

# The Rise of Mass Timber in North America

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Who Will Own The Forest

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# The Beck Group

- Forest products planning, consulting & benchmarking services since 1981
- Broad geographic experience
  - US West, South, Canada
  - Overseas
- Forest Products Industry
  - Lumber
  - Engineered wood
  - Pellets
  - Biomass
- Producing partner for Mass Timber State of the Industry Report

# Overview

- What is Mass Timber?
- State of the Industry - North America 2019
- Future Outlook

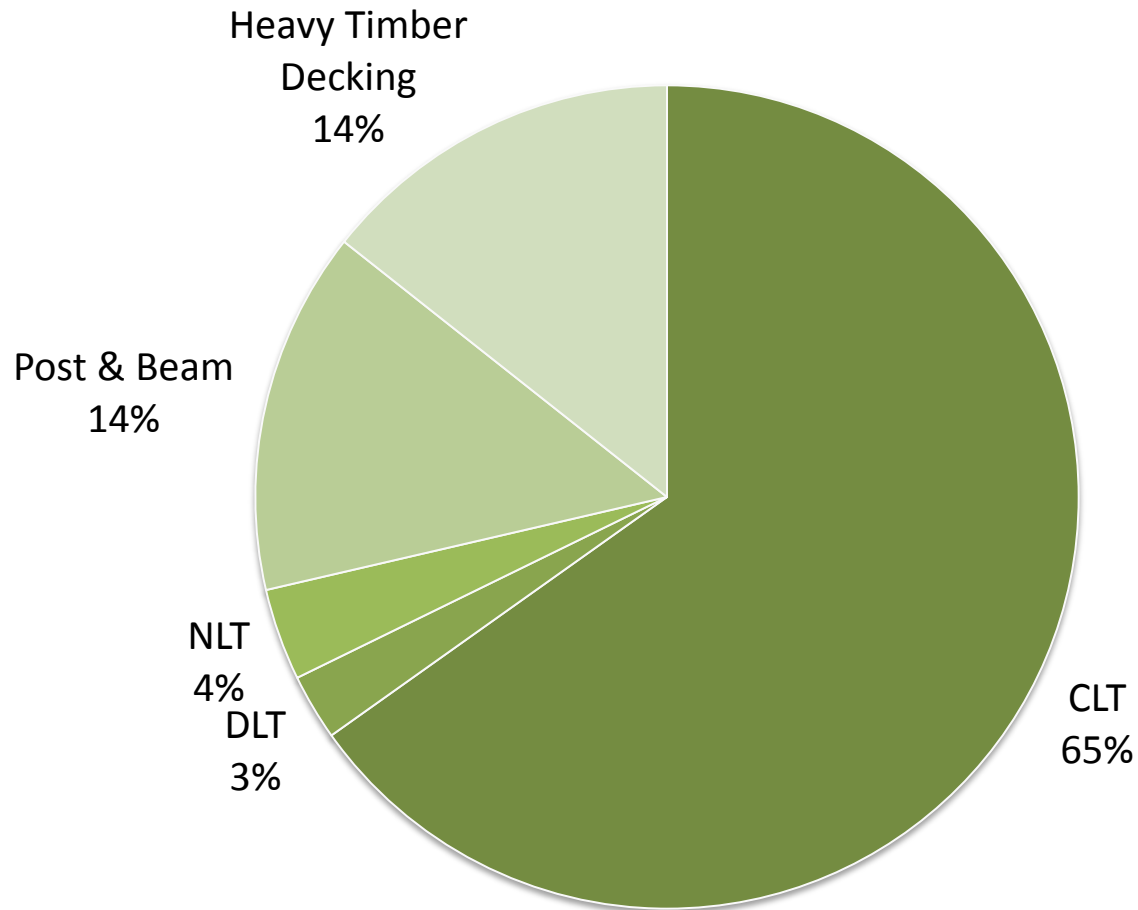
# What is Mass Timber?

- Wood based products suitable for large scale construction
  - Solid sawn products
    - Heavy Timbers
    - Heavy Decking
  - Engineered wood products
    - Mass Timber Panels (CLT, DLT, NLT, MPP)
    - Glulam

# Why Mass Timber?

- Lower environmental impact
- Cost competitive
- High strength to weight ratio
- Fast construction
- Low demand for skilled labor
- Superior fire performance (also blast and ballistic)
- Aesthetics

# Mass Timber Materials - 2018



# Solid Sawn Heavy Timbers

- Nominal 6x6 and larger
- Used in post and beam or as support for mass timber panels
- Visual appeal – rough sawn or surfaced
- Limited suppliers – mostly Douglas fir



# Heavy Timber Decking

- Mostly 3x6, 4x6 nominal southern pine
- Tongue-and-groove profile
- Some solid, some laminated
- Labor intensive
- Limited suppliers



Photo: Southern Wood Specialties



# Cross Laminated Timber (CLT)

- Three or more perpendicular layers of lumber
- Bonded by adhesive
- Most use 2" dimension lumber as raw material
- Commonly 8-12' width and 30-60' length
- Vertical or horizontal applications



Photo: APA – Engineered Wood Association

# Nail Laminated Timber (NLT)

- Not cross laminated – single layer of lumber stacked on edge
- Fastened by nails
- Most uses 2” dimension lumber as raw material
- Doesn't require dedicated manufacturing facility
- Normally used in horizontal applications



Photo: StructureCraft

# Dowel Laminated Timber (DLT)

- Not cross laminated – single layer of lumber stacked on edge
- Entirely wood assembly – no adhesive or nails
- Most uses 2” dimension lumber as raw material
- Normally used in horizontal applications



Photo: StructureCraft

# Mass Plywood Panel (MPP)

- Veneer based mass timber panels
- Reduced panel thickness, or longer span length compared with CLT
- Vertical or horizontal applications

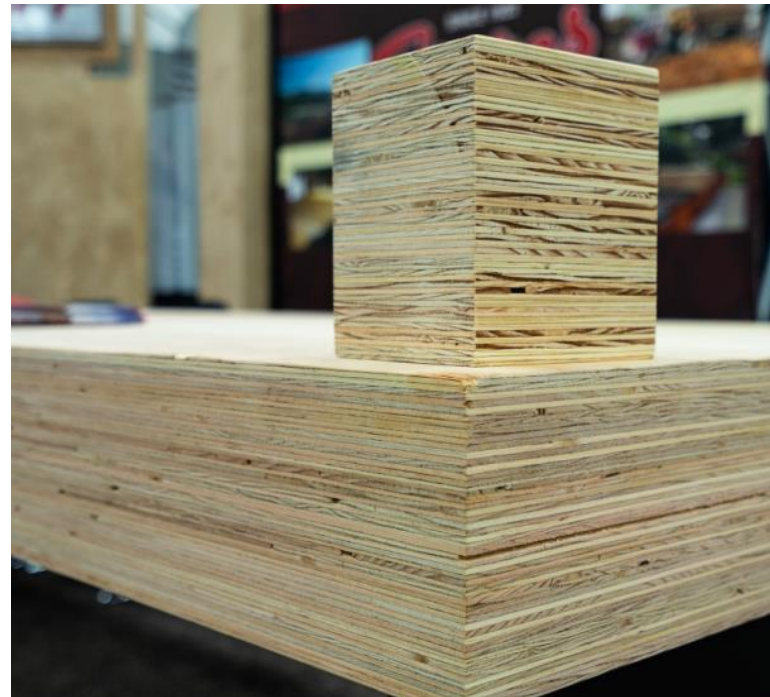


Photo: Oregon Dept. of Forestry

# Glue Laminated Timber (Glulam or GLT)

- Commonly used as vertical support members for mass timber panels
- Most uses 2” dimension lumber as raw material
- Well established manufacturing base



Photo: APA – Engineered Wood Association

# CLT/Glulam Structure



Photo: Structurlam

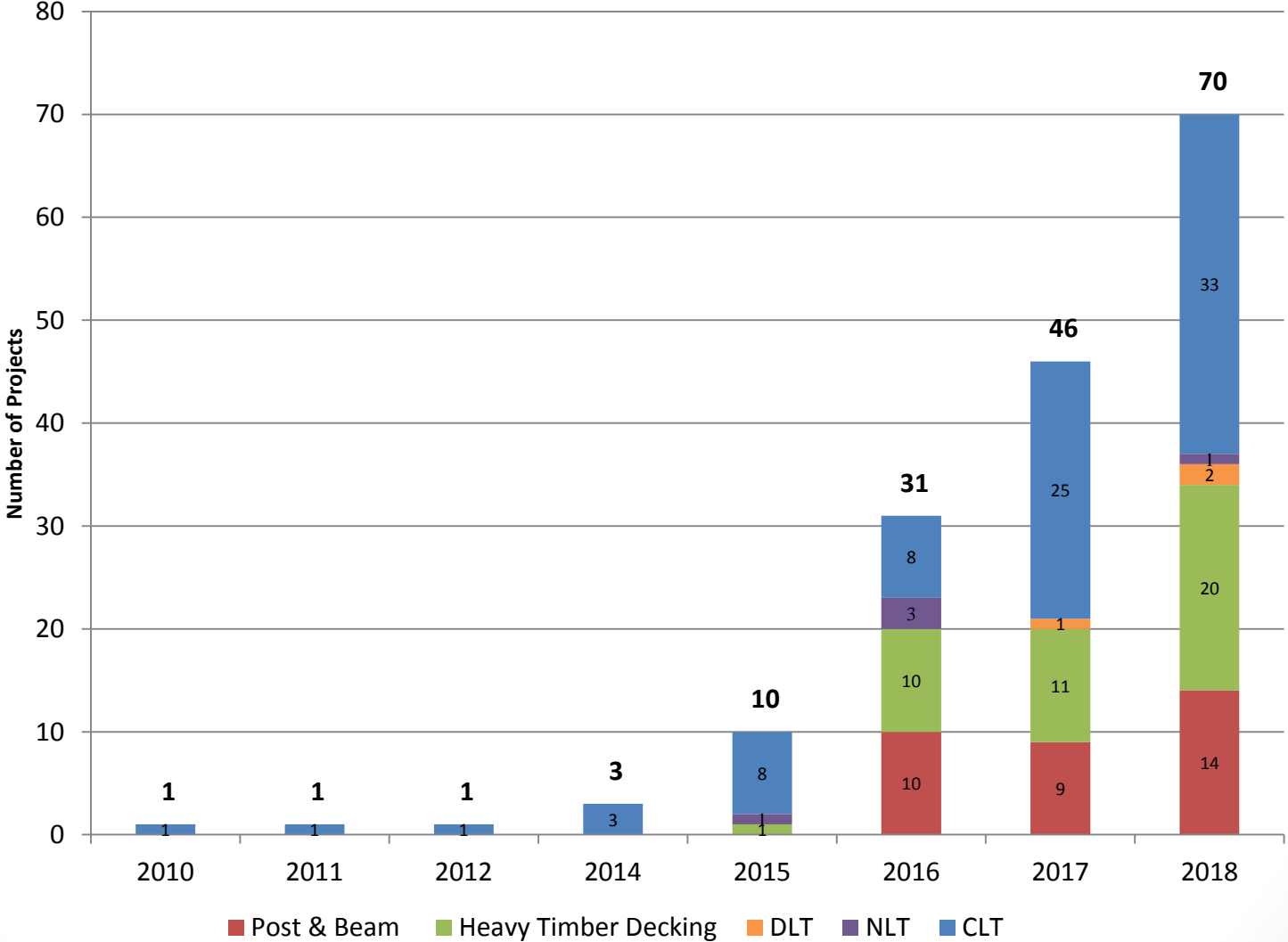
# **NORTH AMERICAN STATE OF THE INDUSTRY - 2019**

# Mass Timber Construction

- *Mass timber is gaining acceptance across the U.S. As of June 2019, 599 multi-family, commercial, or institutional projects had been constructed or were in design in 48 states.* Woodworks.org
- Between 2016 and 2018 total square footage of mass timber projects in the U.S. tripled
- Most significant occupancy types
  - Business/office
  - Multi-unit housing
  - Assembly halls (church, theater, etc.)

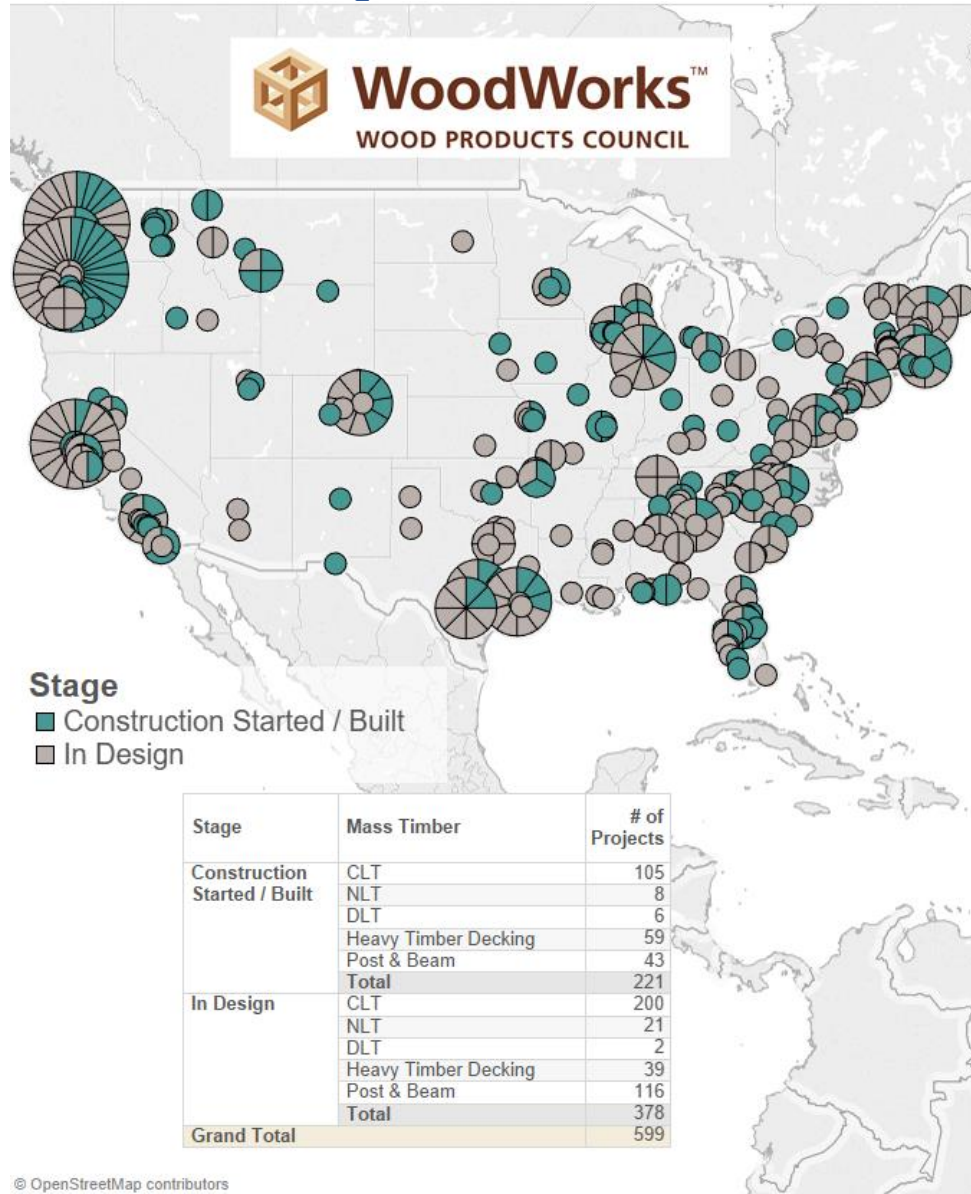


# Growth in Mass Timber Construction



Source: WoodWorks

# Mass Timber Project Locations

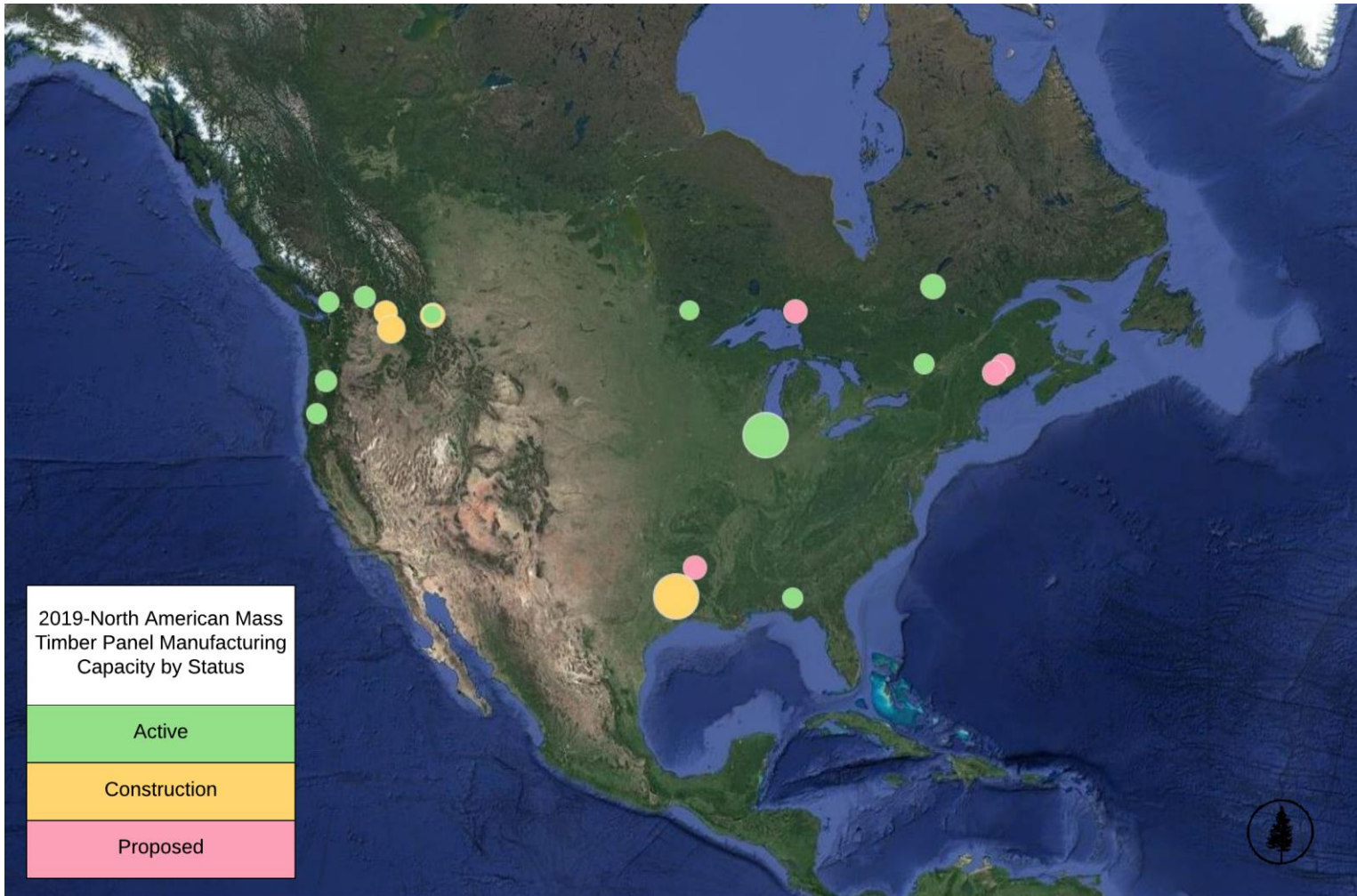


# Mass Timber Panel Manufacturing

Status	Early 2019 Facility Count	Operational Start Dates
Active	10	2007-2018
Construction	4	2019-2020
Proposed	6	2020-2025
Total	20	

- By the end of 2020, manufacturing capacity will have grown more than 10x compared to 2010 levels
- Industrial mats are an important part of overall demand
- Early adopters were in Canada, next wave diversifying across North America with concentration in PNW

# Mass Timber Panel Manufacturers



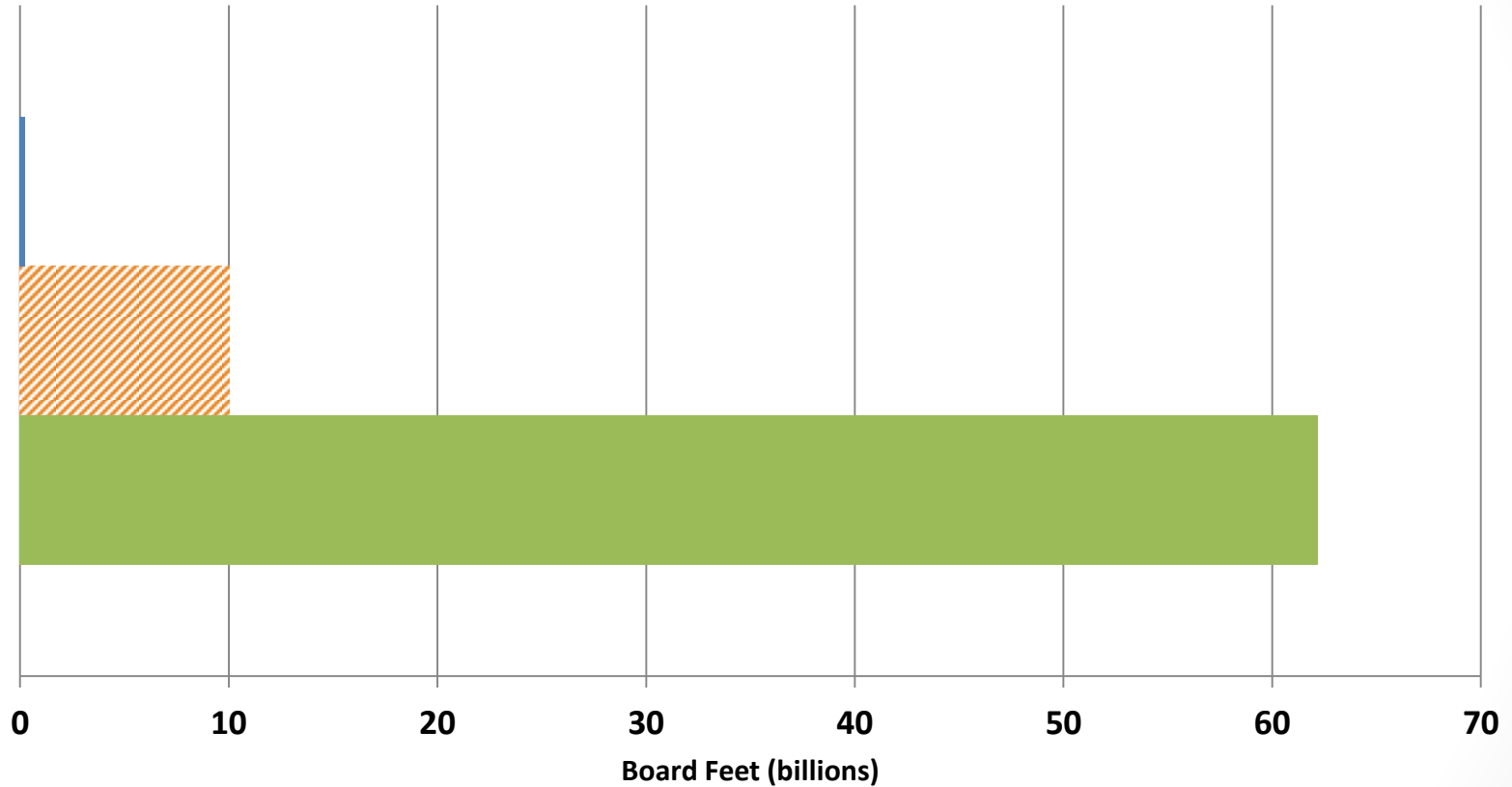
Map: Doug Fir Consulting

# OUTLOOK FOR MASS TIMBER

# Growth and Barriers

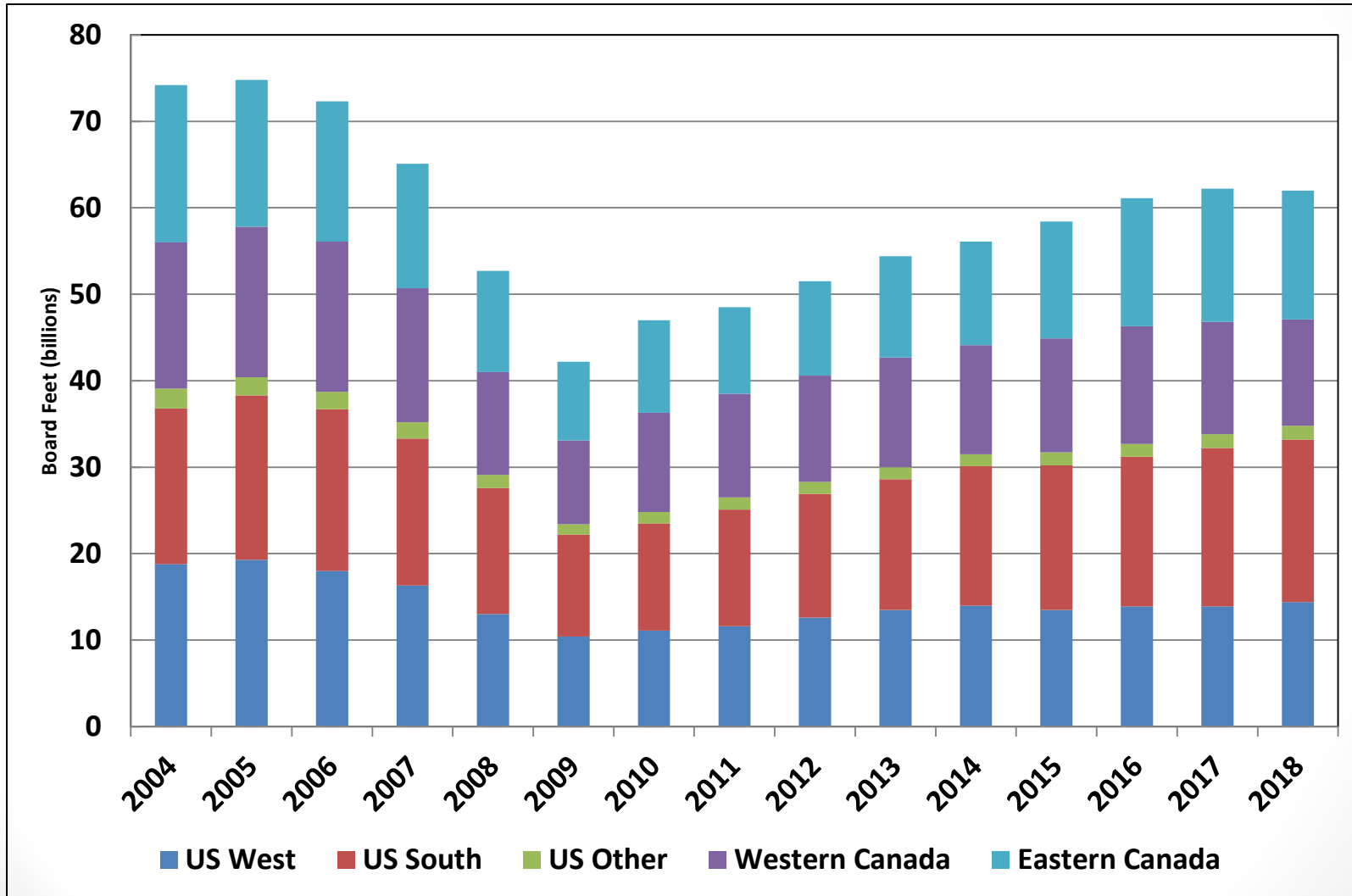
- Building code updates specific to mass timber:
  - 2015 IBC – up to 6 stories
  - 2021 IBC – up to 18 stories (Tall Wood provisions)
  - 2018 – OR and WA proactively adopt Tall Wood provisions
- Barriers to further growth:
  - Lack of education among specifiers
  - Lack of builder experience
  - Limited supply of MTP

# Lumber Demand from Mass Timber



- 2018 Mass Timber Demand
- Potential Mass Timber Demand?
- Total NA Lumber Production

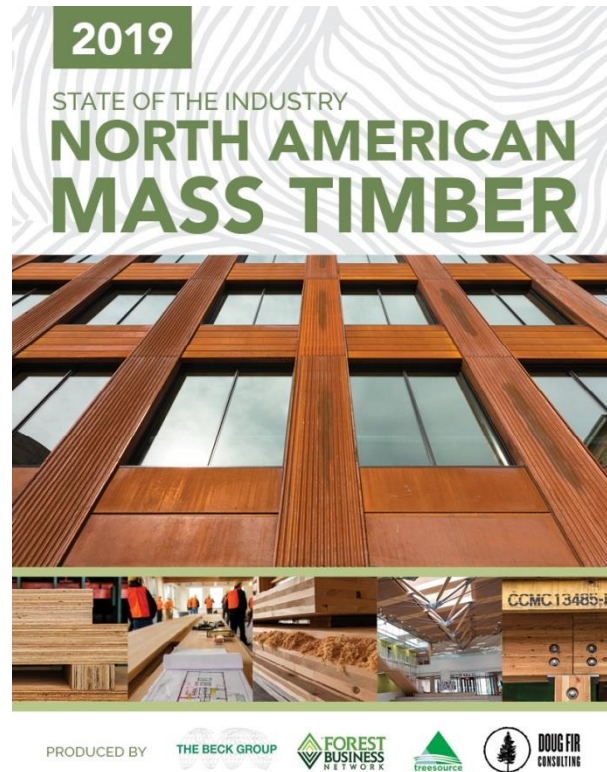
# North American Softwood Lumber Production



Source: Western Wood Products Association



# Questions?



[masstimberreport.com](https://masstimberreport.com)

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