A Boon for Network Deployers: MDU Construction Reaches New Heights

Private construction of multiple-dwelling-unit apartments is hitting a new record this year, with about 424,000 units expected.

By Steven S. Ross / *Broadband Communities*

Powered by market demand among young professionals and empty nesters, construction of multiple-dwelling-unit (MDU) apartments by non-government builders continued to set records this year, with about 424,000 new units expected to start in 2019. The surge, about 30,000 over 2018, is due in part to fewer young families able to qualify for mortgages. But new construction techniques – in particular, nationwide adoption of wood-framed, sprinklered construction for MDUs – has played an important role as well. The new buildings go up faster, and at a cost per square foot of typically only 65 percent of older concrete- or steel-framed construction.

National building codes limit the new construction to five inhabited floors, which may or may not be placed on top of parking garages or commercial space. Although the bulk of the new construction is aimed at the current rental market, construction quality and design features often anticipate eventual conversion to condominiums. Even in MDUs meant for the college dorm market, typical units have one or two bedrooms. Configurations of the buildings range from simple blocks to U-shaped and T-shaped. Façade treatments, balconies and parking vary widely by region and even by building lot in the same city.

The construction growth is quite stable. More than 300,000 new, privately developed apartments (in more than 10,000 buildings) have been started in the United States each year since 2014. All this offers extra opportunities for broadband deployers, especially smaller deployers seeking to exploit the lower per-apartment deployment costs for MDUs.

The bounty is widespread. Though more than half of all new MDUs are being built in the South, 297 metropolitan statistical areas (MSAs) – or almost three-quarters of all MSAs across the country – saw construction permitting of at least one MDU with at least five units. There were 67 MSAs with more than 1,000 new MDUs authorized in 2018. The biggest gains are noted in the table on p. 45, but all 297 MSAs with MDU construction are listed in the digital edition of **Broadband Communities**.

Local-government construction permits were issued in 2018 for 420,864 units in 13,976 separate buildings – an average of 30 units per MDU. The data on housing starts and permitting comes from the U.S. Census Bureau.

The Bureau does not report detailed data at the city level for housing starts but does report them for permits issued (see tables). It also reports regional data less completely than it does national data.

These new MDUs are indeed all getting broadband networks and for good reason. As researcher Michael Render of RVA LLC consistently reports in his market surveys, broadband is the most sought-after amenity among renters and prospective buyers. However, about half of new MDUs are still built with copper broadband infrastructure rather than far more robust fiber-based systems that take up less building space for equipment rooms and risers, and usually cost less to deploy.

Render reports that a very high percentage of residents – about 60 percent – occasionally work from home, but it is unclear from census data how many households or dwelling units are occupied by residents working *only* from home. Do both members of a household tend to work at home? Only one? Is the pattern different for couples than for young workers sharing living space to split the rent? Is the "gig" (job, not bandwidth) part-time or full-time?

Render also says a fifth of all families run a business from home – up from just 9 percent in 2010 (12 percent of residents with fiber connections that year). Is the home business a small added income or a major part of family income?

The best advice is for MDU owners and managers to survey the needs of their tenants and prospective tenants. What is absolutely clear is that home-based workers need fast, reliable, symmetrical broadband.

NEW PRODUCTS FOR MDU DEPLOYMENTS

Vendors now offer new products to make MDU fiber deployments ever-cheaper to implement. The fiber itself

DATA UNCERTAINTIES

Large builders and deployers are well aware that national and regional real estate trends are not usually mirrored exactly in local markets. They also are aware that local radio, TV and newspapers tend to report only aggregate national numbers for all housing starts. Right now, the aggregate number is more than 1.4 million housing starts a year. More than two of every three new units are single-family homes, and much of that is to replace old housing that has fallen into disrepair or is in locations where populations are declining.

The data are collected by private contractors hired by the U.S. Census Bureau. But there are 40,000 communities in the United States, and not all of them require construction permits. So the Census Bureau inflates the numbers it collects by 3.3 percent in its national reports.

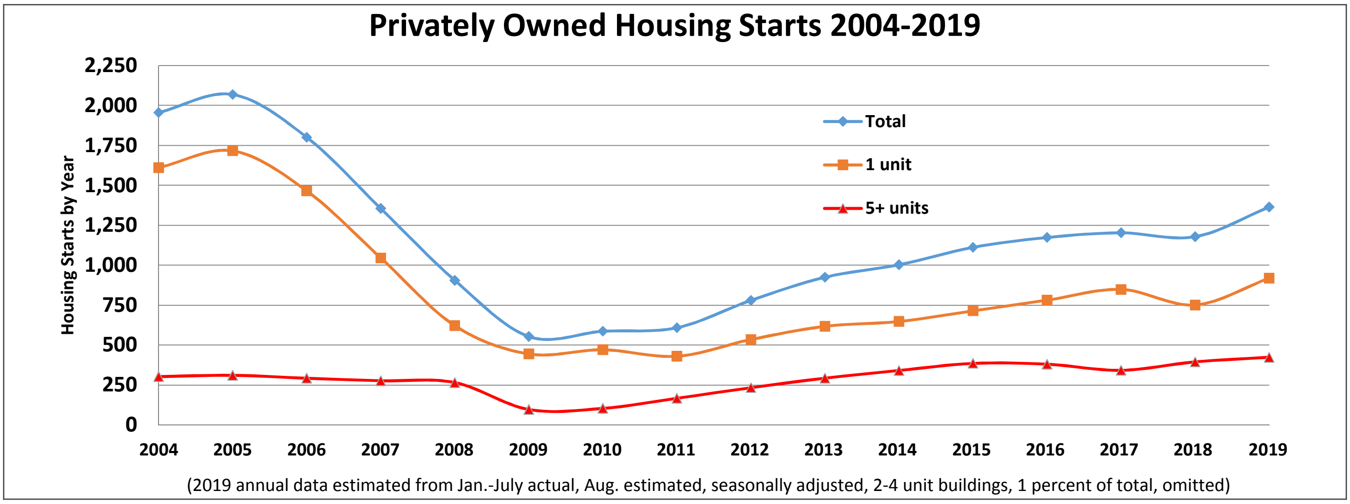
In many states, large developments are built outside city or town borders in unincorporated areas and then folded into those communities once construction is finished. Thus, although nationally the number of units completed tends to be about 7 percent below the number started, the number of dwelling units completed is sometimes larger in a given location. That has not been the case for the past few years, however. In addition, MDU completions have tended to be successful at a higher rate in the past few years – closer to a 3 or 4 percent drop from starts. That is due in part to the lower cost and faster construction cycle of prefabricated, wood-framed MDUs.

For clarity, the charts do not include the small number of housing units in buildings with two, three or four apartments – 10,000 to 12,000 units a year for the past decade. There ended up being 421,000 five-plus unit MDUs permitted (usually with a building permit but sometimes with just financing in place) in 2018, but monthly data projections showed significantly higher and lower permitting rates. Weather and local seasonal patterns tend to account for much of this variation. The 2017 data, for instance, totaled 343,000, revised down from 352,000. We predicted an average annual rate of MDU starts in 2018 at 395,000, and we underestimated by only 1,500 units. The 2018 MDU start rate was up 13 percent from 2017. Our prediction for 2019 is almost 8 percent above 2018.

There are also regional variations, and those are reported about a year late by the Census Bureau. The Bureau does not break out number of units in very small MDUs – those of four or fewer units – in the regional data, but it does in the MSA-level data.

MDUs, as one might expect, tend to be small in rural areas, but in rural population centers of fewer than 50,000 people, garden and dwelling-above-store apartments are not uncommon and are easy to service with broadband, as long as the community itself is well connected to the outside world. MDUs that are non-residential – hotels, hospitals and dormitories – are more common in the South, as are retirement communities in rural areas, even though rural populations have declined more in the South than elsewhere since 2010. The South has more counties where retirement or vacation housing is dominant than any other region.

Small regional and local broadband carriers move quickly to take advantage of opportunities presented by new residential construction. Local carriers do not usually need the census to tell them what is going on in their own communities. To take advantage of local opportunities, national property owners and managers need to strengthen connections to local carriers.



Most new living units are still in single-family homes. But the gap between single-family and multifamily (MDU) construction has narrowed greatly since 2005, when single-family housing peaked. The number of new living units in MDUs surpassed pre-recession levels in 2014, setting new records in all but one year (2017) since then. The charted data excludes government-funded housing; little has been built since 1981 and it accounts for only 1 percent of all occupied housing units. Most new MDU dwelling units are in buildings of 20 units or more; the 2019 average is 30, down from 34 in 2018 as wood-framed MDUs become more common. In this chart, the roughly 12,000 annual construction totals for MDUs of two, three, or four units is omitted to keep 2018 data compatible with earlier years.

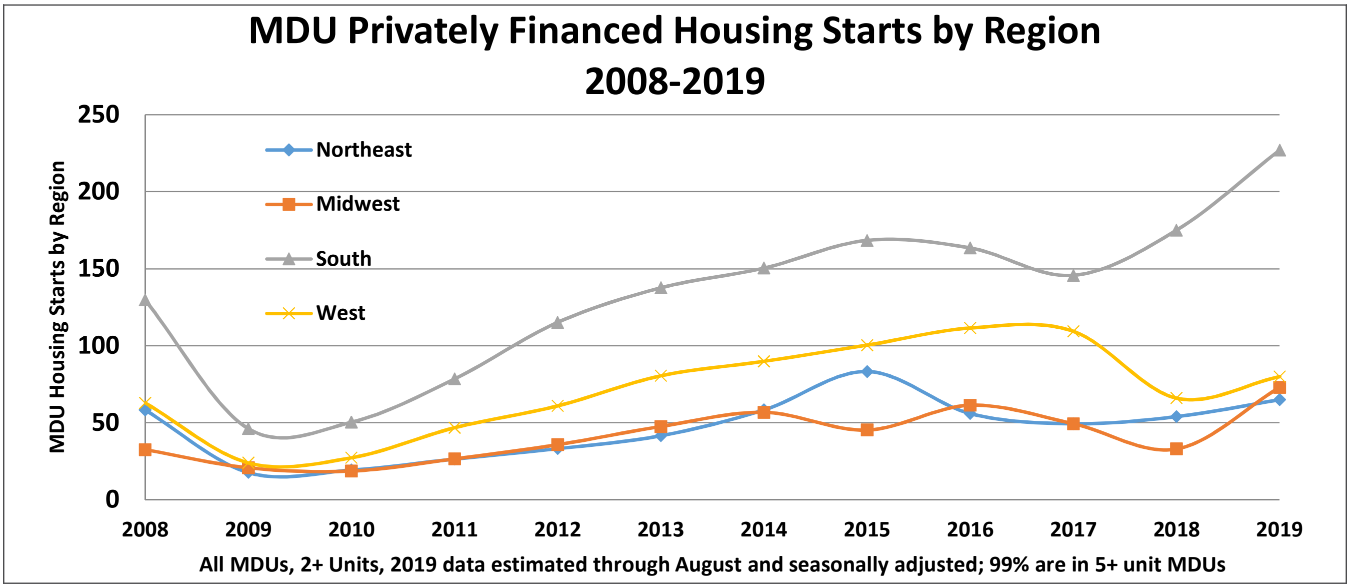
is now thinner and more flexible. Connections rarely require fusion splicing, so deployments are faster and require less skilled labor. Workers can pull fiber inside and simply strip off the weather shielding.

Hubs are smaller, making fiber easier to deploy and maintain with standardized trays and simple but effective gaskets that allow easier maintenance.

Many deployments now combine copper (often in the form of Cat 5 cable) with various broadband technologies. They include wireless, G.fast, satellite, DOCSIS 3.1 and true, all-fiber, passive optical networks terminating at the property line, attic or basement.

THE RENTAL TRAP

The national percentage of owner-occupied dwelling units has fallen from its peak of nearly 70 percent in 2008 to 63 percent today. Nevertheless, single-family housing starts are rising even faster than MDU starts. Mortgage interest rates are near historic lows. But young, first-time buyers and those



Regional variations in annual MDU construction. In this chart, MDUs of all sizes are aggregated; the Census Bureau does not fully report MDU data by size in this data series. Note that most MDU growth has been in the South and West since the recession started in 2008.

who lost their homes to foreclosure or short sales in the recession still have great difficulty finding mortgage lenders. This pushes demand for rental housing, so rental costs are rising faster than income. As a result, the number of people who share apartments and houses has increased – complicating marketing for network deployers, but increasing the demand for broadband services in any one apartment.

Deployers may wish to take some credit risks, however, as many young tenants buy only internet broadband – a high-margin sale for deployers. Because the profit margin for old-style linear video content is so low and deployers would lose money on video service if residents default on their payments, the new reality of over-the-top content often looks attractive in modern MDU settings.

There has been an increase in the number of households offered bulk services through building owners and managers. That is, broadband costs are treated as part of the rent rather than billed as a separate fee. This saves residents money, cuts deployer operating costs, and puts building owners on the hook for the fees. But some owners and managers worry about adding bulk fees to rents that are already rising.

Bulk reduces tenant broadband choice and induces many to take only the bulk package, with no extras. Instead, residents – especially younger residents – buy their content directly through over-the-top services from Amazon, Netflix, Apple and a constellation of other providers.

That in turn requires buildings or broadband deployers to spend on good wireless infrastructure – Wi-Fi and cellular.

Tenant churn creates a hidden cost for MDU deployers. Unrelated people renting an apartment together are particularly unstable tenant groups even when each individual tenant has a good income. As tenants move in and out of apartments and swap housing partners, the actual monthly broadband revenue earned by deployers tends to stay close to the lower, promotional price.

No longer can deployers depend on higher revenues from tenants who have completed promotional terms, because fewer of them do. What's the penalty? From 12 to 30 percent of "full price" revenue – and the 12 percent revenue loss, typical for short promo periods of three to six months, can eat all of the profit. BROADBAND COMMUNITIES offers free monthly cash flow models to help you do your own calculation. Look for Monthly Revenues (Tool 4) or Monthly Cash Flow (Tool 5) at FTTHAnalyzer.com to download cash flow models and instructions for using or modifying them.

Expect the bias toward rentals to continue for several more years, even though interest rates remain low and seem to be falling worldwide, including in the United States. The Federal Reserve Bank (FRB) started to reduce the money supply five years ago by reducing its balance sheet, but has stopped. When the recession started in 2008, the FRB had about $800 billion in assets. That figure grew sixfold to about $4.5 trillion as the FRB bought up lower-quality assets (mainly bonds) – a process called "quantitative easing." The money it spent went into circulation, but the assets it carried on its books could also be borrowed against by other banks. Today, the balance sheet is still almost $4 trillion. But each dollar gets spent only about 1.4 times in a year – the lowest level since the 1930s.

All this puts smaller local banks in a quandary. If they can't raise interest rates beyond what the FRB posts, they will tend to avoid lending long-term either to individuals or to capital-intensive businesses. And no businesses are more dependent on 15- to 20-year financing than network deployers.

The scarcity of long-term capital has enticed MDU developers – who typically finance with interest-only loans that are rolled over every five

Metropolitan Statistical Area, Ranked by Number of New Privately-Funded MDU Housing Units Permitted, 2018	Total	1 Unit	2 Units	3-4 Units	5+ Units	5+ Units, Structures	Average MDU Units/ Structure
New York-Newark-Jersey City, NJ-NY	49,692	11,077	1,682	1,061	35,872	1,120	32
Dallas-Fort Worth-Arlington, TX	63,893	36,832	354	484	26,223	617	43
Seattle-Tacoma-Bellevue, WA	28,186	9,134	632	824	17,596	388	45
Los Angeles-Long Beach-Anaheim, CA	29,524	10,042	1,528	522	17,432	506	34
Houston-The Woodlands-Sugar Land, TX	57,288	40,321	254	106	16,607	410	41
San Francisco-Oakland-Hayward, CA	17,421	4,048	154	259	12,960	219	59
Austin-Round Rock, TX	30,035	17,030	100	65	12,840	371	35
Atlanta-Sandy Springs-Roswell, GA	39,441	26,506	98	87	12,750	253	50
Orlando-Kissimmee-Sanford, FL	28,882	16,455	246	59	12,122	309	39
Washington-Arlington-Alexandria, DC-VA	25,757	13,588	94	38	12,037	187	64

Residential permits issued in 2018 in 10 MSAs. These are all MSAs with permits for at least 12,000 dwelling units in MDUs of five units or more. See the online version of this article for a longer table showing data for 297 MSAs. Source: U.S. Census Bureau.

years – to finance network builds themselves. Will that continue? And what happens now that the federal deficit has ballooned to almost 25 percent of the federal budget this year?

Does the increased money supply and moderate interest rate make up for the federal government beginning to crowd out local borrowers? There are models to predict the answers to these questions. I have been attending FRB meetings on these subjects in Boston and New York – meetings that usually have Nobel Prize economists at the table. The verdict: The models have never been tested with money swings of this size. This is not comforting.

The general feeling is that a mild recession, not deep (banks are not in danger of collapsing) but long, could begin in late 2020. The federal government has been running such a high deficit in good times that it has little wiggle room to stimulate an economy that may fall. In addition, the rest of the world is facing much the same problem. For deployers, that means caution – and caution means paying greater attention to MDU deployments, where margins are high.

THE FUTURE

Immigration policy is in flux, and net immigration is supposedly falling. Refugee flow gets most of the attention, but while refugee admissions have been cut substantially on a percentage basis, legal immigration other than refugees and asylum-seekers is much larger (more than 1 million a year). The White House announced an annual cap of 30,000 refugees for fiscal 2019, just ended and 18,000 for next year, down substantially from the modern peak year of 108,000 in 2017. It has asked for changes in the broader flow as well. Before the refugee policy change, the Census Bureau estimated that all net population growth in the United States after 2020 would be from net immigration, whatever the level might be. Population growth from 2017 to 2018 was 0.62 percent, the lowest in 80 years. Half of that was from immigration.

Changing the growth outlook would have major implications for housing construction of all kinds. But the impact probably would be greatest for residential MDU demand, and thus construction. There would be fewer construction jobs, fewer opportunities for broadband deployers, and a smaller economy overall. ❖

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A table ranking MDU permits for 297 MSAs is available in the digital edition of this article at **www.bbcmag.com**.

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