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Professional Logging Contractors of Maine

Maine Logger and Log Trucker Employment Availability and Wage Analysis Report Executive Summary

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March 2019**

Background

Recent expansions announced at several mill facilities in Maine, in addition to the potential development of mass timber production facilities located in the state over the next several years, will continue to increase the demand for harvested wood fiber. The logging industry, which contracted following a slew of mill shutdowns in the state over the past decade and was impacted by the severe economic recession in 2008-2009, has been challenged in ramping up production and harvests due to workforce constraints that are intensifying despite rising demand for wood. In addition, the logging workforce is rapidly aging and large numbers of workers will soon be retiring and need replacement. Stagnant or negative population growth and an aging population across Maine, particularly in rural areas, greatly limits the potential pool of workers. Competition for workers across the state is intensifying and reaching crisis levels in many industries, including logging and other manufacturing and production oriented sectors of the economy.

Success in attracting and retaining workers is highly dependent upon the compensation workers can receive for a set of skills in one job compared to another, or for the same job in a different industry. Maine's logging industry has been challenged in offering competitive wages to attract and retain workers and compete against other industries vying for the same dwindling pool of workers. Although capital expenses in the logging industry have risen across the board, prices paid for wood harvesting and trucking have not. This scenario has left little room for businesses to offer higher, more competitive wages to workers or to entice new businesses to enter the industry. If the industry is to meet the projected demand for harvested wood fiber, a significant boost to the logging workforce pipeline will be required, which will largely be dependent on the ability of the industry to pay higher wages that can attract and retain workers in an intensely competitive labor market.

This analysis considers the competitiveness of occupational wages of key logging industry occupations in comparison to other industries competing for similarly skilled labor. We also estimate the relationship between harvested production and labor requirements with respect to announced and planned expansions at mill facilities in Maine and the projected workforce replacement requirements over the next 10 years as older workers age out of the workforce. Lastly, we provide a summary update of estimates of the economic impact of the logging industry in Maine on the state economy in terms of jobs and earnings.

Our analysis relies upon several sources of labor market and occupational wage and employment data to compare wages in key logging occupations to wages of occupations with comparable skill sets and related industries. We report wages by median hourly and wage distributions for the 10th, 25th, 75th, and 90th percentiles. While secondary data reported through government and proprietary sources are limited in the level of occupational detail and do not provide a window into every scenario, they do provide a

robust representation of the competitiveness of wages across similar occupations and industries. A detailed presentation of the employment and wage data is included in an accompanying Data Appendix.

The key findings of this analysis are that the logging industry has a significant impact on the state's economy and is a critical employment base to the state's rural regions. Recently announced expansions increasing demand for wood product will demand an additional 100 jobs in the logging industry in the immediate future. In addition, occupation projections suggest upwards of 200 workers per year will need to be replaced over the next 8-10 years due to an aging workforce. Business critical occupations in the logging industry, including equipment operators and truck drivers which comprise 2 out of every 3 jobs, currently earn relative wages well below comparable occupations in other industries making it difficult to recruit and attract workers. We provide a bulleted summary of key findings of our analysis as follows.

Overview of Labor Force Trends

- The labor market is tight, at technical full employment across the state. Statewide employment numbers have not grown above levels seen 10 years ago (pre-recession). The size of the state's labor force has grown only slightly, about level with pre-recession (2008-09) peaks as unemployment rates have dropped. This has largely been the result of existing populations coming back into the labor force, a source of workers which is close to tapped out.
- Tight labor market conditions are expected to continue, driven by demographic and structural labor force constraints. The demographic trends in Maine suggest a deficit of an estimated 62,000 working age people (16-64) in the state by 2026, holding any migration constant. Tight labor market conditions are more pronounced in industries with specialized skill demands, such as logging and manufacturing, but may not require a formal 4 year college degree.
- Population and workforce challenges will differ regionally. Central and rim counties will be most strained by an aging population and regional and statewide out-migration. More regionally specialized industries, like logging and the broader forest products sector, will be most challenged to attract and retain skilled workers.

Logging Industry Employment and Earnings Trends

- Employment in the logging industry totaled an estimated 3,652 workers in 2018; a decline of 9.4% since 2010.
- Traditional employment (paid employees) continues to make up the bulk of jobs in the industry, while self-employed (non-employers) workers comprise a little over 1/3 of all workers. (Does not include proprietary income earners). Self-employed workers declined by 70 jobs between 2010 and 2018 (-5.2%) while traditional employment declined by about 300 jobs or -11.6% over the same period. While traditional employment has been on a slow decline, self-employment has been a bit more cyclical reaching a peak of 1,588 jobs in 2015 before falling back to current levels.
- Regional employment continues to be concentrated in the northern rim and Penobscot counties, where industry-wide wages are typically also highest.
- The average earnings for all employment in Maine's logging industry has increased by 5% since 2010, an average increase of just over \$2,100 per worker compared to an average increase of \$5,500 in comparative industries, such as construction, wood manufacturing, and pulp and paper manufacturing.

- Average earnings in the logging industry peaked in 2015 and have fallen over the last several years following a pattern of declining prices for wood fiber products delivered to mills in Maine.¹

Logging Industry Occupational Wage Profile²

A summary of logging industry occupations can be found in Table 3 in the Data Appendix. A full list of reported logging industry occupations can be found in Table A1 of the Data Appendix. We focus on two key occupations that make up the bulk of the business critical occupations in the industry for which occupational data is reported; Logging Equipment Operators and Heavy Truck Drivers. Virtually all Logging Equipment Operators work in the Logging industry, while Heavy Truck Drivers work in a number of industries with only a small share employed in Logging. To capture wage comparisons across industries for Heavy Truck Drivers, we use a special dataset from the US Bureau of Economic Analysis that reports wages for an occupation by industry, which is not available elsewhere. The data reported from this dataset is slightly different than data reported for other occupations in this report. The value of using this data is we are able to compare relative wages across industries for the same occupation - Heavy Truck Drivers.

The skill sets of Logging Equipment Operators and other Logging industry occupations are often transferable or easily adaptable to occupations in other industries. Workers may be enticed to make a ‘lateral’ move to an occupation which pays higher wages for their same skill set than is earned in the Logging industry. Therefore, we also report key findings for key occupations in the Pulp and Paper Manufacturing industry and for Sawmill Operators. In addition, we consider the wages of occupations with comparable skill sets as those related to Logging Equipment Operators.

We report wages as the median hourly wage and the range for which 80% of workers earn wages - this reflects the 10th and 90th percentile wage range reported in the occupational statistics.

Logging Equipment Operators

- Over half of employment in the logging industry falls under Logging Equipment Operators, which include such jobs as Loader, Yarder, Skidder, Log Processor, Feller-Buncher, and Delimber Operators among others.
- In comparison to other occupations with transferable skill sets in other similar and production-oriented industries, Logging Equipment Operators earn significantly lower wages posing a competitive disadvantage for the Logging industry in recruiting and retaining workers,
- The median hourly wage in 2018 for this occupational category was \$16.47 per hour. Eighty percent of jobs earned between \$12.35 and \$23.08. The range of hourly earnings reflects the various jobs and respective pay levels.

¹ A recent report by the James W. Sewall Company titled “Historic and Predicted Wood Costs in Maine for Selected Species and Products” December 2018 prepared for FOR/Maine found that mill delivered rates for various pulpwood products peaked in 2015 and fell in subsequent years following mill closures. While prices for hardwood pulpwood are predicted to rise steadily through 2022, prices for spruce-fir pulpwood and other softwood pulpwood are predicted to remain relatively flat from 2017 prices, both well below price levels from just a few years ago.

² Occupational data for earthwork and excavation workers in the Logging industry are not reported in any data sources. There is occupational data for Excavating and Loading Machine and Dragline Operators (SOC 53-7032) across all industries in Maine, which had a median hourly wage of \$18.70 per hour.

Heavy Truck Drivers (Chip and Log Truck Drivers)

- The median hourly wage for truck drivers in the Logging industry in 2017 was \$15.23, while 80% of workers earned between \$9.31 and \$19.00.
- Compared to the numerous other industries employing heavy truck drivers, truck drivers in logging earn among the lowest wages.
- For example, truck driver wages in growing industries such as Merchant Wholesalers (Eg. Walmart) had a median hourly wage of \$21.60, while 80% of all workers earning between \$14.71 and \$27.91 in 2017.
- Median hourly wages in the Truck Transportation industry, which includes businesses that provide trucking services contracted by other industries (Eg. Nestle Corp. / Poland Springs), were \$20.72 in 2017 with 80% of all workers earning between \$10.06 and \$31.21.
- Workforce shortages of truck drivers are well documented nationally and in Maine. The Maine Department of Labor projects an average of 984 annual openings for Heavy Truck Drivers across all industries in the state, through 2026, due primarily to replacements of retiring workers and job exiters.

Sawmill Operators

- The median hourly wage for Sawmill Operators in 2018 was \$15.08 across all industries. Eighty percent of workers earned between \$10.86 and \$23.02 per hour.

Pulp and Mill Operator and Technologist Occupations

- Virtually every occupation in Pulp and paper Manufacturing earn wages well above Logging Equipment Operators, with the lowest paid job (Helpers - Production Workers) earning a median hourly wage of \$19.43. Wages of a selection of machine operator occupations specific to the Pulp and Paper manufacturing industry are as follows.
- Packaging and Filling Machine Operators earned a median hourly wage of \$24.73 in 2018 with 80% of workers earning between \$12.48 and \$30.12 per hour.
- Mixing and Blending Machine Operators earned a median hourly wage of \$25.27 in 2018 with 80% of workers earning between \$19.86 and \$34.39 per hour.
- Cutting and Slicing Machine Operators earned a median hourly wage of \$25.79 in 2018 with 80% of workers earning between \$17.02 and \$30.33 per hour.
- Coating, Painting, and Spraying Machine Operators earned a median hourly wage of \$27.33 in 2018 with 80% of workers earning between \$21.00 and \$35.67 per hour.

Projected Labor Demand

Labor market demands are comprised of not only additional capacity from expanding mill operations in the state demanding greater harvesting of wood fiber, but also a function of the aging and older skewed workforce that currently exists. As older workers age out of the workforce, they will need to be replaced. Currently, there is a critical shortage of younger aged workers currently in the industry to offset the retirements of older aged workers. Key findings are highlighted below.

- An average of 1 job in the logging industry supported the harvesting of 3,925 tons of wood, inclusive of sawlogs, pulpwood, and biomass, between 2010 and 2017 (Harvested Tons per Job).

- Several expansions have been announced beginning in 2018 at the Verso mill in Jay, Nine Dragons mills in Rumford and Old Town, and Pleasant River which collectively will add about 340 jobs at those facilities.³
- These expansions will in turn require just over 100 jobs in the logging industry above current levels once full expansions and operations are reached. 52 jobs will be in various logging equipment operator positions and about 25 heavy truck drivers, among other supporting and general/administrative jobs in the industry.
- Under the assumption that a new cross laminated timber manufacturing facility producing 50 MBF at full capacity will be cited in Maine, an estimated 29 additional jobs in logging will be needed.
- The age composition of the logging industry workforce skews significantly older than other production oriented industries, including manufacturing.
- Sixty-two percent of logging industry workers are 45 or older, compared to 55% for all production employment and 50 percent for all industries.
- The average wage for all worker classes in Maine’s logging contractor industry increased by 9% since 2001, however wages for self-employed workers dropped by 21% over the period.
- Over 400 workers in the industry are in retirement age (65+), while 850 workers will be reaching retirement age within the next 10 years. Attracting younger generations of workers will be critical in replacing the retiring workforce. Likewise, there is a disproportionately smaller share of younger age workers (25-44) able to offset the aging older cohorts.

Comparison of Current Employment Levels to 2014 Economic Impact Report

- The 2014 Economic Impact Report by Dr. Mindy Crandall at the University of Maine estimated the total direct employment in the logging industry (harvesting) to be 4,632 jobs which supported another 2,711 jobs indirectly and induced. These estimates include proprietor income and supported employment, which are not easily reflected in public secondary data. As a result it is difficult to compare current employment estimates reported in our analysis directly to the impact estimates from the 2014 report.
- We use an input-output model developed by Economic Modeling Specialists Inc (EMSI) that relies on industry spending patterns provided by the US Bureau of Economic Analysis (BEA)

³ These figures are sources from news reports quoting anticipated jobs reported by respective companies.
<https://observer-me.com/2018/04/19/pleasant-river-lumber-awarded-4-2m-grant-for-12m-project-in-d-f-company-conducting-20m-expansion-between-two-mills/>
<http://www.mainebiz.biz/article/20180720/NEWS01/180729998/verso-to-upgrade-jay-mill-for-specialty-papermaking>
<https://www.prnewswire.com/news-releases/verso-announces-strategic-investments-in-its-androscoggin-mill-in-jay-maine-300682841.html>
<https://www.pressherald.com/2018/02/15/verso-to-restart-no-3-paper-machine-bringing-back-120-jobs/>
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<http://www.mainebiz.biz/article/20181011/NEWS01/181019991/nd-paper-to-buy-and-reopen-old-town-mill-restoring-100-jobs>
<http://www.mainebiz.biz/article/20180702/NEWS01/180709996/new-owner-of-rumford-paper-mill-will-retain-workers-eyes-investment>

Regional Input-Output Modeling System II (RIMS II) dataset, which is the basis of the IMPLAN model used to estimate the 2014 economic impact estimates for the logging industry.

- Based on 2018 data, an estimated 4,927 jobs were directly supported by traditional (paid employee), self-employed, and proprietor income employment. This supported another 3,266 jobs from indirect and induced spending impacts.
- In addition, a total of \$320,824,489 in earnings (compensation) were supported by direct, indirect, and induced employment from the logging industry.
- The direct employment estimates here differ from employment figures reported elsewhere because these data include proprietor income which covers jobs that represent miscellaneous labor income for persons who do not consider it a primary job. Includes minor or underreported self-employment, investments trusts and partnerships, certain farms and tax-exempt nonprofit cooperatives. This employment is typically only considered for economic impact modeling purposes and not reported in standard employment (QCEW covered or non-employer self-employed) statistics.