A Boon for Network Deployers: Record MDU Construction

Private construction of multiple-dwelling-unit buildings is hitting a new record this year, with about 525,000 housing starts expected.

By Steven S. Ross / *Broadband Communities*

Construction of multiple-dwelling-unit (MDU) apartments by nongovernment builders continues to set records this year, with about 525,000 new starts expected in 2020. Most of those units received construction permits in 2019 (see Table 1) and last winter, before many in the industry fully understood the devastating nature of the COVID-19 pandemic, but seasonally adjusted monthly average permitting and housing starts continued to increase, even into July. That's the last month for which nationwide data is available from the U.S. Census Bureau.

The increase – almost 45,000 (9 percent) over 2019 – continues a decade-long trend since the 2008–2009 economic collapse. New single-family housing production is still far below the pre-recession peak, but the volume of dwelling units in large MDU buildings – five units or more – has been on the rise since 2009 with the exception of only one year, 2017. Volume has been above the pre-recession peak since 2014, setting new records almost every year.

In theory, new MDU construction is the sweet spot for broadband deployments, especially fiber. Installing broadband in new MDU construction is by far the cheapest way to pass a dwelling unit, and using fiber is the cheapest of all. But only about half of new construction has used fiber since the technology became widely available 15 years ago, although anecdotally the percentage is increasing.

However, COVID-19 brought at-home work, education, entertainment and socializing broadband needs to the fore. Even the smallest, least technologically savvy developer now makes broadband a priority.

HOW ACCURATE ARE PROJECTIONS?

I am confident in these projections so far, but there are many unprecedented forces at work. In specific locations, they could tip the balance one way or another.

I predicted 424,000 MDU housing starts last year, and that would have been an all-time high. The total ended up at 481,000. Last year, the biggest headwind was lack of mortgage money. But unprecedented federal budget deficits already were increasing the money supply and reducing pressure on interest rates. Emergency COVID-19 spending doubled the annual federal deficit to far more than $3 trillion this year. That's approaching the same size as the entire pre-COVID-19 federal budget.

This trend simply cannot continue indefinitely. As a result, interest rates are currently at historic lows – less than 3 percent for a 30-year fixed rate mortgage. Banks generally are not seeking unqualified buyers, as they did in the run-up to the last recession. Laws put in place in the wake of the last recession make that more difficult and riskier for lenders.

But there is a huge reservoir of qualified, potential buyers. Census surveys show more

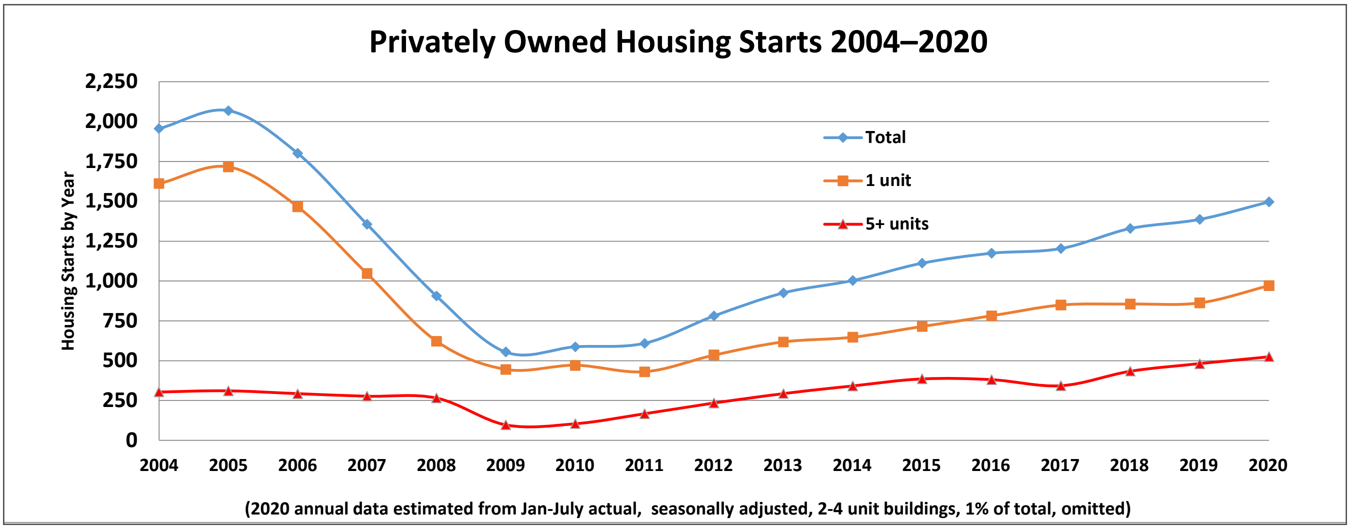

Chart 1: Construction of MDU buildings with at least five units plus single-family housing. Most new units are in buildings of 20 units or more; the average building size this year in MSAs is 31, up from 30 in 2018 and down from 34 in 2017 as wood-framed MDUs become more common. In this chart, the roughly 12,000 annual construction totals for MDUs of 2, 3 or 4 units is omitted to keep data after 2017 compatible with earlier years.

than half of all adults aged 18 to 29 live with parents or guardians – the highest percentage in almost 75 years. Some increase this year may be due to college students sent home from dormitories and off-campus housing by April 1 as campuses closed, but that accounts for at most 2 percentage points of the increase.

According to a Pew Research Center analysis of census data, the number and share of young adults living with parents grew throughout the country. The rise was sharpest in the South, where the total rose by more than a million and the share increased by 7 percentage points, from 46 percent to 52 percent. But the Northeast retained its status as the region where the highest share of young adults live with parents (57 percent).

To meet mortgage demand, lenders are taking a second look at high-salaried young professionals who have little savings and high student loans to pay. They include not only first-time buyers but also some who lost their homes to foreclosure or short sales in the recession. Stay-at-home mandates at least have allowed many young families to save some money for a down payment.

To that mix, add a population beginning to move. People with jobs that can be done from home are

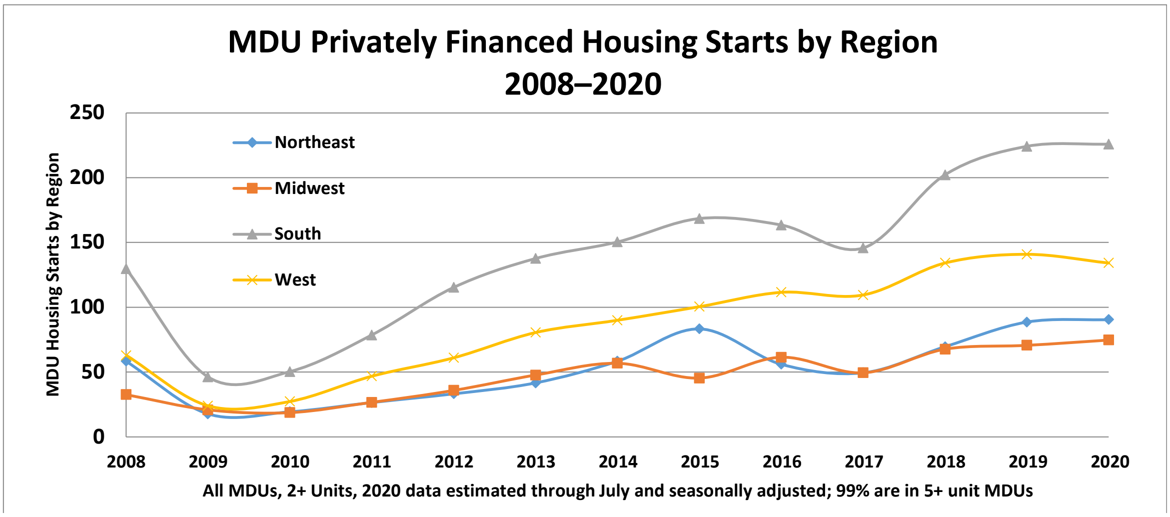

Chart 2: Regional variations in annual MDU construction. In this chart, MDUs of all sizes are aggregated; the census does not fully report MDU data by size in this data series. Note that most MDU growth has been in the South and West since the recession started in 2008, but MDU volume in the West declined this year. The decline predates especially massive forest fires this year, but comes after several years of what had been record fires that have made fire insurance prohibitively expensive in many smaller communities.

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looking for bigger homes in less-expensive suburbs. Many young singles who share apartments want to go solo because they need more space. Others want to continue sharing to make at-home living somewhat easier. The trends vary by geography and characteristics of the local housing stock and workforce.

Many families have no choices at all, however. A quarter of all American families are unemployed or severely underemployed because of COVID-19 restrictions. Evictions often have been stayed mainly by local or federal emergency regulations or because landlords want to keep tenants even if they can't pay now. Congress has (as of mid-September) provided little aid to state and local governments, which now must continue to pressure MDU owners by attempting to collect property, utility and income taxes. In a few places, these issues have decreased rents.

The federal government has been reducing immigration sharply, both fully legal and illegal and for legitimate asylum-seekers. That muddles the situation. The status of a million young adults – 700,000 are the "dreamers" brought to the United States illegally as children – is still in limbo. Some have left. The result is that in 2021, for the first time in U.S. history, the overall population may actually fall. Fewer families creates a lower demand for housing.

Naturalization of legal immigrants ran at a rate of close to 1 million per year. Last year, the figure was 800,000. This year, it will be around 600,000 – even though demand for naturalization

Continued on p. 38

TAKING THE DATA WITH A GRAIN OF SALT

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. Almost two of every three new units are in single-family homes, and much of that is to replace old housing that has fallen into disrepair.

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 just 19,000 require formal construction permits. So the census inflates the numbers it collects by about 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. Therefore, 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. COVID-19 may, of course, change this.

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 per year for the past decade, which is 1 percent of all housing starts. Aside from the pandemic, weather, catastrophic forest fires, and local seasonal patterns tend to account for much of this variation.

There are also regional variations, and those are reported about a year late by the census. 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 in Tables 1 and 2, which it reports about six months later.

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 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 than any other region where retirement or vacation housing is dominant.

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.

METROPOLITAN STATISTICAL AREA (RANKED BY NUMBER OF UNITS IN LARGE MDUS PERMITTED, 2019)	TOTAL	1 UNIT	2 UNITS	3 AND 4 UNITS	5 UNITS OR MORE	STRUCTURES, 5 UNITS OR MORE	AVERAGE SIZE, 5+ UNITS
New York-Newark-Jersey City, NY-NJ-PA	61,168	11,072	1,786	1,289	47,021	1,363	34
Dallas-Fort Worth-Arlington, TX	62,708	34,939	382	293	27,094	594	46
Houston-The Woodlands-Sugar Land, TX	63,672	39,507	302	55	23,808	595	40
Los Angeles-Long Beach-Anaheim, CA	30,554	9,306	1,694	358	19,196	516	37
Seattle-Tacoma-Bellevue, WA	26,599	8,737	574	862	16,426	418	39
Washington-Arlington-Alexandria, DC-VA-MD-WV	26,804	12,977	178	52	13,597	197	69
Austin-Round Rock-Georgetown, TX	32,037	18,426	254	90	13,267	362	37
Miami-Fort Lauderdale-Pompano Beach, FL	20,688	7,241	390	93	12,964	272	48
Minneapolis-St. Paul-Bloomington, MN-WI	22,414	9,610	134	103	12,567	144	87
Phoenix-Mesa-Chandler, AZ	35,873	25,026	664	174	10,009	230	44
Boston-Cambridge-Newton, MA-NH	15,088	4,299	466	394	9,929	671	15
San Francisco-Oakland-Berkeley, CA	13,881	4,076	124	153	9,528	207	46
Chicago-Naperville-Elgin, IL-IN-WI	18,085	7,598	380	761	9,346	259	36
Orlando-Kissimmee-Sanford, FL	24,470	14,995	260	147	9,068	194	47
Portland-Vancouver-Hillsboro, OR-WA	16,815	7,688	274	134	8,719	287	30
Tampa-St. Petersburg-Clearwater, FL	23,540	14,670	166	103	8,601	194	44
Charlotte-Concord-Gastonia, NC-SC	24,637	16,253	58	88	8,238	228	36
Nashville-Davidson-Murfreesboro-Franklin, TN	22,702	14,460	46	61	8,135	179	45
Denver-Aurora-Lakewood, CO	19,308	11,081	86	104	8,037	128	63
Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	15,607	6,963	394	710	7,540	406	19
San Antonio-New Braunfels, TX	15,895	9,103	86	156	6,550	211	31
Atlanta-Sandy Springs-Alpharetta, GA	32,836	26,261	42	115	6,418	169	38
Salt Lake City, UT	10,680	4,760	172	176	5,572	123	45
San Diego-Chula Vista-Carlsbad, CA	8,216	3,019	110	406	4,681	159	29
Kansas City, MO-KS	9,347	4,811	346	259	3,931	95	41
Las Vegas-Henderson-Paradise, NV	13,903	10,042	4	177	3,680	133	28
San Jose-Sunnyvale-Santa Clara, CA	6,230	2,603	26	49	3,552	110	32
Richmond, VA	8,340	4,481	174	196	3,489	98	36
Columbus, OH	8,090	4,389	74	184	3,443	174	20
North Port-Sarasota-Bradenton, FL	10,009	6,542	22	194	3,251	108	30
Riverside-San Bernardino-Ontario, CA	14,599	11,147	120	161	3,171	197	16
Reno, NV	5,263	2,157	46	58	3,002	148	20
Jacksonville, FL	14,687	11,583	40	71	2,993	57	53
Cape Coral-Fort Myers, FL	9,105	5,633	382	144	2,946	89	33
Boise, ID	10,632	7,570	76	226	2,760	156	18
Louisville-Jefferson County, KY-IN	5,766	3,122	30	40	2,574	105	25
Fayetteville-Springdale-Rogers, AR-MO	6,905	4,147	118	98	2,542	100	25
Indianapolis-Carmel-Anderson, IN	9,721	7,120	122	80	2,399	89	27
Detroit-Warren-Dearborn, MI	7,813	5,193	56	186	2,378	157	15
Lakeland-Winter Haven, FL	8,726	6,435	32	24	2,235	108	21
Durham-Chapel Hill, NC	5,795	3,561	6	28	2,200	54	41
Raleigh-Cary, NC	13,320	11,142	16	45	2,117	67	32

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Baltimore-Columbia-Towson, MD	6,967	4,802	72	25	2,068	39	53
Sacramento-Roseville-Folsom, CA	9,431	7,184	176	34	2,037	63	32
Charleston-North Charleston, SC	6,695	4,758	6	19	1,912	74	26
Palm Bay-Melbourne-Titusville, FL	4,202	2,454	8	-	1,740	67	26
Madison, WI	3,343	1,536	110	28	1,669	42	40
Bridgeport-Stamford-Norwalk, CT	2,326	635	40	20	1,631	29	56
St. Louis, MO-IL	7,054	5,179	84	161	1,630	88	19
Wilmington, NC	3,575	1,950	24	3	1,598	64	25
Gainesville, FL	2,567	1,016	8	-	1,543	23	67
Virginia Beach-Norfolk-Newport News, VA-NC	5,908	4,345	46	52	1,465	50	29
Cincinnati, OH-KY-IN	6,023	4,488	28	54	1,453	37	39
Grand Rapids-Kentwood, MI	4,155	2,531	62	125	1,437	71	20
Provo-Orem, UT	6,947	5,423	16	73	1,435	69	21
Omaha-Council Bluffs, NE-IA	4,100	2,633	32	4	1,431	32	45
Urban Honolulu, HI	2,279	912	-	24	1,343	45	30
Colorado Springs, CO	5,508	4,051	98	43	1,316	46	29
Des Moines-West Des Moines, IA	5,269	3,915	34	8	1,312	35	37
Tallahassee, FL	2,345	1,070	14	-	1,261	45	28
Spokane-Spokane Valley, WA	3,300	1,888	216	15	1,181	53	22
Poughkeepsie-Newburgh-Middletown, NY	1,913	796	4	15	1,098	46	24
Greenville-Anderson, SC	6,563	5,385	88	-	1,090	60	18
Crestview-Fort Walton Beach-Destin, FL	3,544	2,393	10	82	1,059	61	17
Odessa, TX	1,782	743	4	-	1,035	35	30
Little Rock-North Little Rock-Conway, AR	3,005	1,921	30	24	1,030	26	40
Greeley, CO	4,387	3,335	-	44	1,008	53	19
Pittsburgh, PA	3,984	2,830	54	96	1,004	28	36
Total permits for MSAs permitting 1000+ units in 5+ buildings, 2019	929,700	511,918	11,976	10,046	395,760	11,432	35
Total for all MSAs, 2019	1,251,157	747,376	20,032	16,274	467,475	15,133	31

Table 1: Residential permits issued in 2019 to private developers in 66 metropolitan statistical areas (MSAs). These are all MSAs with permits for at least 1,000 dwelling units in MDUs of five units or more. Source: U.S. Census Bureau

Continued from p. 36

has been rising among legal resident aliens. The federal government simply is delaying the ceremonies. Citizenship brings higher credit scores and greater mortgage-worthiness for those who are already legal residents. But it also brings the right to vote. That scares many politicians.

The pandemic did not slow the pace of construction much, if at all. Most jurisdictions that had severe lockdowns exempted most construction work. As we noted last year, new construction techniques – particularly nationwide adoption of wood-framed, sprinklered construction for MDUs – also play an important role. The new buildings go up faster and typically cost 65 percent of what concrete- or steel-framed buildings cost.

The price of wood has more than doubled in two years, however, due to demand and a trade war with Canada. This has raised overall construction costs about 10 percent nationally.

National building codes limit new wood 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 because builders can qualify for loans more easily than can families, construction quality and design features often anticipate eventual conversion to condominiums. Typical units, even in MDUs meant for the college dorm market, are one or two bedrooms. Configurations of the buildings range from simple blocks to U-shaped and T-shaped. Facade treatments, balconies and parking vary widely by region and even by building lot in the same city.

THE BUSINESS CASE FOR BROADBAND

All of this offers extra opportunities for broadband deployers, especially smaller deployers seeking to exploit the lower per-apartment deployment costs for MDUs. Deployers also find property owners easier to deal with than condominium homeowners associations.

The bounty is widespread. More than half of all new MDUs are being built in the South (Chart 2), but 310 metropolitan statistical areas (MSAs) saw construction permitting of at least one MDU with at least five units last year. (MSAs have at least one urbanized area with a minimum population of 50,000.) There were 66 MSAs with more than 1,000 new MDUs authorized in 2019 (Table 1).

Local-government construction permits issued in 2019 in MSAs covered a total of 467,475 units in 15,133 buildings, an average of 31 dwelling units per building. That is far above the 420,864 units in 13,976 separate buildings – an average of 30 units per MDU – in 2018. The data on housing starts and permitting comes from the U.S. Census Bureau.

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

As researcher Michael Render of RVA has reported consistently in his market surveys, broadband is the most sought-after amenity among renters and prospective buyers. But as noted previously, COVID-19 exposed the deficiencies of copper or exclusively wireless broadband distribution. A very high percentage of residents (Render says almost 60 percent) have always worked from home occasionally, but it was unclear from census data how many households or occupied dwelling units had 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? Now we know, thanks to COVID-19. Anyone who can work from home, does – continually.

Render also says that pre-COVID-19, one-fifth of all families ran a business from home – up from just 9 percent in 2010 (12 percent of residents with fiber connections in 2010). Is the home business a small added income or a major part of family income? With the pandemic, it may be the only source of family income.

The best advice is for existing 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. Many will need it, courtesy of COVID-19 and changing office practices, for years to come.

NEW PRODUCTS FOR MDU DEPLOYMENTS

Vendors now offer new products to make MDU fiber deployments ever-cheaper. The fiber itself 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, making fiber easier to deploy and maintain with standardized trays and simple but effective gaskets that allow easier maintenance.

There are now many techniques that combine copper with Wi-Fi and 5G cellular, satellite, DOCSIS and true, all-fiber, passive optical networks terminating at the unit, property line, attic or basement. But again, new buildings are cheaper to build and easier to maintain if they have all-fiber networks and good provision for wireless technologies, and all-fiber networks take up less room in structures than other types of networks. New all-wood construction requires fire-suppression sprinklers. Fiber can run near the water distribution system; copper cannot.

THE RENTAL TRAP

How does a building owner manage the risks? The percentage of owner-occupied dwelling units overall has fallen from its peak – nearly 70 percent in 2008 – to about 60 percent today. This pushes demand for rental housing, so rental costs were rising faster than income. This has increased the number of people who share apartments and rental houses – complicating marketing for network deployers, but increasing the demand for broadband services in any one apartment. In many cities, rents are soft and vacancies rising because of COVID-19.

Deployers may wish to take some credit risks, however, as many young tenants buy only internet broadband – a high-margin sale for deployers, and one that avoids their being the bill collectors for conventional video-content providers. Video content is a low- to almost zero-margin business for deployers. On-demand video is not usually a deployer responsibility.

There has been an increase in the number of households offered bulk services through building owners and managers (to at least 6 percent of all users). That is, broadband costs are treated as part of the rent rather than a separate fee. This saves residents money, cuts deployer marketing and operating costs, and puts building owners on the hook for the fees. But some owners and managers worried last year about adding bulk fees to rents that are already rising. And this year federal subsidies to help families with children pay for school-required broadband are being discussed.

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

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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 deployers earn tends to stay close to the lower, 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 and revenue models to help you do your own calculation. See www.bbcmag.com/tools-and-resources/ftth-financial-analyzers.

Expect the bias toward rentals to continue for several more years, even though rental rates are softening and interest rates remain low and seem to be falling worldwide. Smaller local banks therefore will tend to avoid lending long-term to individuals and 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 rolled over every five years – to finance network builds themselves, using available short-term capital. Will that continue? And what happens now that the federal deficit has ballooned? ❖

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