Wood Products Industry Trends for Alabama

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NAICS Codes: 321 Wood Product Manufacturing: 32121 Wood Paneling Manufacturing and 32191 Millwork

Short-Term Outlook: Positive

Long-Term Outlook: Positive

Executive Summary

This piece details trends in the wood products industry in the United States and the opportunities those trends present for the state of Alabama. This piece specifically focuses on wood products as a building material for both residential and nonresidential construction. The trends in construction activity and building material pricing post-2020 present new opportunities for wood products as a building material. Residential construction has plateaued in response to higher interest rates, but nonresidential construction spending has continued to increase. Steel and concrete prices remain elevated from pre-2020 levels while wood prices continue to decline from their highs in 2021. Advances in mass timber technology and the current pricing mix present an opportunity for wood products to make inroads as a building material for nonresidential construction. With fresh tariffs set to hit imported steel from China, the cost advantages of mass timber as a building material could remain for the next several years.

Government incentives and regulations are also promoting the increased adoption of wood products in nonresidential construction with multiple USDA grants available for construction projects using wood as a building material and tax deductions for green buildings provided by the Inflation Reduction Act. There is even proposed federal legislation to give mass timber priority as a building material for government building construction and improvements across the country.

Alabama is well positioned to capitalize on this opportunity. The state is home to the 2^{nd} largest timberland base in the United States, industry leading mass timber companies like Smart-Lam North America, cutting edge university research centers like the Auburn Mass Timber Collaborative, and a central location within the largest and fasting growing market for construction in the United States.

1 Introduction

The wood products market encompasses a broad range of end uses for wood, including wood panels, flooring, trusses, engineered wood products, veneer, plywood, and more. The focus of this report is to highlight the segments within the wood products market that are experiencing the most growth and present the best opportunity for future investment in Alabama.

Specifically, this report studies two different NAICS codes within the wood products space: 32121 Wood Paneling Manufacturing and 32191 Millwork.[1] These industry segments have experienced strong growth in recent years due to the strength of the US housing market and are forecast to continue growing, at a slower pace, through 2029 (Guirguis, 2024). Moreover, these segments can be expected to grow in the US South and Alabama, as upstream lumber suppliers continue to move to the US South (Lamb, 2023).

Past growth is not always an indication of future success, especially as this industry faces major headwinds from declining home affordability, relatively high interest rates, and economic uncertainty. This report will explore how these trends influence the industry segments that should be targets for Alabama and its premier wood basket.

2 Industry Trends

2.1 Residential Construction

One of the most important drivers of performance in this industry is the performance of the housing market. Products in this industry segment are used in the building of new homes and in the renovation of existing homes. Alongside the housing market, nonresidential construction is a key user of the output from the Wood Products industry. As can be seen in figure 1, these two end-use markets are diverging, especially since mid-2022 (Federal Reserve, 2024).

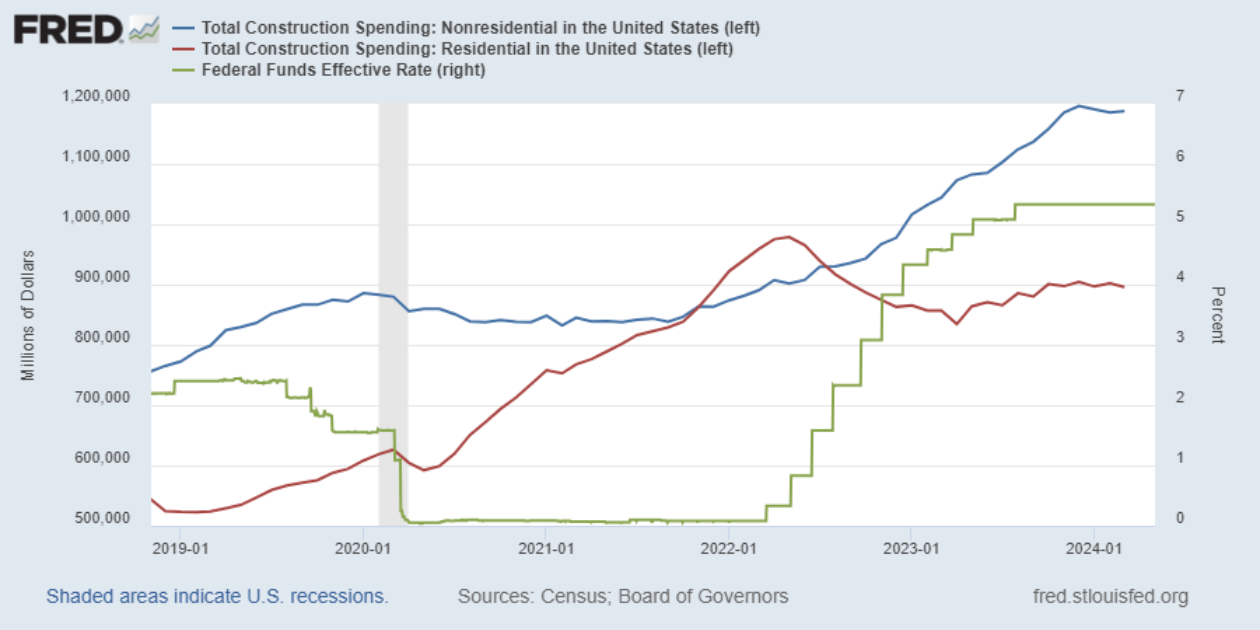
Residential construction spending, or spending on new home builds, peaked in Q2 2022 and has been on the decline since. Unsurprisingly, this decline coincides with the increases in the Federal Funds Rate that occurred that same year and continued through 2023. What is curious is that nonresidential construction has not slowed down until recently, plateauing around Q4 2023.

From March 2023 to March 2024, new housing starts declined by a seasonally adjusted 4.5%. However, much of this trend is a regional story, as the Northeast led the way with a 56.8% decline followed by the South with an 11% decline. The Midwest and West saw new housing starts grow at 18% and 48.1% respectively. Even these percentage changes don't tell the whole story, as the South is still by far the largest market for new housing starts, accounting for more new housing starts than the other three regions combined.

Despite the decline in new housing starts in 2023, analysts estimate that new housing starts are expected to increase from 2024 to 2030 (Guirguis, 2024). The projected recovery in new housing starts is based on projections of declining interest rates over the next five years.

[1] The Alabama Business Intelligence Center has previously produced reports for NAICS 32111 Sawmills and NAICS 322 Paper Manufacturing.

Figure 1: Construction Spending and the Federal Funds Rate: 2019-2024

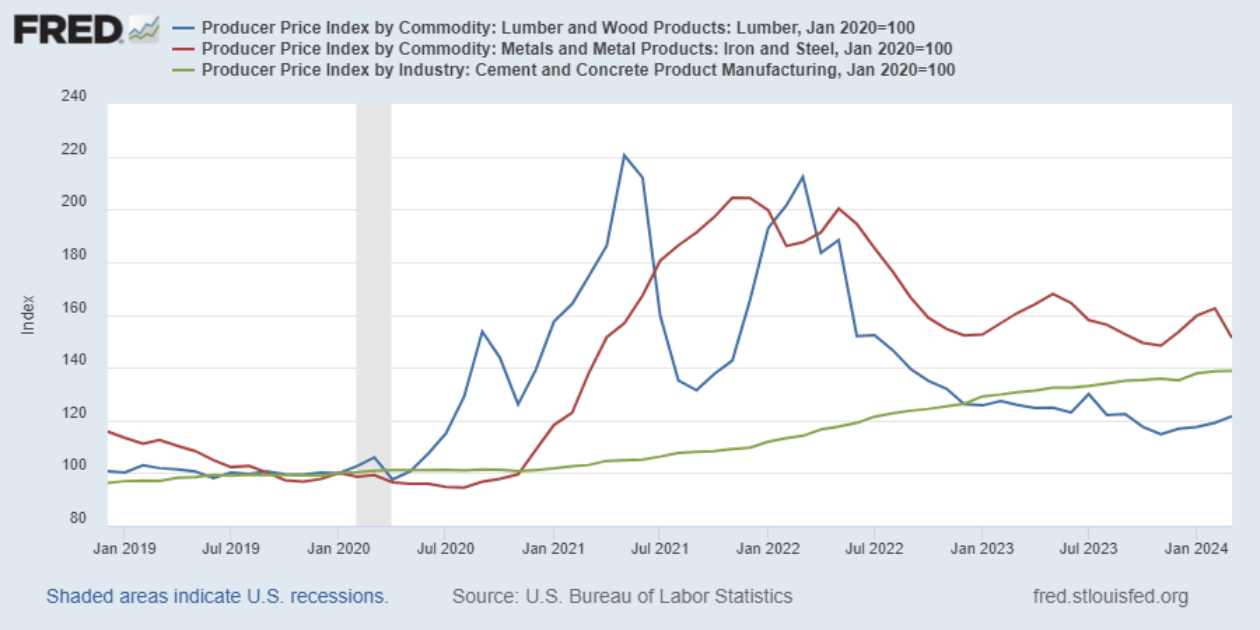


2.2 Nonresidential Construction

Residential construction, in percentage terms, is a greater user of wood products than nonresidential construction, as nonresidential construction has a heaver reliance on steel and other building materials. The total wood product usage in residential construction in the United States is 10 times the total wood product usage in nonresidential construction (O'Connor et al., 2004). This makes the recent downturn in residential construction even more concerning, but it highlights potential market opportunities for wood products in nonresidential construction. Specifically, the continued growth in nonresidential construction opens up an opportunity for engineered wood products. As of 2017, around 28% of nonresidential buildings four stories or less had a wooden structure in Canada (Robichaud, 2017). The latest data for the USA, collected in 2004, placed the figure at 26.8% (O'Connor et al., 2004). This trend is projected to change in the coming years. Specifically, it is estimated that the volume of wood used in new nonresidential construction is estimated to double or quadruple between now and 2050 in Canadian markets (Cordier et al., 2020). This is not to say wood will be fully displacing steel, concrete, and other building materials, but it is saying that the demand for wood inputs from the nonresidential construction sector is set to increase in Canadian markets. The same study that produced that estimation also estimated that supply of additional wood could be constrained based on the trends in Canadian harvesting activity.

In addition to broad market trends, wood's competitor building materials have faced headwinds since 2020. Steel is by far the most commonly used building material in nonresidential construction, and the steel market is becoming increasingly uncertain, with prices rising and staying elevated after the pandemic (See Figure 2). There is little reason to believe prices will return to previous levels, with major mergers occurring in the steel industry and the US government con-

Figure 2: Producer Price Index for Lumber, Iron and Steel, and Cement and Concrete: 2019-2024



sidering raising tariffs on Chinese steel (United States Steel, 2023; Boak et al., 2024).Both factors will keep steel prices relatively high and present an opportunity for structural wood products to compete as a building material in nonresidential construction. Concrete is much the same story as steel. In terms of prices, from January 2020 to January 2024, iron and steel prices increased approximately 60% and cement and concrete prices increased approximately 38%, while lumber prices increased only 17.5%.

Wood products are in a relatively competitive price position post-2022, which provides an increasingly valuable market entry opportunity as builders search for cheaper alternatives. Wood products have enjoyed cost advantages over steel and concrete for the past decade, and those advantages are only growing. A 2016 study found that Cross-Laminated Timber (CLT), which is an engineered wood product that is used as a structural building material, had significant cost advantages over steel and concrete as building material to the tune of $4 to $15 per square foot; that divide has likely grown in the past 8 years given the changes in market prices (Mallo & Espinoza, 2016). CLT and other engineered wood products hold substantial advantages over steel and concrete that go beyond just material prices. Buildings that use engineered wood products like CLT in place of steel and concrete can be constructed faster with less workers and construction traffic. Moreover, engineered wood products like CLT have much higher strength to weight ratios than steel or concrete, allowing for lighter buildings that maintain their strength without stressing the building's foundation to the same degree (Raymond, 2019).

2.3 Geography

The trends in all forms of construction are important for the wood products industry as a whole, but equally important is how those trends break down geographically. Not all regions of the US

are feeling the changes in construction trends equally. Moreover, these differences are likely to continue into the future given the changing demographics of the the United States.

According to the US Census, from 2018 to 2022, the South and West Census regions saw nonresidential construction grow by CAGRs of 5.13% and 8.34% respectively. The growth rates don't even tell the whole story, as the South was already the largest census region for construction. In absolute terms, the South is seeing $40 billion per year more nonresidential construction in 2022 than it did in 2018, which is the largest absolute growth for any region (See Figure 3).

The Census data for new housing starts over the same period tell a similar story, with the largest absolute growth coming from the South region, where the South was building 200 thousand more units per year in 2022 than in 2018 (See Figure 4). Although the trend in new housing starts has tapered off in the latest data from 2023, the South remains the largest market for new housing starts.

Figure 3:

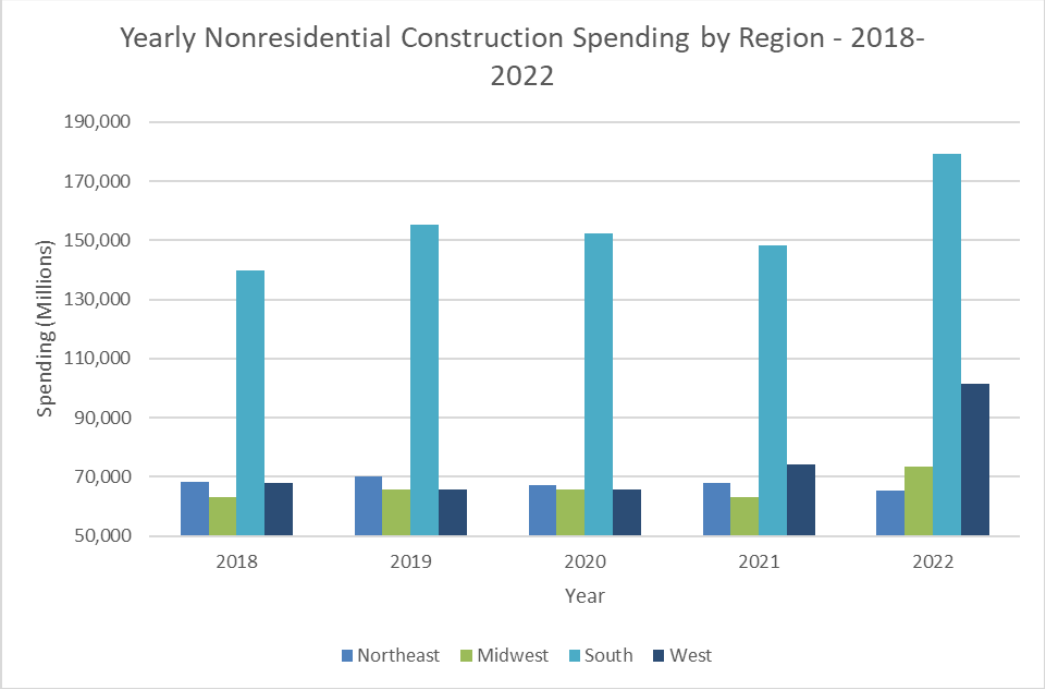
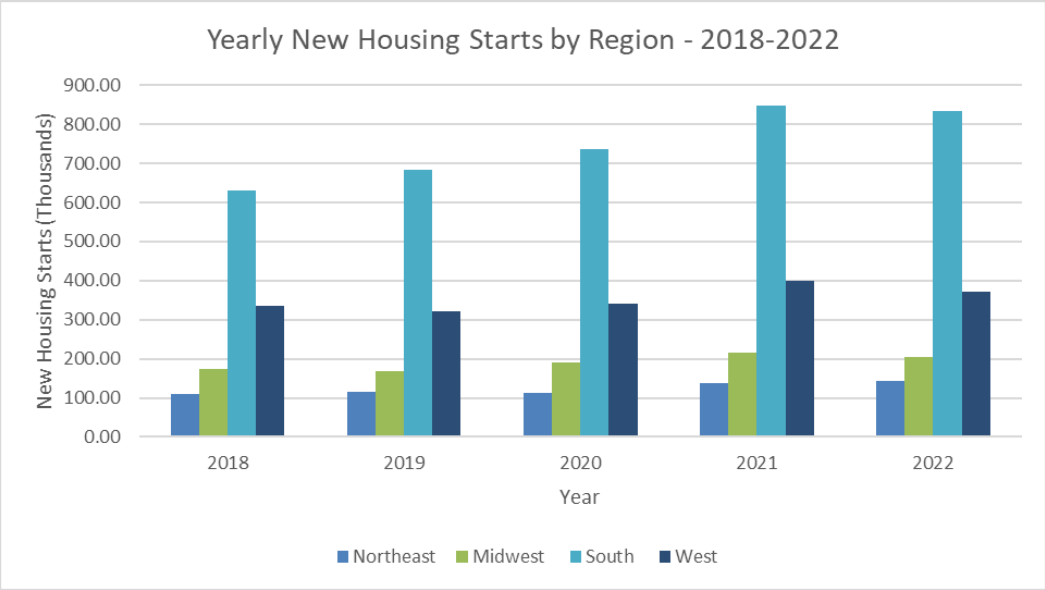


Figure 4:



These trends should continue, as the demographic patterns of the US have remained remarkably consistent over the past five years. Specifically, the growth in construction of all kinds in the South is driven by more people living in the region. According to the latest data from 2023, 4 of the top 5 states for inbound moves were in the South (North American Moving Services, 2023). This has been the case going back at least as far as 2020. Putting firmer numbers to the demographic trend, the population of the South has increased by 3.7 million people from 2020 to 2023, while the population of the Midwest increased by 60,000, the West increased by 200,000, and the Northeast fell by 500,000. The future for the region and its demand for construction materials looks incredibly bright compared to the rest of the nation. This presents an opportunity for wood products manufacturers in the region to capitalize on this growth by locating or expanding in the region where they will experience the most end-use demand.

2.4 International Trade

Beyond the domestic market changes for wood products driven by shifting demographics and the resulting construction patterns, the US has also experienced changes in it's import/export mix over the past half decade, and this new mix presents an opportunity for change. From 2017 to 2022, the US increased its reliance on importing Wood Products from abroad. Specifically, the US imported $17.2 billion in Wood Products from Canada in 2022, up from $4.6 billion in 2017 (OEC, 2024). In 2022, the US became the largest importer of wood products in the world, with imports from Canada making up about half of the total wood products imports into the US. The next largest importer into the US in 2022 was China, with $4 billion in imports to the US.

Given recent trends in Canada's lumber industry, it is easy to see that reliance on Canadian wood products comes with some risks, namely increased costs. At the same time that US reliance on Canadian wood products has grown, Canada's lumber industry, the upstream supply for wood

products, has suffered immensely with output falling 25% over the past five years and 40% over the past 20 years (ResourceWise, 2023). Wildfires, pine beetle infestations, and regulations have hampered Canada's wood supply in recent years, making them an uncertain source of future wood products imports and presenting an opportunity for domestic US production to fill the gap left by Canadian suppliers. Moreover, these trends are already influencing Canadian producers, as Canadian lumber producers have been shifting their capacity away from British Columbia and towards the US South in recent years (Lamb, 2023).

3 Opportunities

The trends in construction, international trade, and demographics all suggest a bright future for wood products in the US, especially in the South, but how do southern states take advantage of these trends?

3.1 Incentives Programs

The US Forest Service offers multiple grant programs to assist in projects involving innovative wood products. These programs relevant to wood products production and construction include: Wood Innovations Grants and Community Wood Grants (US Forest Service, 2024). The Wood Innovation Grants invest in proposals that promote using wood as a construction material in commercial, institutional, and multifamily buildings. The Community Wood Grants invest in innovative wood product production facilities. The full suite of programs have provided $74 million in funding to projects across 41 states. These programs have already awarded funds to several entities in Alabama, including the Auburn University Mass Timber Collaborative and SmartLam North America.

These programs, coupled with the current market positioning of wood compared to other building materials, provide a serious incentive for builders to begin using various forms of mass timber for nonresidential construction projects. The programs also provide support for new facilities or expansions to existing facilities for companies that manufacture mass timber or other innovative wood products. Moreover, companies that have received funding from these programs for their operations in other states make for a valuable set of lead generation targets for Alabama, as a receipt of funding via these programs is a strong signal that the company is a key industry player.

Beyond US Forest Service programs, there is another opportunity for incentive support for innovative wood products, which comes in the form of a tax deduction called a 179D Deduction provided by the Inflation Reduction Act (KBKG, 2024). In order to qualify for the deduction, a builder or building owner must build a new energy-efficient building or must make an improvement to an existing building that improves the building's energy efficiency by changing the building's "envelope," improving its HVAC, or improving its lighting. A building's envelope includes its exterior walls, which if made out of wood compared to another building material, would provide better insulation and improve the energy efficiency of the building. The legislation goes a step further than just providing a tax break to building owners. If the building is owned by a tax-exempt organization, then the tax break transfers to the contractors, engineers, and architects that build

and design the new, energy-efficient building or improvement (KBKG, 2024). Specific building materials are not mentioned in the legislation, but wood has substantial insulation advantages compared to steel and concrete. In fact, wood insulates 400 times better than steel and 14 times better than concrete according to USDA data, so it is a prime candidate as a building material for energy efficient building envelopes (Ross, 2021).

The nonprofit sector is also beginning to provide incentives and support for innovative wood product and mass timber projects. The Atlanta Mass Timber Accelerator program, managed by the nonprofit Georgia Forestry Foundation, provides up to $25,000 and technical assistance to eligible mass timber projects in Georgia (Think Wood, 2023). The program offers support to help increase adoption of mass timber as a building material, as many architects, builders, developers, and engineers do not have experience working with mass timber. Programs like the Atlanta Mass Timber Accelerator can serve as a model for nonprofit and private sector stakeholders in Alabama to incentivize mass timber adoption. Moreover, the Georgia Forestry Foundation operates this program as a suite of initiatives in its Seedlings to Solutions mass timber strategy. The other programs in the strategy address challenges related to workforce and education, which are crucial inputs for mass timber adoption. A mass timber-trained workforce is essential for the entire mass timber supply chain, from harvesting, sawing, engineering, and production to transportation and installation. In fact, training curriculum for working with mass timber is already provided open-source from WoodWorks, which is a project support organization for wood products related building projects (WoodWorks, 2023). Curriculum like this provided by the private sector can be implemented to upskill the construction workforce in the state and boost the rate of mass timber adoption.

3.2 Policy

Senators Jeff Merkley and James Risch introduced the Mass Timber Federal Buildings Act in April of 2024, which would provide preference to building contracts that use mass timber for construction, renovation, or acquisition of federal buildings or military bases (Merkley, 2024; Risch, 2024). The law would prioritize mass timber sourced and produced in the United States over foreign produced mass timber. The bill has bipartisan support, and was introduced with the states of the two sponsoring senators, Oregon and Idaho, in mind, but the bill could have wider reaching consequences for the rest of the country, especially the US South. The South, as defined by the Census, includes Washington D.C. and the largest share of the military bases in the United States, opening up many opportunities in the region for mass timber renovation projects. Alabama is located in the heart of the region and is an attractive location from which to service potential government contracts. The progress of the bill should be monitored closely.

At the moment, most states, including Alabama, do not have any state-level policies that attempt to mirror the Mass Timber Federal Buildings Act; however, there are still policies in place that assist with the adoption of mass timber. Alabama has adopted the 2021 International Building Code (IBC) standards for mass timber construction, allowing for mass timber buildings up to 18 stories tall, which will assist on the regulatory and permitting front for builders, engineers, and architects (WoodWorks, 2024a). Alabama also has a program to address issues at the other end of the supply chain, namely the Site Evaluation and Economic Development Strategy Act, or

SEEDS Program, to address industrial site constraints across the state. If mass timber adoption is going to increase in Alabama, the state will need to attract additional mass timber producers to turn harvested timber into CLT, glulam, and other mass timber products to support that adoption process. The SEEDS Program can assist communities in getting their sites ready to take on investment from a wide variety of industries, including wood products.

3.3 Mass Timber Market

Given the trends in construction, trade, and demographics, the entire wood products sector is well positioned in the US, and especially well positioned in the South; however, the best positioned segment within wood products in terms of growth appears to be mass timber. Mass timber, which includes various wood products like Glue-Laminated Timber (Glulam), Cross-Laminated Timber (CLT), Nail-Laminated Timber (NLT), Dowel-Laminated Timber (DLT), and others, is in a strong position to gain market share in the nonresidential construction space, as that market continues to grow, other building materials continue to increase in price, and incentives and regulations begin to favor the use of wood as a building material. The other products within wood products that are more suited towards residential construction, like OSB, plywood, etc., are still strong targets, especially in the South, but growth in residential construction is far more sensitive to interest rates than nonresidential construction appears to be, hampering their outlook in the near term.

Mass timber is a developing space with constantly improving technology, and the state of Alabama is a crucial part of that space. Auburn University's Auburn Mass Timber Collaborative (AMTC) research center is advancing mass timber research and adoption, and SmartLam North America in Dothan, Alabama is one of the market leaders in the mass timber space. Alabama's premier timberland base, which is the 2^{nd} largest in the United States, existing industry expertise, university research support, and location within the largest and fastest growing market for construction in the United States makes Alabama a prime location for the growth of the mass timber industry.

4 Conclusion

Market dynamics, technological advancement, government regulation and policy, international trade dynamics, and migration patterns suggest that there is a major opportunity in the wood products and mass timber space for Alabama. With a plentiful supply of inputs for industry, close proximity to final end-use markets, and technological expertise, Alabama is primed to take on investment from mass timber manufacturing firms to service the nonresidential construction market in the near future. As nonresidential construction spending continues to climb and building material prices remain elevated, mass timber should become an increasingly attractive option for builders. In the longer run, as interest rates fall and residential construction recovers, traditional wood products manufacturing presents a strong opportunity for the state, as Alabama is situated at the heart of the US South, which is in the midst of a population boom relative to the rest of the country.

Alabama is poised to take advantage of this opportunity in wood products and mass timber, but workforce, site development, and mass timber adoption will be key determinants in how fully the state seizes this opportunity. Having a workforce ready to work with mass timber, ready sites to accommodate mass timber manufacturers, and builders comfortable with using mass timber as a building material will be essential. There are currently over 2,100 mass timber projects completed, underway, or in-design across the country (WoodWorks, 2024b). Alabama only accounts for 23, or 1.1%, of those projects despite having one of the best wood baskets in the country. With the right application towards addressing challenges in this segment and the positive market dynamics in building materials, Alabama can see its share of this new market grow.

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Appendix A

Figure 5: US Census Regions

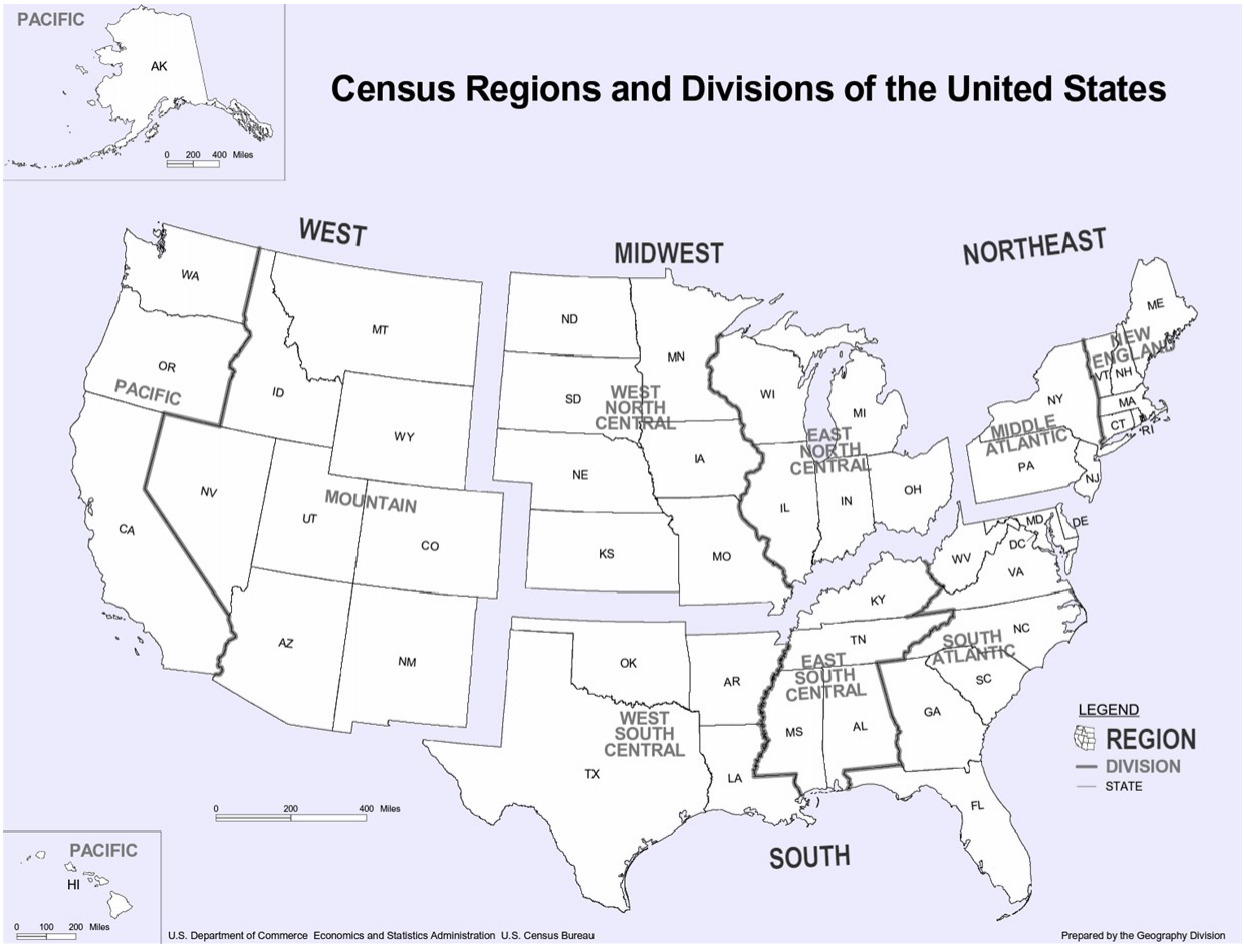
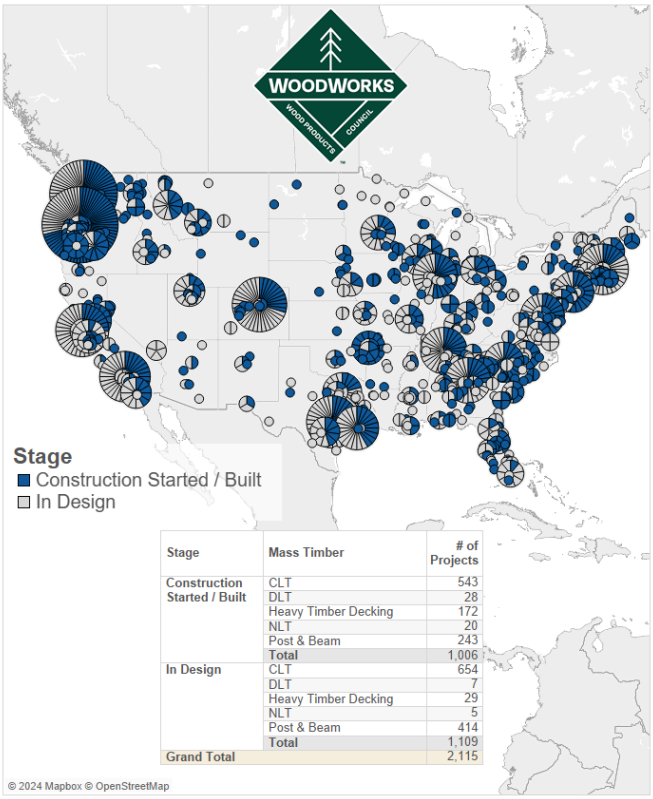


Figure 6:

Mass Timber Projects In Design and Constructed in the US (March 2024)



Stage	Mass Timber	# of Projects
Construction Started / Built	CLT	543
	DLT	28
	Heavy Timber Decking	172
	NLT	20
	Post & Beam	243
	Total	1,006
In Design	CLT	654
	DLT	7
	Heavy Timber Decking	29
	NLT	5
	Post & Beam	414
	Total	1,109
Grand Total		2,115

State	Stage	
AK	In Design	7
AL	Construction Started / Built	12
	In Design	11
AR	Construction Started / Built	24
	In Design	8
AZ	Construction Started / Built	3
	In Design	6
CA	Construction Started / Built	124
	In Design	173
CO	Construction Started / Built	33
	In Design	43
CT	Construction Started / Built	13
	In Design	7
DC	Construction Started / Built	10
	In Design	14
DE	Construction Started / Built	1
	In Design	1
FL	Construction Started / Built	36
	In Design	50
GA	Construction Started / Built	25
	In Design	42
HI	Construction Started / Built	2
	In Design	2
IA	Construction Started / Built	10
	In Design	1
ID	Construction Started / Built	11
	In Design	11
IL	Construction Started / Built	20
	In Design	26
IN	Construction Started / Built	6
	In Design	6
KS	Construction Started / Built	3
	In Design	4
KY	Construction Started / Built	7
	In Design	10
LA	Construction Started / Built	4
	In Design	8
MA	Construction Started / Built	39
	In Design	73
MD	Construction Started / Built	10
	In Design	21
ME	Construction Started / Built	13
	In Design	16
MI	Construction Started / Built	16
	In Design	25
MN	Construction Started / Built	15
	In Design	21
MO	Construction Started / Built	10
	In Design	18

State	Stage	
MS	Construction Started / Built	2
	In Design	11
MT	Construction Started / Built	19
	In Design	16
NC	Construction Started / Built	48
	In Design	39
ND	Construction Started / Built	2
	In Design	2
NE	Construction Started / Built	6
	In Design	8
NH	Construction Started / Built	4
	In Design	11
NJ	Construction Started / Built	10
	In Design	11
NM	Construction Started / Built	3
	In Design	2
NV	Construction Started / Built	1
	In Design	6
NY	Construction Started / Built	29
	In Design	43
OH	Construction Started / Built	15
	In Design	15
OK	Construction Started / Built	5
	In Design	4
OR	Construction Started / Built	119
	In Design	37
PA	Construction Started / Built	9
	In Design	13
RI	Construction Started / Built	6
	In Design	2
SC	Construction Started / Built	26
	In Design	9
SD	Construction Started / Built	2
	In Design	1
TN	Construction Started / Built	13
	In Design	34
TX	Construction Started / Built	64
	In Design	101
UT	Construction Started / Built	15
	In Design	17
VA	Construction Started / Built	15
	In Design	29
VT	Construction Started / Built	3
	In Design	10
WA	Construction Started / Built	109
	In Design	65
WI	Construction Started / Built	29
	In Design	19
WV	Construction Started / Built	2
WY	Construction Started / Built	3

Considering mass timber for a project?
Ask us anything.
For free project support, contact:
help@woodworks.org
woodworks.org/project-assistance

Appendix B

Definitions:

- Cross-Laminated Timber (CLT) - CLT is an engineered wood product consisting of layers of kiln-dried dimension lumber (usually three, five, seven or nine) oriented at right angles to one another and then glued to form structural panels. By gluing layers of wood at right angles, the panel delivers excellent structural rigidity in both directions. In special cases, double outer laminations may be parallel and not alternating crosswise.
- Glue-Laminated Timber (Glulam) - Glulam, short for glued laminated timber, is an engineered wood product manufactured by gluing together pieces of timber, known as laminates. This process produces larger size and longer length members, which can be curved or straight.
- Nail-Laminated Timber (NLT) - Nail Laminated Timber (NLT) is a mass timber product created by turning dimensional lumber on edge and mechanically fastening the laminations together with nails. NLT is most commonly utilized for floor and roof systems, though it can also be used for walls, elevator shafts, and stair shafts.
- Dowel-Laminated Timber (DLT) - Dowel Laminated Timber (DLT) is also know as brettstapel, literally meaning board stack in German. it is a technique of constructing large-scale solid timber panels for use as structural or non-structural elements, utilising smaller untreated sawn timber sections, which are mechanically fixed together with timber dowels.