



2018 National Conference & Expo

Greenville, SC

(Un)Conventional Problem Solving – an HMA Member Panel

Panel:

- **Josh Green, Plant Manager - Middle Tennessee Lumber Co.**
- **David Bailey, VP of Operations - New River Hardwoods**
- **Wayne Law, President - New River Hardwoods**
- **Brian Schilling, VP of Engineering - Pike Lumber Co., Inc.**

Moderated by:

Bob Miller, Frank Miller Lumber Co.

Sponsored by: Frank Miller Lumber Company

Question #1

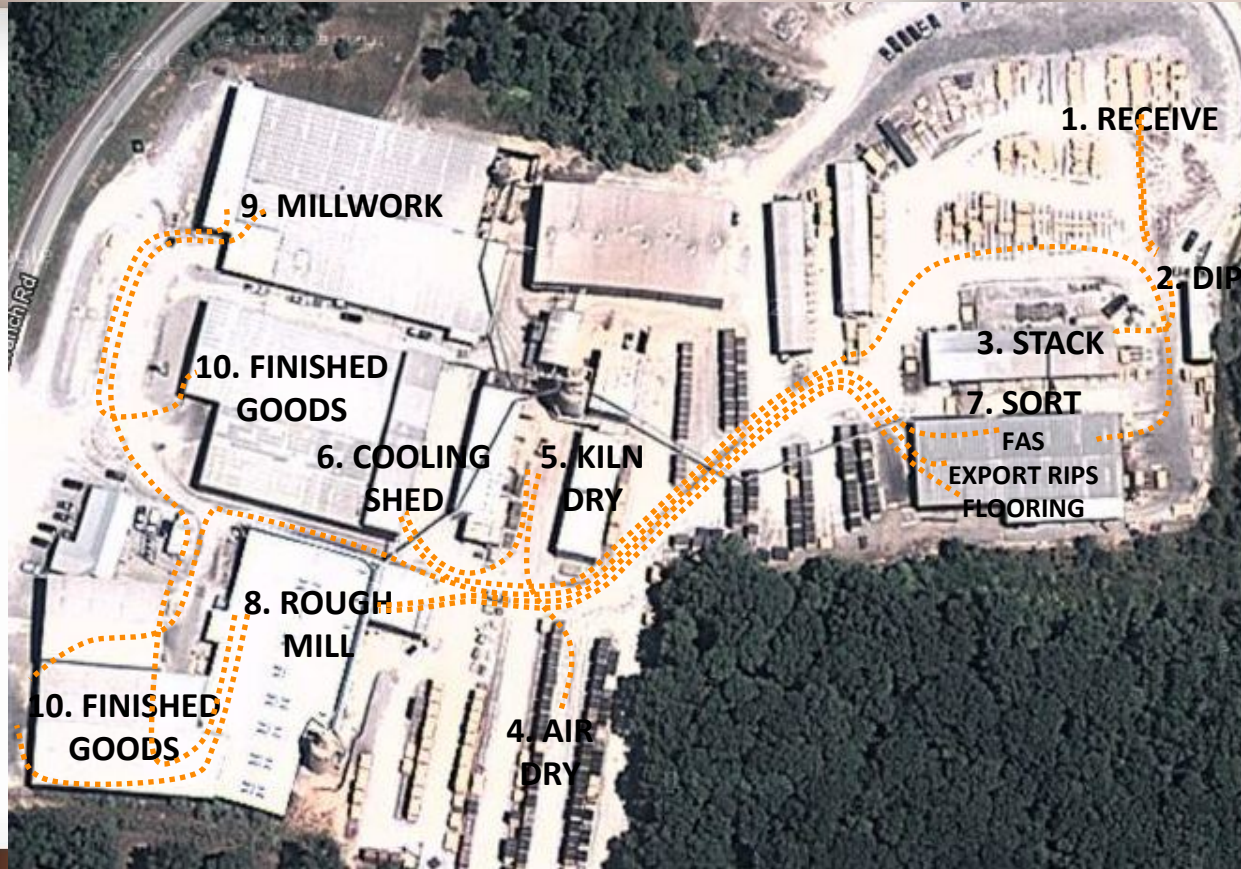
What measurements influenced your company's powers-to-be to move forward with the project?

MIDDLE TENNESSEE LUMBER NEW ROUGH MILL

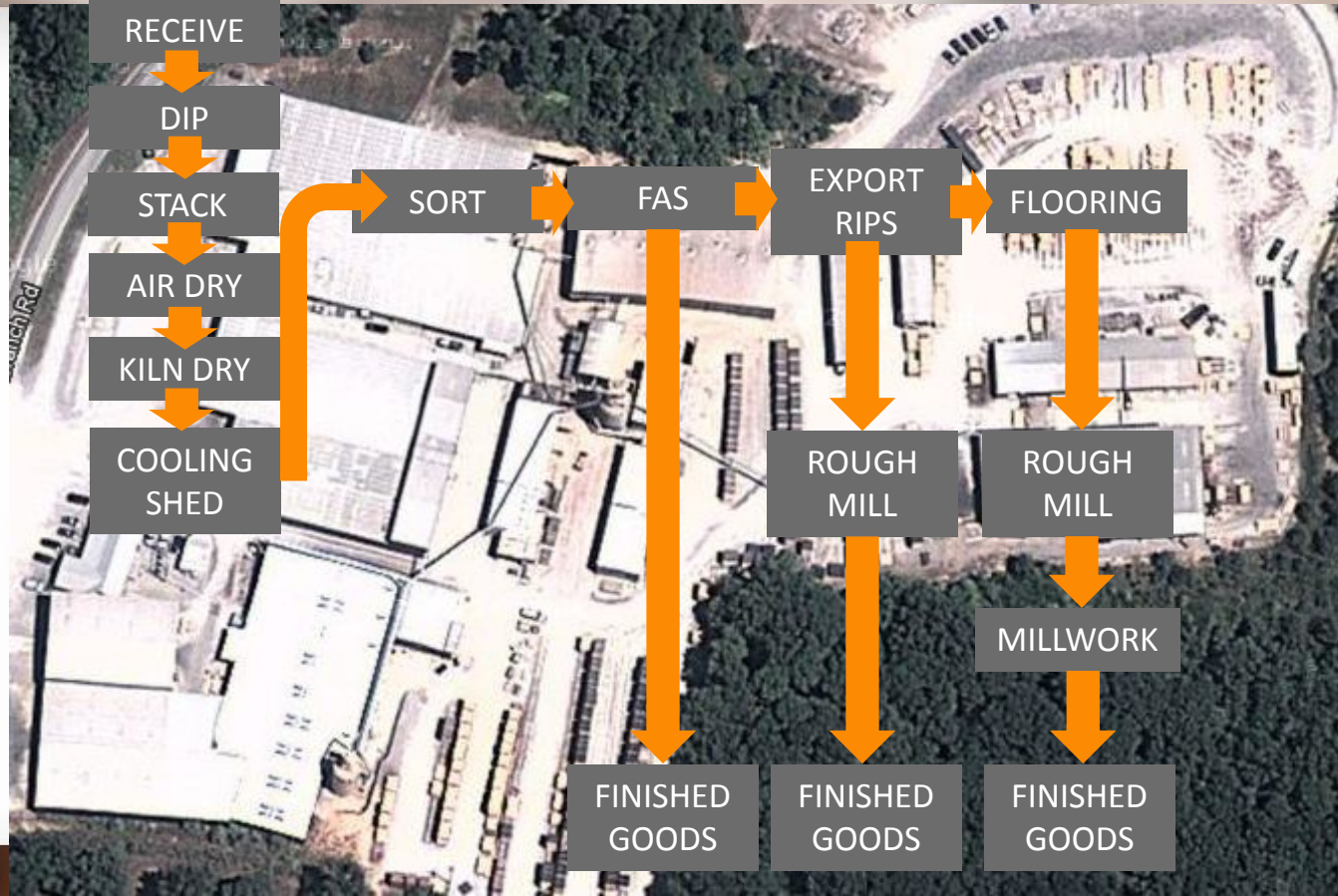
- REDUCED MATERIAL HANDLING
- INCREASED PRODUCT FLEXIBILITY
- INCREASED PRODUCTION
 - 2013 = 3,600 BDFT/HR
 - 2014 PROJECTION = 6,000 BDFT/HR
- IMPROVED COST ALLOCATIONS
 - 2013 = 274 BDFT/LABOR HR (\$59/MBFT)
 - 2014 PROJECTION = 340 BDFT/LABOR HR (\$48/MBFT)
- ELIMINATION OF UNDERUTILIZED COST CENTER
 - \$175,000 LABOR COST REDUCTION
 - \$15/MBFT COST ALLOCATION REDUCTION IN STACKING OPERATION



MIDDLE TENNESSEE LUMBER 2013 – PROCESS MAP



MIDDLE TENNESSEE LUMBER 2013 – FLOW CHART



Slabber Head Addition

What factors lead us down this path?

- Increase production with low risk equipment addition
- No need to add personnel
- Proven technology and performance at similar Appalachian hardwood sawmills
- Low risk of headsaw downtime from slabber head
- Quick anticipated payback

Pike Lumber Co. - Lumber Stacker



Timeline

- 2011 increased mill production capacity 25%
- 2012 conducted studies of 1974 Irvington-Moore stacker
 - Concluded we could meet increased demand







Timeline

- 2014 considering additional 20% increase mill production
 - Considered new increased demand
 - Considered process interruption risk
 - Considered rising labor costs/availability
 - Began research on automatic stick placement stackers
- 2015 Made decision to proceed with new Moco stacker
 - Machinery lead time 15 months
 - Built new building in the fall of 2015
 - Installed machinery in the spring of 2016
 - Pike Lumber staff and local contractors
- 2016 Start up May/June



Question #2

What were the keys for the successful implementation of the project?

MIDDLE TENNESSEE LUMBER KEYS TO SUCCESS

- **VISION**
 - ONE PIECE FLOW
 - MAXIMIZING VALUE
- **DEFINITION**
 - CLEAR GOALS
 - REALISTIC TIMELINE
- **COLLABORATION**
 - MULTIPLE SUPPLIERS
 - MULTIPLE LAYOUTS
- **PATIENCE**
- **HARD WORK**



Implementation Successes and Issues

- Factors for Successes
 - Project design fully analyzed before implementation with vendors.
 - Experience installer with knowledge of equipment
 - Equipment manufacturers on site at start-up
 - Employee buy-in
- Unanticipated Issues
 - Force of 300HP slabber head against carriage
 - Issues with by-product handling
 - Retrofitting issues



NEW RIVER
HARDWOODS, INC.

Important Considerations

- Quality of Product/Process
- Production capacity
- Employee Work Environment
- Safety



May 2016





Automatic Stick Placement



Question #3

Production increases and efficiencies that have been realized versus the original projections?

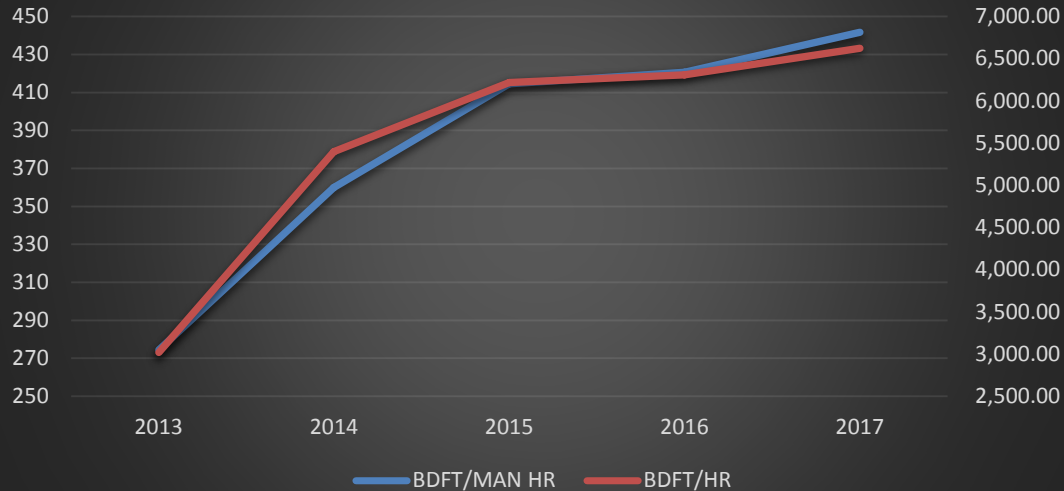
MIDDLE TENNESSEE LUMBER RESULTS VS PROJECTIONS

- **INCREASED PRODUCTION**
 - 2013 = 3,600 BDFT/HR
 - 2014 PROJECTION = 6,000 BDFT/HR
 - 2014 ACTUAL = 5,400 BDFT/HR
- **IMPROVED COST ALLOCATIONS**
 - 2013 = 274 BDFT/LABOR HOUR (\$59/MBFT)
 - 2014 PROJECTION = 340 BDFT/LABOR HR (\$48/MBFT)
 - 2014 ACTUAL = 360 BDFT/LABOR HR (\$45/MBFT)
- **ELIMINATION OF UNDERUTILIZED COST CENTER**
 - DID NOT ELIMINATE (UNREALIZED \$175K SAVINGS)
 - REPURPOSED COST CENTER TO GRADE MORE GREEN LUMBER



MIDDLE TENNESSEE LUMBER PRODUCTION RESULTS

ROUGH MILL PRODUCTION



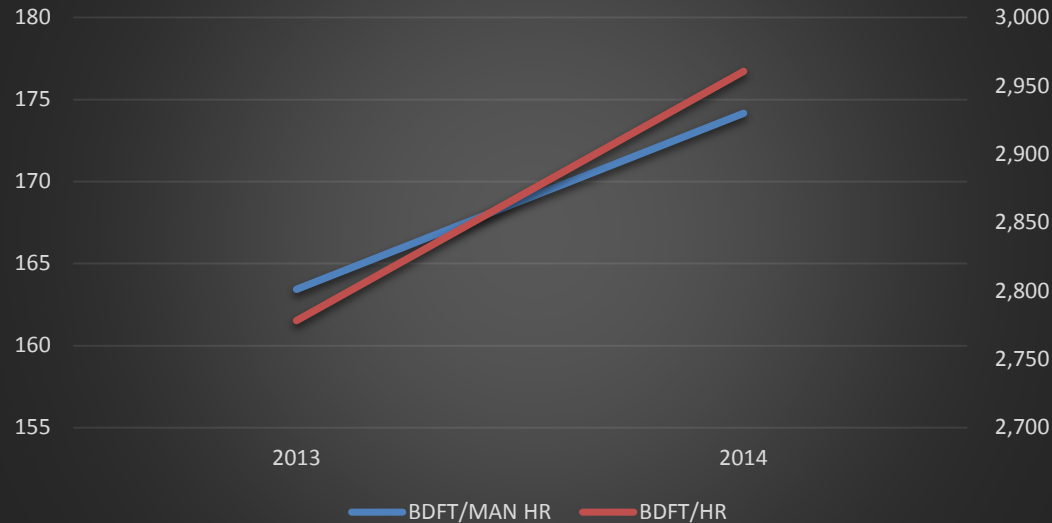
BDFT/HR & BDFT/LABOR HR

- 30% - 1ST YEAR INCREASE
- 60% - 4 YEAR INCREASE



MIDDLE TENNESSEE LUMBER UNEXPECTED RESULTS

FLOORING PRODUCTION



**7% INCREASE IN FLOORING
PRODUCTION BOTH
BDFT/HR & BDFT/LABOR HR**



Operating Results

- Increased 1,000bdft/hr or a 28% increase in production
- Decreased milling rate by greater than \$40/mbft
- Pay Back of 7 to 8 months
- Little to no downtime
- Takes load off of chipper
- Moved production limitations from headsaw to resaw, which created our next project!

Old Stacker

7000 Ft/Hr

1350 Ft/M-Hr

\$18.52/M

New Stacker

9000 Ft/Hr

2235 Ft/M-Hr

\$11.19/M

- 45% of all production costs are associated with labor
 - Labor
 - Health Insurance
 - Payroll taxes
 - Worker's Comp Insurance



Important Considerations

- Start-up Troubleshooting
- 10 % Contingency Budget
 - Catwalk, Stairs, Railing
 - Replaced 25% of Stick Inventory
- 5% Administration Budget



Question #4

Looking back, what would you recommend someone do differently to make the job easier or realize a greater return?

MIDDLE TENNESSEE LUMBER AFTER ACTION REVIEW

- **PROJECT RESPONSIBILITIES**
- **BY PRODUCT MATERIAL HANDLING**
- **BETTER EXAMINATION OF IMPACT ON WHOLE PLANT PROCESS**
- **CALIBRATE EXPECTATIONS OF FUTURE PROJECTS**



Recommendations

- We still fully support decision
- Redesign of by-product material handling
- Understanding potential impact to up and downstream processes
- Handling of swollen or deformed logs





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