- **Demand for single-family homes:** In reality, even in today’s skewed market most existing homes are not purchased by developers. And given the (still strong) demand for detached single-family homes, a significant proportion of existing homes that do go on the market will remain in the single-family detached stock, either because an owner-occupier wants a detached single-family home, or a developer is responding to demand for that type.

Given these mitigating factors, is missing middle still worth the effort? I unequivocally believe the answer is yes. This post lays out why missing middle matters from a range of perspectives. However, it also makes sense from a strict housing production standpoint. According to [Moody’s Analytics data accessed via PolicyMap](#), from 2015-2019 there were an average of 2,660 single-family homes sold in Arlington County annually. If just 2% of those homes were redeveloped as quadriplexes, that would result in an average of 212 new lower cost housing opportunities (again, compared to the alternative) per year County-wide. Though this isn’t a “game-changer” within the broader market dynamics, it would represent a meaningful increase in supply. Strong policy design could magnify that impact. For example, missing middle housing could be enabled through an inclusionary policy. For example, duplexes could be allowed “by-right” but quadriplexes are allowed if one unit is a committed affordable unit (CAF) targeted toward households at or below 80% AMI. If half of the missing middle developments (again assuming 2% redevelopment) opted for the quadriplex option, it would result in a total of 160 new units per year,

approximately 25 of which would be 80% AMI CAFs annually. For reference, [a cumulative total of fourteen 80% AMI ownership CAFs were produced from 2016-2019.](#)

Policy details matter, and these “back of the envelope” numbers should not be considered predictive of what would happen. One can envision scenarios where policy details lead to more impact and others that lead to considerably less. The point is that it is possible to envision scenarios where missing middle housing reforms can have a modest but meaningful impact. These incremental changes are particularly important when you consider the broader need for housing across the region. Even with the region’s wealth, the DC metro area has elevated levels of housing cost burdens and a particularly low inventory of relatively attainable ownership units.

	Median for all Index metros	Washington-Arlington-Alexandria, DC-VA-MD-WV
Overall Affordability		
Percent of households earning between \$35–\$50,000/year that are severely cost burdened	6.15%	27.93%
Percent of households earning between \$50–\$75,000/year that are severely cost burdened	2.04%	9.37%
Homeownership Attainability		
Percent of all homes likely affordable to a 4-person family earning 80% AMI	37.26%	10.55%
Percent of all homes likely affordable to a 4-person family earning 120% AMI	60.21%	47.31%
Gap in homeownership rate: White – Black/African American households (percentage points)	32.81%	21.47%
Gap in homeownership rate: White – Hispanic households (percentage points)	24.57%	23.36%
Rental Attainability		
Affordable and available rental units per 100 HH at 30% of AMI	32.20	27.60
Affordable and available rental units per 100 HH at 80% of AMI	98.42	98.17
Neighborhood Opportunity & Access		
Metro AllTransit Score	2.90	5.50
Percent of workers with commute longer than 1 hour	5.53%	5.87%
Brookings Metro Monitor Racial Inclusion Score	0.52	0.98
Brookings Metro Monitor Geographic Inclusion Score	0.52	0.13
Theil Residential Racial Segregation Index	0.34	0.32
Income segregation: percentage of households in "middle-income" neighborhoods	69.09%	68.93%

Source: 2021 Home Attainability Index; Urban Land Institute Terwilliger Center for Housing

[Data from the Urban Institute](#) shows that tightness in the ownership market is being driven in part by substantial household growth in upper income categories.

Household growth in middle income categories lags in Washington, DC region; 2000-2016

	All Households	Renters	Owners
\$150,000 or more	34.40%	59.40%	30.30%
\$100,000-149,999	19.10%	57.70%	5.70%
\$75,000-99,999	-4.10%	7.60%	-12.40%
\$50,000-\$74,999	4.00%	8.00%	-0.10%
Under \$50,000	17.50%	14.10%	24.80%

Source: Urban Institute

As high-end demand increases, it has impacts on the rental market as well. For those renters with the means and interest in owning, inventory is limited. In 2017, [the Harvard Joint Center for Housing Studies found](#) that barely half of the region’s ownership inventory is affordable to higher-income renters. The result is that private market landlords cater to those higher-income tenants, which contributes to the repositioning of older rental properties and the loss of more affordable units.

Regionally, renters struggle to enter the homeownership market

Household Category	Washington, DC region: % of homes affordable
Lower-income renter households (25 th percentile)	3%
Median-income renter households	18%
Higher-income renter households (75 th percentile)	52%

Affordability challenges are partially, though not wholly, attributable to supply constraints. The literature on supply is always evolving, but the fundamental takeaway is that in areas where the population is growing, supply matters. New supply alone cannot solve every affordability challenge.

However, if you don’t add housing for a growing population, the problem gets worse. **And that’s because people need to live somewhere.**

Limiting development doesn’t make those new households disappear. A more effective approach is to balance supply with targeted, complementary policies to address deeper housing challenges. – such as affordable housing preservation and rental assistance.

The impact of supply growth depends on market strength, the level of analysis (such as the region, jurisdiction, and neighborhood), and population being considered (for example, median income vs. very low-income households);

- In areas with growing populations, increases in the **region’s housing supply** are necessary to improve affordability for moderate income households;
- However, increased supply alone is insufficient to address the housing needs of lower-income households. Supply growth may lead to cost increases at the **neighborhood level** that may have a negative impact on lower-income renters in particular.
- Complementary policies to address disparate impacts: right of first refusal policy, acquisition/preservation, tenant protections, rental assistance

More details on empirical literature: *Building Northern Virginia’s Future: Research Justifications*; *Northern Virginia Affordable Housing Alliance*

Where does missing middle fit into this? It depends on neighborhood context and policy detail. However, it's important to look at where developers are able to build. At a high-level, if you prioritize significant new market-rate supply in areas where there are lots of low-income renters (which is our current paradigm), you concentrate the impacts of that growth – both positive and negative – in those areas. **Allowing more growth over a broader area distributes demand more effectively and decreases the likelihood of concentrated impacts.**

If we accept the premise that people need to live somewhere, we need to allow new supply. But where?

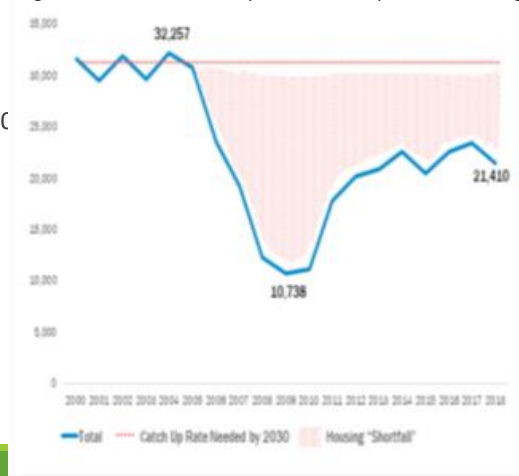
Addressing the Regional Housing Shortfall

Council of Governments Approved Targets;
(Sept. 2019)

1. Region needs 320,000 housing units in next 10 years...75k more than planned
2. At least 75% of all new housing should be in Activity Centers or near high capacity transit
3. At least 75% of new housing should be affordable to low and middle income households

Source: Metropolitan Washington Council of Governments

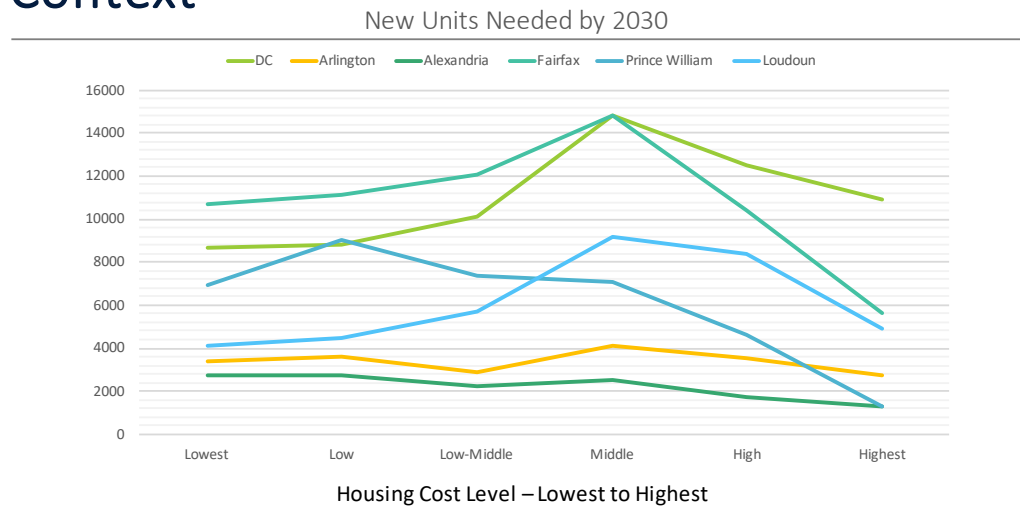
Housing Construction Permits by Year in Metropolitan Washington



The Metro Washington Council of Governments (MWCOC) coordinates transportation and urban planning efforts across the region, *with an eye toward infrastructure capacity constraints and the fiscal ability to manage this capacity.*

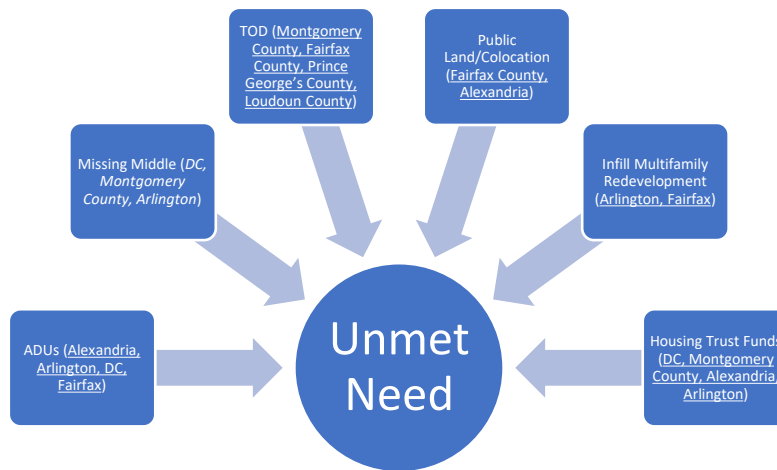
MWCOG has identified a trend of significant underbuilding in recent years contributing to a considerable housing shortfall. To address housing needs, our current development paradigm doesn't cut it. Even if we build what the regions' jurisdictions have planned for, we will still fall 75,000 units short. To meet housing demand, there needs to be considerable supply growth in all jurisdictions at all price points.

Housing Needed to Fill the Gap and Regional Context



Source: Urban Institute; Prince William includes Manassas and Manassas Park
https://www.urban.org/sites/default/files/publication/1100946/meeting_the_washington_regions_future_housing_needs.pdf

In terms of policymaking to accomplish these regional goals, Arlington by no means stands alone. In some policy areas, it has led with ambitious policy. In others, it has lagged behind. Specific to missing middle, leadership is still needed. Montgomery County is perhaps furthest along, having completed a study and adopted some minor policies tweaks. They are actively considering more ambitious legislation this year.



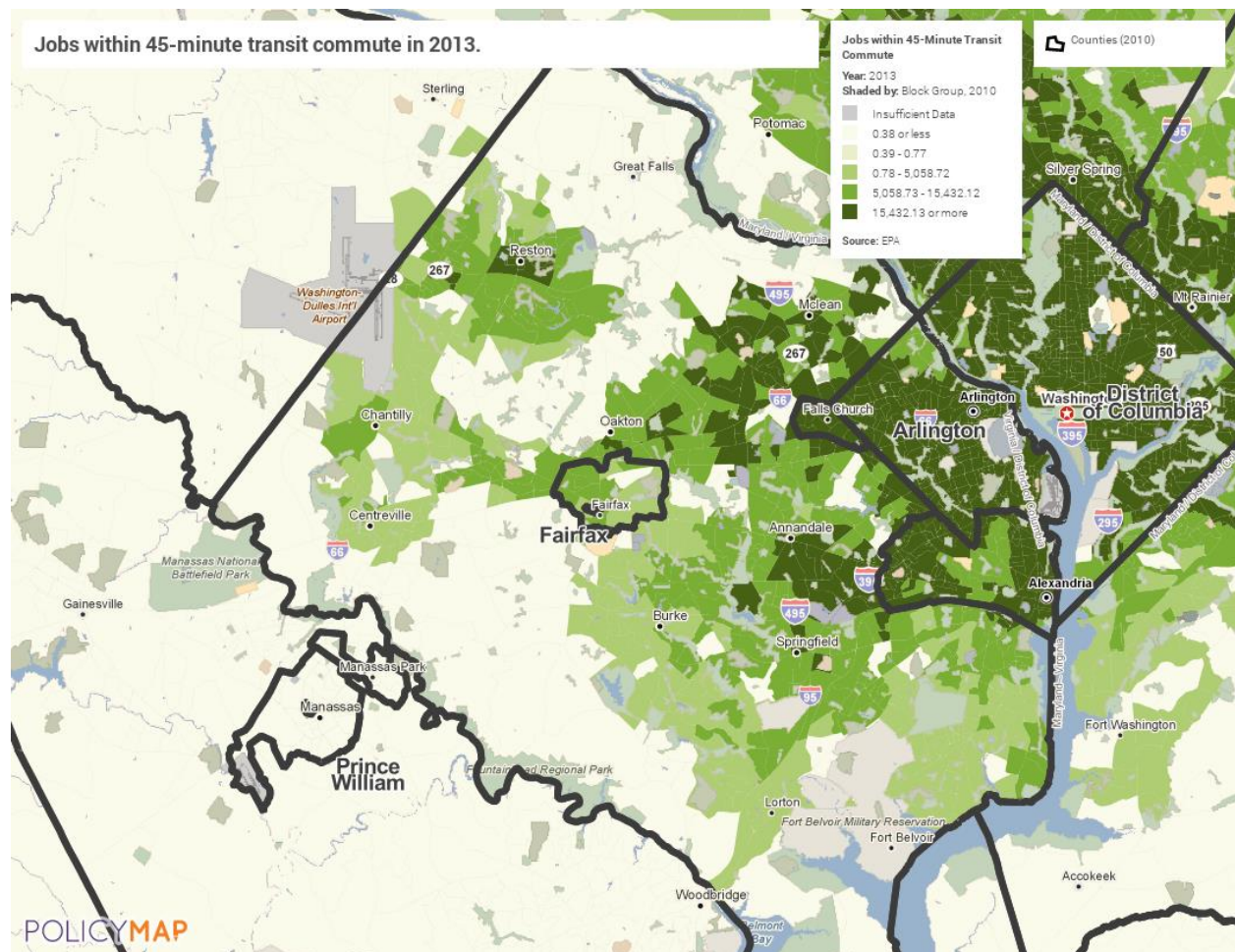
Underline – existing/new policies; Italics – changes under consideration

If we don't want to contribute to economically and environmentally unsustainable infrastructure sprawl, we need to concentrate new housing in what are defined as existing "Activity Centers" or near high-capacity transit.

This brings us to the case for Arlington's leadership. This post will focus on three interrelated topics – transportation system efficiency, affordability, and the environment.

Arlington has comparably strong job access and transit service

One regional objective is to more effectively use existing infrastructure assets as the region's population grows, reducing the need for and cost of system expansion. As such, it makes sense to facilitate growth in areas with jobs and strong transit access.

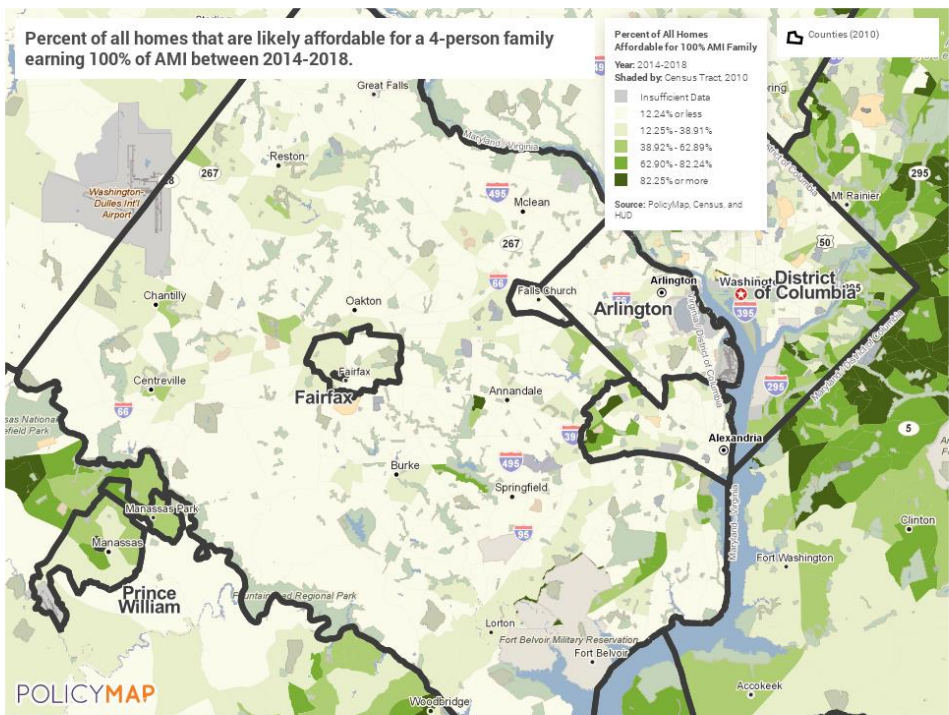


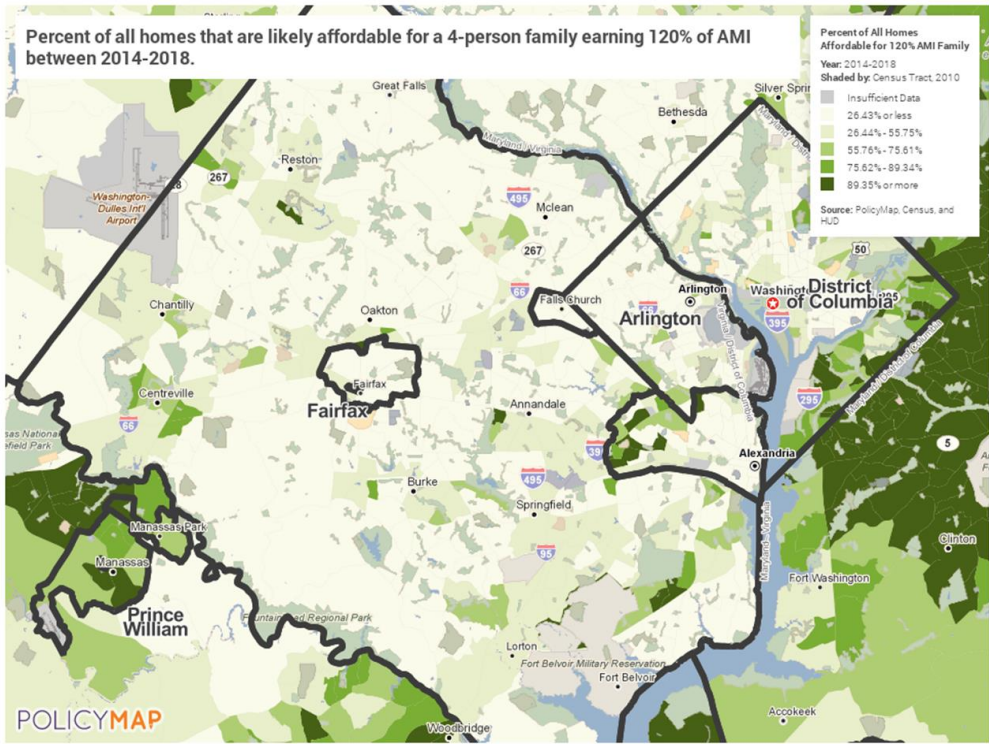
The green areas on the map indicate the areas with the highest number of jobs within a 45 minute transit commute. You see that Arlington is one of several areas primed for location-efficient growth. Building housing where jobs, transit, and other multimodal services exist is the best approach to addressing the infrastructure needs of residents and commuters.

However, what if workers can't afford to live in the areas with the best access?

A lack of affordability creates access challenges, increases demand for infrastructure

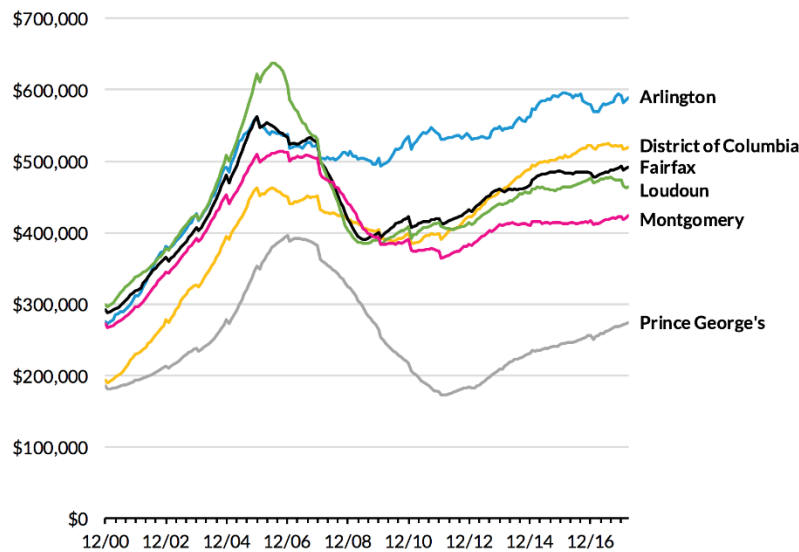
The green areas of these maps indicate areas with a higher proportion of affordable ownership units. You can note that there is minimal overlap with the map of jobs accessible by transit (these maps focus on ownership, but the same pattern geographic pattern holds for renters).





This isn't surprising, as Arlington has some of the highest median home sales prices in the region.

Median Sales Prices of Inner-Region Jurisdictions



Source: Urban Institute analysis of data from CoreLogic Market Trends.
 Notes: Prices are for single-family home sales only. Median sales price is calculated as a 12-month moving average. Prices are adjusted for inflation annually.

To put the need for housing into further context, I compared the average sales prices in Arlington to occupational wages using data from the National Housing Conference’s Paycheck-to-Paycheck database. The result is not pretty. None of the households in the sample could afford monthly payments for any ownership type. The top-earning dual-income household would need to earn almost \$300,000 more per year to afford a single family detached home.

Other housing types aren’t technically affordable either, but the gap is low enough that one can at least envision a potential path to success for some households (or structure policy/subsidy programs to bridge at least some of the gap).

Critical occupations cannot afford to purchase in Arlington

Occupations	Washington-Arlington-Alexandria MSA	"Affordable" Purchase Price	Can household purchase in Arlington?*		
			Single-Family Detached	Single-Family Attached	Condominium
Arlington County median family income (2015-2019 ACS)	\$160,810	\$562,835	(254,949)	5,587	26,995
Regional median family income (2015-2019 ACS)	\$123,249	\$431,372	(292,510)	(31,974)	(10,566)
2-income HH (geriatric nurse, cardiac technician)	\$124,988	\$437,458	(290,771)	(30,235)	(8,827)
2-income HH (child care worker, teacher)	\$97,271	\$340,449	(318,488)	(57,952)	(36,544)
2-income HH (health aid, truck driver)	\$76,322	\$267,127	(339,437)	(78,901)	(57,493)
Geriatric nurse (RN)	\$75,582	\$264,537	(340,177)	(79,641)	(58,233)
2-income HH (retail salesperson, janitor)	\$64,191	\$224,669	(351,568)	(91,032)	(69,624)
Public school teacher	\$62,169	\$217,592	(353,590)	(93,054)	(71,646)
Auto mechanic	\$53,769	\$188,192	(361,990)	(101,454)	(80,046)
Cardiac technician	\$49,406	\$172,921	(366,353)	(105,817)	(84,409)
Long-haul truck driver	\$48,695	\$170,433	(367,064)	(106,528)	(85,120)
Delivery truck driver	\$43,626	\$152,691	(372,133)	(111,597)	(90,189)
Stock mover	\$35,117	\$122,910	(380,642)	(120,106)	(98,698)
Child care worker	\$35,102	\$122,857	(380,657)	(120,121)	(98,713)
Security guard	\$34,310	\$120,085	(381,449)	(120,913)	(99,505)
Nursing aide	\$32,965	\$115,378	(382,794)	(122,258)	(100,850)
Home health aid	\$32,696	\$114,436	(383,063)	(122,527)	(101,119)
Janitor	\$32,176	\$112,616	(383,583)	(123,047)	(101,639)
Retail salesperson	\$32,015	\$112,053	(383,744)	(123,208)	(101,800)
Waitress	\$30,206	\$105,721	(385,553)	(125,017)	(103,609)
Housekeeper	\$27,739	\$97,087	(388,020)	(127,484)	(106,076)

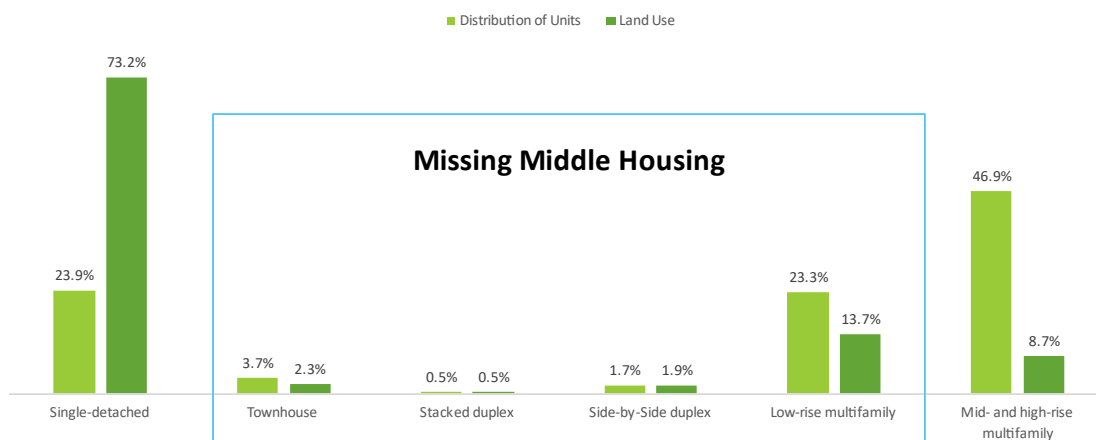
Occupational income source: NHC Paycheck-to-Paycheck Database
 *Housing cost estimate source: Inside Nova; data on average Arlington sales price in 2020

Average 2019 Sales Price:
 SF Detached: \$1.45 M
 SF Attached: \$534 K
 Condo: \$468 K

These high barriers to entry can have a disparate impact on minority households, who have faced substantial historical barriers to homeownership, such as redlining, and as a result are less able to tap into family assets or intergenerational wealth to assist in purchasing a home.

The most affordable typologies are rare in Arlington. Zoning contributes to this imbalance, as the vast majority of residential land in the County is zoned for Single-Family Detached.

Housing types in Arlington by representation and land use



Source: Arlington County Missing Middle Housing Study Research Compendium

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Our current land use paradigm both limits the number and type of housing units, often concentrating negative impacts on low-income renters. To illustrate, the combination of unmet demand for townhomes and the limited areas where such units could be built, contributed to townhome development activity in multifamily zones instead (for example, in the Westover neighborhood), with several naturally occurring affordable garden style rental buildings demolished and replaced with fewer, more costly units.

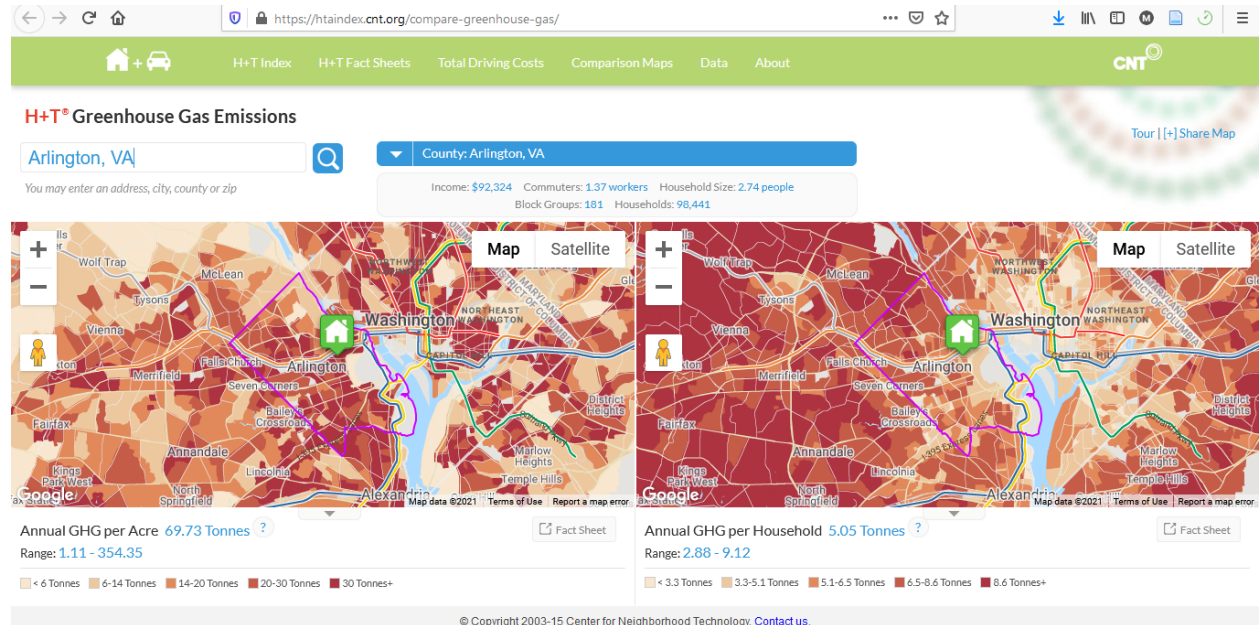
A lack of housing in close-in locations contributes to the “drive til you qualify” effect of new growth in less accessible outlying parts of the region. This increases the demand for costly new infrastructure (i.e., highway widening, transit expansion, etc.) to better connect people to jobs and services. It is for this reason that MWCOG focuses on growth in Activity Centers, since federally-mandated infrastructure plans must consider fiscal constraints, and such growth reduces fiscal impact for the region as a whole. Furthermore, it should be noted that demand for transportation infrastructure beyond Arlington’s borders will likely contribute to increased commuting traffic within our borders (and calls to widen major highways such as I-66). To be fair, not all Arlington residents (existing or new) are car-free, and new development generally leads to at least some more cars on the road, even if the impact is often wildly overstated. However, unlike those commuters who are only passing through on their way to and from the District, those that live here are also more likely to use Arlington-based retail establishments and restaurants, pay local taxes, and otherwise contribute to the local tax base. [Research suggests that denser, urban development is a fiscal net-positive](#), and experiences and research in other jurisdictions has shown that restricting new development has had detrimental impacts on [municipal finances and the ability to provide supportive infrastructure in Montgomery](#) and Howard Counties in Maryland.

Building in Arlington mitigates environmental harms

“Driving til you qualify” and the sprawling housing demand it creates has environmental consequences. New research suggests that denser housing [“can unlock a large potential for reducing residential energy](#)

[demand and GHG emissions in the coming decades](#)". A recent brief from the Brookings Institution stated that ["car-dependent neighborhoods restrict multiple climate goals, including GHG targets."](#)

Unfortunately, debates about the environmental impact of development conflate the "micro" level impacts with the broader "macro" level effects.



Specific to Arlington, the map on the left above shows greenhouse gas emissions per acre, which are higher in Arlington. One response might be to limit development in Arlington, since each incremental person would contribute to Arlington's emissions.

However, just as Arlington cannot solve the regional housing shortage on its own, it cannot solve climate change or air pollution on its own.

Again, people need to live somewhere.

The map on the right shows per household emissions. If we fail to build more in Arlington, people will go elsewhere, and given that the region's average per household emissions are more than 3 tons higher than Arlington's, there is a strong likelihood that the opportunity cost is higher total emissions for the region.

Regional Emissions: Average GHG per Household

Washington metropolitan region (CBSA): – 8.14 tons

Arlington County: 5.05 tons

(Source: [Center for Neighborhood Technology's H+T Greenhouse Gas Emissions site](#))

Expanding beyond emissions, over the last 15 years, we've seen larger aggregate and percentage changes in land cover in outer Counties than we have in Arlington.

Developing outside of Arlington impacts the broader environment

		Arlington County	Fairfax County	Loudoun County	Prince William County
2016 Status	Total Land Area	26.12	406.49	521.33	347.67
	% Developed	89.51%	55.33%	22.41%	31.89%
	Developed Area (square miles)	23.38	224.91	116.83	110.87
	% Impervious	31.91%	15.19%	6.50%	8.81%
	Impervious area (square miles)	8.33	61.75	33.89	30.63
	% Forest	8.89%	34.68%	34.00%	41.48%
	Forested area (square miles)	2.32	140.97	177.25	144.21
	% Wetlands	0.17%	3.96%	1.41%	6.71%
	Wetlands (square miles)	0.04	16.10	7.35	23.33
Change: 2001-2016	Percent of land area change (net)	2.54%	4.41%	8.91%	10.39%
	Land area change (sq. miles)	0.66	17.93	46.45	36.12
	Impervious surface change (sq. miles)	0.25	5.36	11.81	8.98
	Forest (sq. miles)	-0.13	-7.41	-11.88	-17.33
	Wetland (sq. miles)	0	0.21	0.27	1.34

www.mrlc.gov/data

There has been a considerable increase in impervious surface (in terms of square miles) in other Northern Virginia counties, some of which are upstream of Arlington, which has a direct impact on the County's stormwater and flooding issues. There has also been considerable lost forested area in those same counties compared to Arlington.

To be fair, these counties are orders of magnitude larger and in a different stage of development, so the comparison isn't truly apples-to-apples. However, the aggregate impact of restricting development in the urbanized core is often more environmentally damaging outlying development, which still impacts Arlington's thru-traffic, flooding, and air quality issues.

The Path Forward

To-date, there is no specific "missing middle" policy that Arlington is locked into. If the County decides to act, we have the opportunity to learn from what we've seen in some other jurisdictions across the country, while having a fairly blank slate to address Arlington-specific concerns.

Considerations for developing a vision for Missing Middle Housing in Arlington

- **Optimizing transportation infrastructure**
 - Maximizing flexibility near frequent transit
 - Improving bus service and frequency
 - "Right sizing" parking requirements, encouraging shared parking, and improving street parking management
- **Improving equity and affordability**
 - Support existing low-income owners
 - Provide density bonuses for including committed affordable units (see: Portland Residential Infill Project)
 - Incentivize types conducive to accessible housing and aging-in-place (i.e., cottage clusters)
- **Protecting the environment**
 - Update stormwater retention and energy codes
 - Examine interplay between height, setback, lot coverage, and parking requirements w/regard to stormwater runoff, tree preservation
 - Allow for "transfers of development rights" for tree preservation/parkland dedication

If we're concerned about traffic, we can leverage this infill development to improve bus service.

If we want to prioritize equity and affordability, we can adopt an inclusionary policy that creates committed affordable units in exchange for density, and focus on missing middle types that better serve persons with disabilities.

As for the environment, the options range from upgraded energy and stormwater retention codes to forward thinking policies that proactively encourage public open space preservation.

Arlington should expand opportunity, not foreclose it for future generations

I have lived in Arlington for more than 10 years. My wife spent much of her childhood and most of her adult life here. We bought a single-family detached home 9 years ago in Columbia Forest and are raising our two children here.

We are lucky. We had some family support, and we bought just in time. If we were in the same relative financial position as we were in 2012 and looking to buy in Columbia Forest now, I doubt we could afford it given both appreciation and the reduction in entry-level inventory due to the teardown trend. Even with status quo policy, the neighborhood is changing – in terms of building size and aesthetics and socioeconomic composition. I worry that these trends will lead to our neighborhood becoming more out of reach for lower- and middle-income households with each turnover of an existing home.

But my neighborhood also gives me hope for what the future in Arlington could bring. Our neighborhood is relatively socioeconomically diverse (for Arlington), which is partially attributable to the diversity of the housing stock. Our block doesn't allow missing middle, but we happen to be close to the border of other zoning classifications. There are family-sized townhomes one block to the south that are somewhat more affordable than the single-family homes. While these are likely still out-of-reach for many, they are not at risk of the teardown/McMansion trend that pushes prices to a point that only the wealthiest can afford. There are duplexes a few blocks north that are also comparatively affordable. Closer to Columbia Pike, there are modest garden style rentals and rental apartments featuring a substantial number of CAFs, and the neighborhood also includes several condo buildings that offer considerably more attainable ownership units. Most (if not all) of the single-family homes, duplexes, and townhomes have a yard and/or patio. Many have fences and a lot of privacy and there are plenty of trees (and many of us are planting more).

I say all of this to illustrate that thriving, gentle density is possible, and Columbia Forest is a case study. If one or two houses on each block are redeveloped as triplexes, I suspect many people wouldn't even notice from an aesthetics perspective. It would certainly not be substantially different than most current tear-down/expansion projects. But we would have a few more neighbors that would have access to the same opportunities and amenities that we benefit from, and our children might have a few new friends to play with. These are great things.

As the missing middle conversation continues, we will (hopefully) begin to talk more about policy specifics. That conversation is important because we want to get this right and reduce unintended consequences. But I don't want to lose sight of the fact that this is fundamentally about people and expanding, rather than hoarding, the opportunities that many of us in this County have been lucky to experience.

