MDUs Continue to Outpace Pre-Recession Totals

Construction of multiple-dwelling-unit apartments has surpassed pre-recession levels on a sustained basis. But only about half of new MDUs have fiber broadband.

By Steven S. Ross / *Broadband Communities*

New apartment buildings have always been the sweet spot for broadband network deployments, and that's especially true today. More than 300,000 new, privately developed apartments have been started in the United States each year since 2014. This year is on track for 365,000 to 395,000 starts. That rate for large multiple-dwelling-unit properties (MDUs) far exceeds the pre-recession peak and is well over last year's 347,000, even though construction of single-family homes has not fully recovered from the recession years. All but about 12,000 MDU units per year are in buildings with five or more units.

The Bureau of the Census does not report detailed data at the city level for housing starts but does report them for permits issued (see table on p. 26). For the first seven months of 2018, 34 percent of all housing starts in the roughly 400 metropolitan statistical areas (MSAs) were for housing units in MDU structures that contain at least five units, with an average building size of 34 units. For the 45 MSAs that reported permits for at least 1,000 MDU units, 42 percent were for units in MDUs with at least five units. Average building size was 30 units.

These new MDUs are indeed all getting broadband networks and for good reason. As researcher Michael Render reports in this issue (see p. 18), broadband is the most sought-after amenity among apartment renters and prospective condo buyers. However, at least 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 in the first place.

WHY BUILDERS DON'T USE FIBER

With gigabit internet service becoming the norm and 10 gigabit on the horizon, builders should look beyond their "old, reliable" low-voltage wiring contractors for contractors who can supply the latest technologies. But many builders I talk to say they are not doing so because

- They have copper in older buildings and believe (incorrectly) that in-building staff would have to be massively retrained for fiber.
- They have been told that copper offers more flexibility for multiple providers to share wiring. (This is no longer true; cable companies and telcos now deploy, share and use fiber where they legally can, because fiber uses Ethernet protocols common to all broadband networks.)
- They listen to contractors who are more used to copper and have had trouble bringing new and existing staff up to speed on fiber.
- They worry that fiber cannot be procured quickly (which can be true for citywide builds but generally is not an issue for MDU builds).
- They believe wireless will handle all demand. (Wireless has limitations on how many users can share at a time, and wireless requires fiber connections to the internet.)

DATA UNCERTAINTIES

Large builders and deployers are well aware that local markets do not always – or even usually – exactly mirror national and regional trends. They are also aware that local radio, TV and newspapers tend to report only aggregate national numbers for all housing starts. These days, the aggregate number is about 1.2 million housing starts a year. Two of every three new units are single-family homes, many of which replace old housing that has fallen into disrepair.

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

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 the number of units completed nationally tends to be about 7 percent less than the number started, the number of dwelling units completed can be larger for a given location. That has not been the case for the past few years, however. Overall, 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.

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. The annual rate of five-plus-unit MDUs started in 2017 ranged from 277,000 to 416,000, as stated in the monthly reports. Exceptional weather – good or bad – tends to account for much of this variation. The year ended up with 343,000, revised down from 352,000. The average annual rate of MDU starts this year, 395,000 through July, is up 13 percent from 2017. As noted earlier, the final number could be as low as 365,000 – still a record.

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 units or fewer – in the regional data, but it does in the MSA-level data. The second chart shows how much of the MDU market is driven by regional housing patterns, however.

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 provide broadband for, as long as the community itself is well connected to the outside world. MDUs that are nonresidential – 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.

Indeed, in the aggregate, rural areas have been losing population since 2010. The loss – more than 1 percent of the 42 million living in rural counties that year – produced a surplus of more than 200,000 dwelling units in those counties.

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.

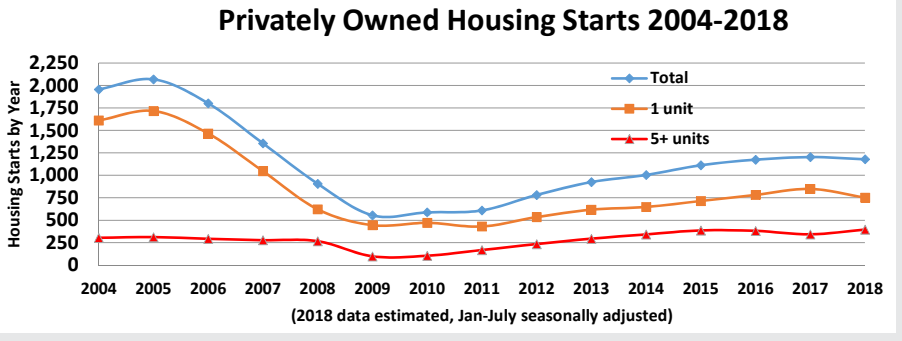

Chart 1: Red line shows construction of MDU buildings with at least five units. Most new units are in buildings of 20 units or more; the average building size this year in MSAs is 34. In this chart, the roughly 12,000 annual construction totals for MDUs of two, three or four units is omitted to keep 2018 data compatible with earlier years.

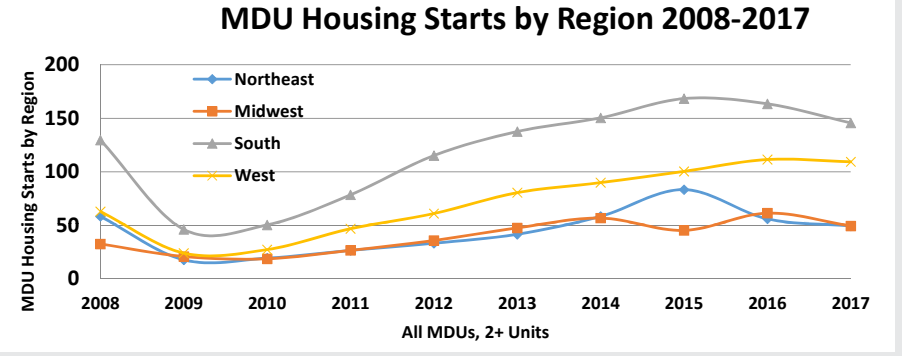

Chart 2: There are significant regional variations in annual MDU construction. Most MDU growth has been in the South and West since the recession started in 2008. In this chart, MDUs of all sizes are aggregated; the Census Bureau does not fully report MDU data by size in this data series.

MDU INDUSTRY ANALYSIS

METROPOLITAN STATISTICAL AREA (RANKED BY NUMBER OF UNITS PERMITTED)	TOTAL	1 UNIT	2 UNITS	3-4 UNITS	5+ UNITS	NUMBER OF STRUCTURES 5+ UNITS OR GREATER	AVERAGE SIZE 5+ STRUCTURES
New York-Newark-Jersey City, NY-NJ-PA	28,391	5,888	932	677	20,894	690	30
Dallas-Fort Worth-Arlington, TX	38,613	21,711	194	360	16,348	369	44
Los Angeles-Long Beach-Anaheim, CA	19,455	6,440	844	340	11,831	329	36
Miami-Fort Lauderdale-West Palm Beach, FL	13,475	4,288	136	131	8,920	189	47
Austin-Round Rock, TX	19,608	10,629	76	17	8,886	285	31
Houston-The Woodlands-Sugar Land, TX	33,723	25,049	154	99	8,421	223	38
Seattle-Tacoma-Bellevue, WA	14,060	5,541	324	429	7,766	201	39
Orlando-Kissimmee-Sanford, FL	17,209	9,805	108	43	7,253	200	36
Atlanta-Sandy Springs-Roswell, GA	22,953	16,211	62	67	6,613	153	43
San Francisco-Oakland-Hayward, CA	9,205	2,507	64	137	6,497	132	49
Phoenix-Mesa-Scottsdale, AZ	19,644	13,747	324	96	5,477	116	47
Washington-Arlington-Alexandria, DC-VA-MD-WV	14,028	8,461	74	38	5,455	102	53
Boston-Cambridge-Newton, MA-NH	8,674	2,844	368	167	5,295	178	30
Charlotte-Concord-Gastonia, NC-SC	14,785	9,489	54	32	5,210	112	47
Minneapolis-St. Paul-Bloomington, MN-WI	10,386	5,197	80	70	5,039	59	85
Denver-Aurora-Lakewood, CO	12,447	7,323	84	102	4,938	145	34
San Diego-Carlsbad, CA	7,340	2,380	94	383	4,483	193	23
Portland-Vancouver-Hillsboro, OR-WA	8,382	4,081	192	50	4,059	116	35
Chicago-Naperville-Elgin, IL-IN-WI	9,475	5,006	164	343	3,962	157	25
Raleigh, NC	10,628	7,125	46	4	3,453	88	39
San Jose-Sunnyvale-Santa Clara, CA	5,006	1,580	16	20	3,390	52	65
Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	7,867	4,020	134	345	3,368	154	22
Nashville-Davidson-Murfreesboro-Franklin, TN	10,057	7,627	8	63	2,359	65	36
Columbus, OH	5,217	2,718	70	107	2,322	115	20
Riverside-San Bernardino-Ontario, CA	9,631	7,078	110	180	2,263	196	12
Jacksonville, FL	8,796	6,587	16	43	2,150	72	30
North Port-Sarasota-Bradenton, FL	5,744	3,808	16	56	1,864	77	24
Tampa-St. Petersburg-Clearwater, FL	10,543	8,617	48	59	1,819	73	25
Baltimore-Columbia-Towson, MD	5,162	3,406	6	-	1,750	21	83
Salt Lake City, UT	5,264	3,346	38	133	1,747	83	21
Durham-Chapel Hill, NC	3,570	2,067	20	-	1,483	31	48
Madison, WI	2,535	959	76	49	1,451	33	44
Las Vegas-Henderson-Paradise, NV	7,656	6,253	54	30	1,319	56	24
Colorado Springs, CO	4,048	2,713	4	24	1,307	54	24
St. Louis, MO-IL	4,628	3,244	46	39	1,299	47	28
Kansas City, MO-KS	5,272	3,560	174	252	1,286	36	36
Lafayette-West Lafayette, IN	1,498	273	-	4	1,221	15	81
Cape Coral-Fort Myers, FL	5,039	3,444	314	80	1,201	46	26
San Antonio-New Braunfels, TX	6,168	4,899	90	13	1,166	100	12
Fayetteville-Springdale-Rogers, AR-MO	3,705	2,441	50	66	1,148	55	21

METROPOLITAN STATISTICAL AREA (RANKED BY NUMBER OF UNITS PERMITTED)	TOTAL	1 UNIT	2 UNITS	3-4 UNITS	5+ UNITS	NUMBER OF STRUCTURES 5+ UNITS OR GREATER	AVERAGE SIZE 5+ STRUCTURES
Milwaukee-Waukesha-West Allis, WI	2,237	1,037	84	3	1,113	30	37
Omaha-Council Bluffs, NE-IA	2,939	1,778	20	32	1,109	26	43
Indianapolis-Carmel-Anderson, IN	5,671	4,478	84	27	1,082	33	33
Louisville-Jefferson County, KY-IN	3,020	1,959	8	30	1,023	45	23
Des Moines-West Des Moines, IA	2,945	1,918	14	-	1,013	23	44
Total permits for MSAs permitting 1000+ units Jan-July 2018	466,699	263,532	5,874	5,240	192,053	5,575	34
Total for all MSAs, Jan-July 2018	687,619	438,499	9,812	8,647	230,661	7,609	30

Table 1: Residential permits issued in 2018 in 45 MSAs through July. These are all MSAs with permits for at least 1,000 dwelling units in MDUs of five units or more. For MDUs in all MSAs, see Table 2, digital-only bonus content. Source: Bureau of the Census.

- They have not thought through the need for other networks in a building to handle fire alarms, video security, energy management and so forth.
- They are not sure about future tenant demand. But the Census Bureau reports that the percentage of people on regular payrolls (that is, getting a W-2 tax form at the end of each year) who work entirely at home grew from 3.3 percent of the workforce in 2000 to 5 percent in 2016 to 5.2 percent in 2017. In raw numbers, that is an increase from 4 million to 8 million people. The Census Bureau also counts more than 10 percent of the workforce in the "gig economy" either part time or full time.

It is unclear from census data how many households or occupied dwelling units have residents working 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? Is the home business a small added income or a major part of family income? Render reports (in this issue) that 58 percent of condo owners under 35 sometimes work from home and that 19 percent have home-based businesses. The best advice is for MDU owners and managers to survey the needs of their own 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 is thinner and more flexible than in years past. Connections rarely require fusion splicing, so deployments are faster and require less skilled labor. Fiber can be pulled inside with no splice at all – workers can simply strip off weather shielding.

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

Older buildings benefit, too, with techniques that combine existing copper with wireless, G.fast, DOCSIS 3.1 and true, all-fiber, passive optical networks that terminate at a property line or basement.

THE RENTAL TRAP

Even experienced property developers and broadband suppliers fall into the new economy's financial traps when they justify broadband builds. One glaring example: New MDU construction is overwhelmingly for rental units. The percentage of owner-occupied dwelling units overall has fallen from its peak – nearly 70 percent – to 64 percent today. Young, first-time buyers and those who lost their homes to foreclosure or short sales in the recession have great difficulty finding mortgage lenders. Rental costs are rising relative to income, driven by the resulting demand for rental units. This has increased the number of unrelated people who share apartments and ostensibly single-family housing units.

Deployers are well tuned to credit issues. Thus, there has been an increase in the number of households offered bulk services, in which broadband costs are treated as part of the rent rather than as a separate fee. This saves residents money, cuts deployer operating costs, and puts building owners on the hook for the fees. But it also reduces tenant broadband choice and induces many to take only the bulk package with no extras. That in turn, requires buildings to spend on good wireless infrastructure while tenants look to over-the-top services and even cellular for other content.

Tenant churn creates a hidden cost for deployers, however. Unrelated people renting apartments 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 partners, the actual monthly broadband revenue earned by deployers tends to stay close to the promotional price.

No longer can deployers depend on higher revenues from tenants who have

completed promotional terms. What's the penalty? From 12 to 30 percent of "full price" revenue – and the 12 percent is for short promo periods of three to six months. Even a 12 percent hit can destroy all profit potential. **Broadband Communities** offers free monthly cash flow models to help you do your own calculation. Look for the MDU Financial Analyzer at FTTHAnalyzer.com.

Expect the bias toward rentals to continue for several more years. The Federal Reserve Bank has started to reduce the money supply by reducing its balance sheet. When the recession started in 2008, the FRB had about $800 billion in assets. That grew fivefold to around $4 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.

Although the supply of money went up, it tended to move around less until the economy recovered. If that had not happened, the extra money in the system would have caused a great deal of inflation. Instead, it made money easy to borrow, at least by businesses if not by individuals. Money has been available to home builders and network deployers at interest rates in the 3 to 6 percent range.

Now the FRB is more worried about inflation. So as it reduces its balance sheet, and thus the money supply, it has only recently begun to raise interest rates. That, in turn, 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 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 years – to finance network builds themselves. Will that continue? What happens to the money supply as the federal deficit balloons to 20 percent of the federal budget this year? Does the increased money supply and moderate interest rate make up for the federal government's beginning to crowd out local borrowers? There are models to predict the answers to these questions. But for the past 18 months, 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 FUTURE

Immigration policy is in flux, and net immigration is supposedly falling. There are more deportations and fewer immigrants entering the United States. But the number of children in custody, the firmest data we have, has continued to rise through 2018, while the number of refugees admitted permanently has fallen to just over 20,000 so far this year. The White House has announced an annual cap of 30,000, down substantially from the modern peak year of 108,000.

Before the policy change, the Census Bureau estimated that all net population growth in the United States after 2020 would be from net immigration. Changing that outlook would have major implications for housing construction of all kinds.

But the impact would probably be greatest for residential MDU construction. There would be fewer construction jobs, fewer opportunities for broadband deployers, and a smaller economy overall. ❖

Editor-at-large Steve Ross can be reached at steve@bbcmag.com.

Table 2 is available in the digital edition of this article at **www.bbcmag.com**.