

An Assessment of the Economic Contribution of Pulp, Paper and Converting to the State of Wisconsin

Paul Fowler & Ron Tschida
March 8th 2019



CONTEXT



MANUFACTURING | PLANT INVESTMENT

Amcor Flexibles unwraps \$25 million expansion project

JUDY NEWMAN | jnewman@madison.com Sep 30, 2018



Expera sale to Ahlstrom-Munksjo now complete in Kaukauna

Maureen Wallenfang, Appleton Post-Crescent Published 11:22 a.m. CT Oct. 10, 2018



(Photo: Wm. Glasheen/USA TODAY NETWORK-Wisconsin)

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KAUKAUNA - Ahlstrom-Munksjo completed its purchase of Expera Specialty Solutions Tuesday \$615 million. The sale was first announced July

More: Expera Specialty Solutions, formerly knv as Thimamy, sold in Kaukauna

The 135-year-old Expera specialty paper mill at 600 Thimamy Road, previously as Thimamy Pulp and Paper Co., will be renamed Ahlstrom-Munksjo. Between corporate offices and mill operation, it has about 700 employees.

"This is great news for Outagamie County," said county executive Tom Nelson "Ahlstrom-Munksjo is an industry leader respected around the globe."

'A new beginning' as Appleton Coated renamed Midwest Paper Group

Maureen Wallenfang, USA TODAY NETWORK-Wisconsin Published 2:47 p.m. CT April 18, 2018 | Updated 11:04 a.m. CT April 19, 2018



(Photo: Danny Damiani/USA TODAY NETWORK-Wisconsin)

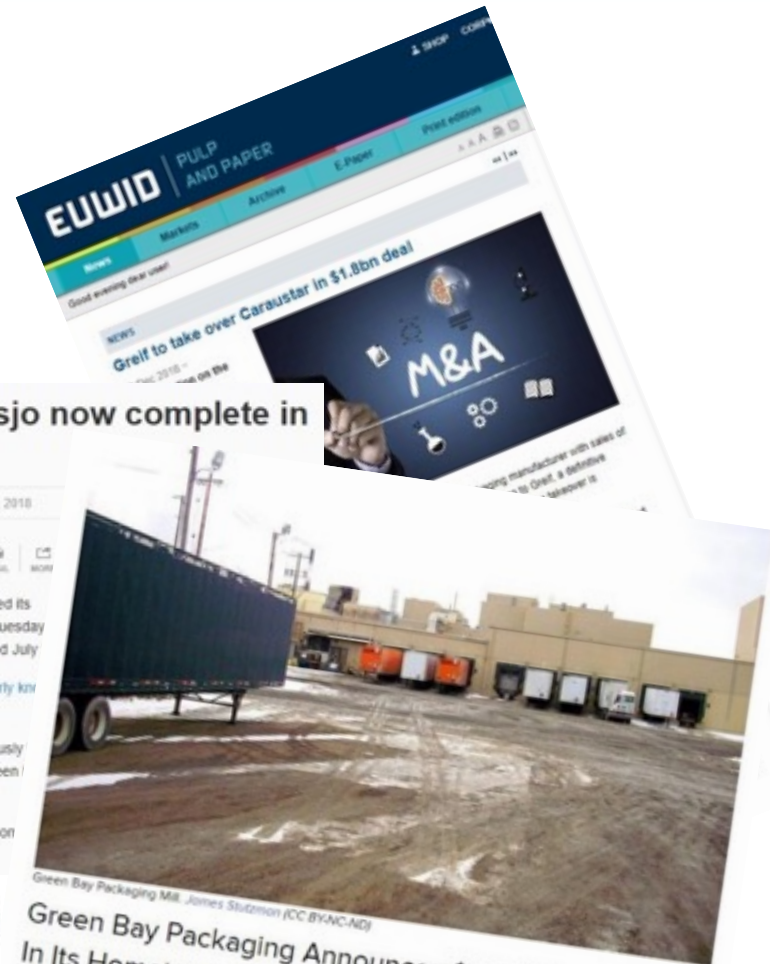
COMBINED LOCKS - Appleton Coated, a 129-year-old paper mill all but given up for dead last October, is now been given a new name as it gets back up to speed. [Full screen](#)

It's now called Midwest Paper Group.

A look inside the Midwest Paper Group Mill

And while the mill still makes writing and printing papers, its warehouse is now filled with brown paper re-ship and become the fluted part of corrugated cardboard.

The company had been shut down in September as it went through receivership proceedings. It's been back to life in phases since December when its improbable new owners decided to restart the mill rather



Green Bay Packaging Announces \$500M Investment In Its Hometown

Paper Company's New Mill Will Be City's Largest Private Investment To Date
By Patty Murray
Published: Tuesday, June 12, 2018, 12:30pm



ND Paper to expand Biron mill in \$189 million investment, add 27 new jobs

Caitlin Shuck, Wisconsin Rapids Daily Tribune | Published 10:35 a.m. CT Oct. 8, 2018



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(Photo: Melissa Siegel/USA TODAY NETWORK/Alamy.com)

BIRON – The Biron paper mill is expected to expand after a multi-million-dollar investment from its parent company.

ND Paper, a U.S.-based subsidiary of Nine Drago Paper, will commission several projects, investing \$189 million in the Biron mill, according to a news release from ND Paper. The mill currently employs 350 people – all of whom will keep their jobs. The Biron mill plans to add 27 additional jobs, said company officials.

The company will invest a total of \$300 million over the next two years into its new Wisconsin and Maine mills and add a total of 77 new jobs between both sites. Catal announced in May it agreed to sell its Rumford, Maine and Biron mills to ND Paper.

Kimberly-Clark and state reach \$28 million deal to keep Cold Spring open

VIDEO: \$28M deal keeps Kimberly-Clark in Fo...



By Jason Zimmerman and WBAY staff | Posted: Thu 10:11 AM, Dec 13, 2018 | Updated: Thu 11:14 PM



MEENAH, Wis. (WBAY) – Kimberly-Clark will keep its Cold Spring facility in Fox Crossing open...

The personal care product company and Wisconsin Economic Development Corporation agreed to terms on a five-year agreement. It gives Kimberly-Clark \$28 million in tax incentives. The deal is contingent on job retention, capital investment and supply chain purchases.

As part of the agreement, Kimberly-Clark must retain 388 jobs at a yearly payroll of over \$30 million through 2023 (read the complete statement from the governor's office below).

The company has agreed to invest up to \$200 million in the facility over five years.

Also, Kimberly-Clark promises to spur \$56 million in supply chain business.

Gov. Scott Walker said, "This isn't some short term thing. This is about savings. OK."

Appvion Completes Sale to Lender Group Led by Franklin Advisers

Paper Industry Veteran and Longtime Director George W. Wurtz III
Appointed Chief Executive Officer
Former Appvion Executive Jim Tyrone Named Senior Vice President
Sales and Marketing
New Collective Bargaining Agreements with United Steelworkers Union
Reached as Part of Sale

NEWS PROVIDED BY
Appvion, Inc. →
Jun 13, 2018, 04:52 ET



APPLETON, Wis., June 13, 2018 /PRNewswire/ -- Appvion (the "Company") today announced completion of the sale of substantially all of the Company's assets to a group of its lenders led by Franklin Advisers, Inc. (the "Purchaser"). The transaction will significantly reduce Appvion's debt, provide additional liquidity, and better position the Company to compete long-term in the evolving specialty paper market and further invest in the innovation that has made it a market leader.

As previously announced, the sale was approved by the U.S. Bankruptcy Court for the District of Delaware on May 31, 2018. The total consideration was approximately \$365 million, plus the assumption of substantial liabilities, including many of the Company's contractual obligations.



RESOURCE RECYCLING
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China allows in more paper but still stonewalls plastic

Posted on October 23, 2018
by Colin Staub

Although Chinese scrap plastic import permits remain scarce, the government has ramped up the volume of recycled paper it is allowing into the country to levels not seen since March.

The Chinese government generally issues permits twice per month, approving a certain amount of scrap material for import into the country.

The Ministry of Ecology and Environment (MEE) on Oct. 18 issued its 22nd round of import permits for the million metric tons of recovered fiber. It comes after three months of permit volumes in the range of 300,000 to 800,000 metric tons.

In all, the Chinese government has approved 18 million metric tons of recovered fiber for import this year.

On the plastics side, the last few rounds of permits have brought the lowest consecutive volumes of the year. When the MEE issued permits on Sept. 19 and Sept. 26, plastic wasn't included. Last week, a mere 203 metric tons of scrap plastic were approved for import.

Overall, 47,000-metric tons of scrap plastic have been approved for import into China this year.

The latest U.S. Census Bureau figures also continue to show smaller and smaller volumes of U.S. scrap plastic heading to the world's most populous country. In August, U.S. exporters sent 4.3 million pounds of plastic to China, the lowest volume of any month in 2018.

Most post-consumer plastics have been officially banned from import into China since the beginning of this year. Chinese leaders have stated they will prohibit amounts of post-industrial plastics beginning next year.

U.S. exports of recovered paper to China have remained relatively consistent throughout the year, averaging 608,000-metric tons per month. The August number – 629,000 metric tons – is in line with that average.

The bulk of U.S. scrap paper exports are made up of OCC. Exporters sent 502,000 metric tons of OCC to China in August, and they sent just 4,500 metric tons of mixed paper. This trend is a stark difference from August 2017, when the U.S. sent 450,000 metric tons of OCC and 202,000 metric tons of mixed paper to China.

GOALS OF STUDY



Goals of study

- Overview of Wisconsin's pulp and paper industry – and placing in context of pulp and paper industry nationwide
- Other states that have significant economic impacts in paper industry
- Statewide economic impact of Wisconsin's paper industry
- Quantify size and number of paper manufacturing companies in the state
- Overview of paper product converting done in Wisconsin
- Opportunities and challenges for paper industry in Wisconsin
- Employment growth and skill transfer opportunities
- National/global trends in markets for products manufactured
- Growth opportunities in current paper industry as well as growth opportunities if technologies can be pivoted
- Academic institutions support paper industry whether via research or via training
- Current research and research trends in paper industry
- Patent activity in paper industry



Sources of information for study

- American Forest & Paper Association
- American Survey of Manufactures
- Bureau of Economic Analysis
- Bureau of Labor & Statistics
- Company reports
- County Business Patterns
- IMPLAN
- Informal correspondence
- Face-to-face Interviews
- Media reports
- Survey
- Telephone interviews

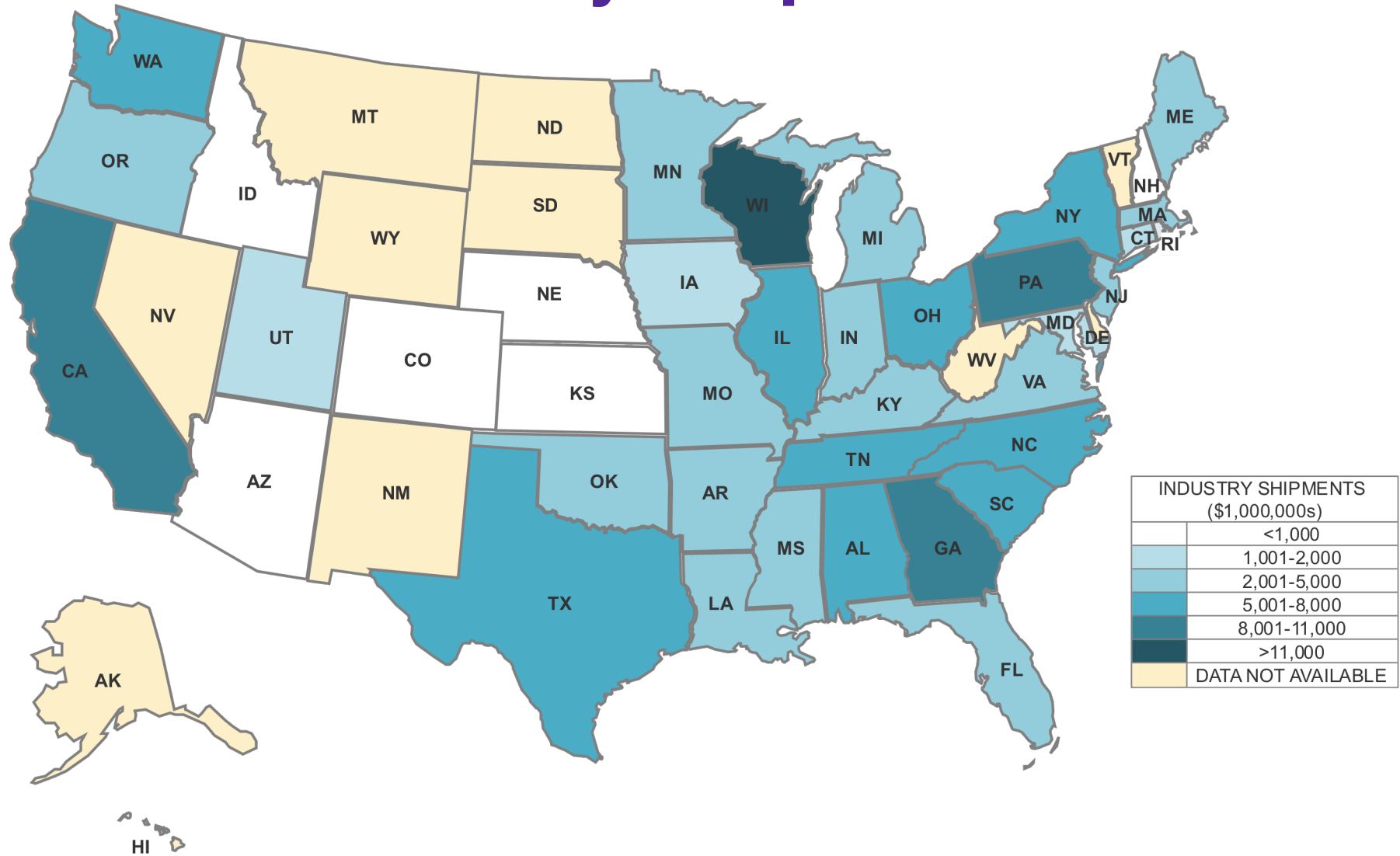


RESULTS

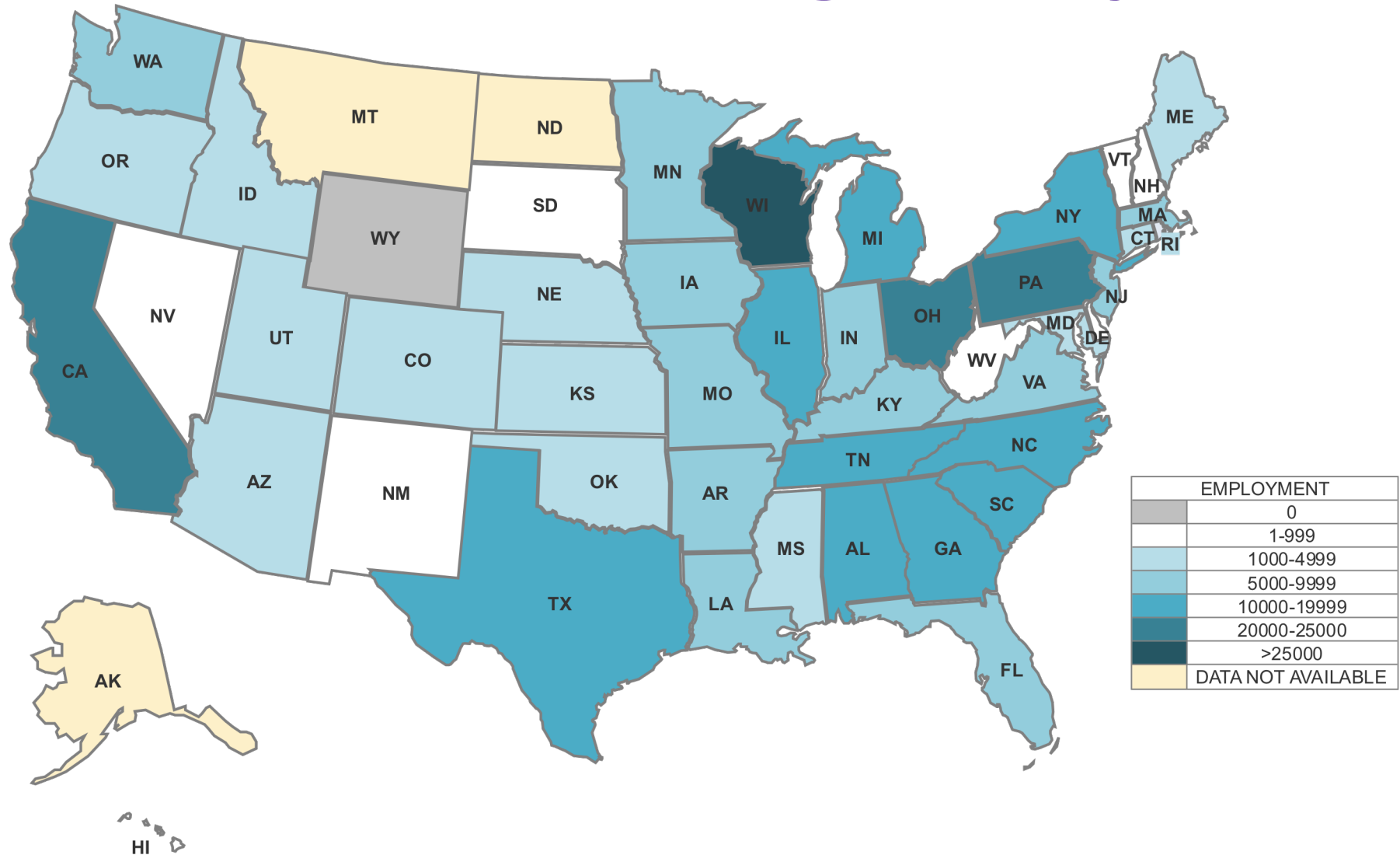
WISCONSIN IN THE NATIONAL CONTEXT



Industry shipments



Paper manufacturing employment



Wisconsin paper manufacturing employees in context of national workforce

Wisconsin's paper manufacturing industry employs:

- **0.7%** of all pulp mill workers
- **16.7%** of all paper mill workers
- **2.3%** of all paperboard mill workers
- **4.7%** of all paperboard container manufacturing
- **10.4%** of all paper bag & coated & treated paper manufacturing
- **4.8%** of all stationery product manufacturing
- **10.4%** of all sanitary paper product manufacturing
- **7.0%** of all other converted paper product manufacturing

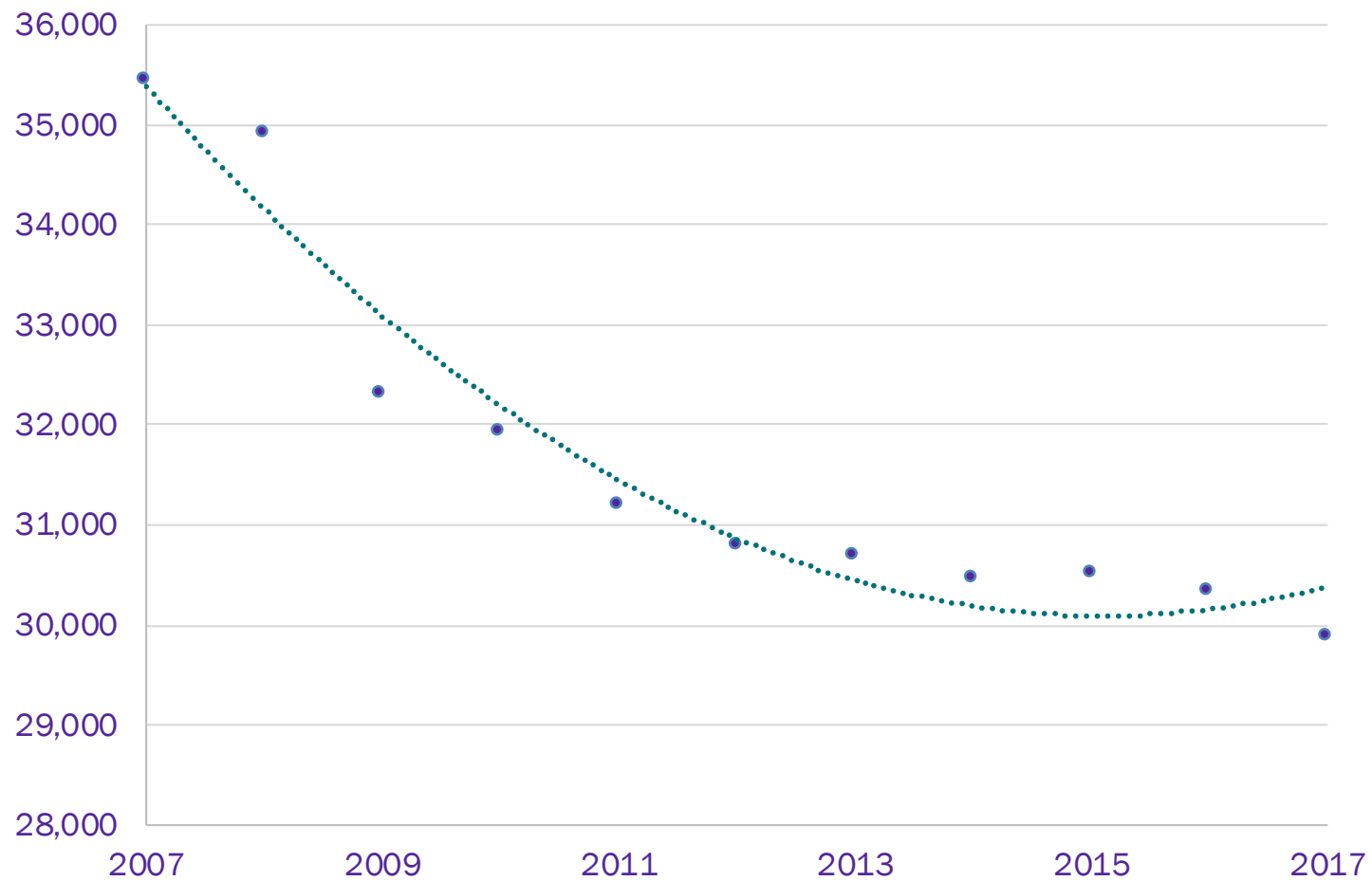


RESULTS

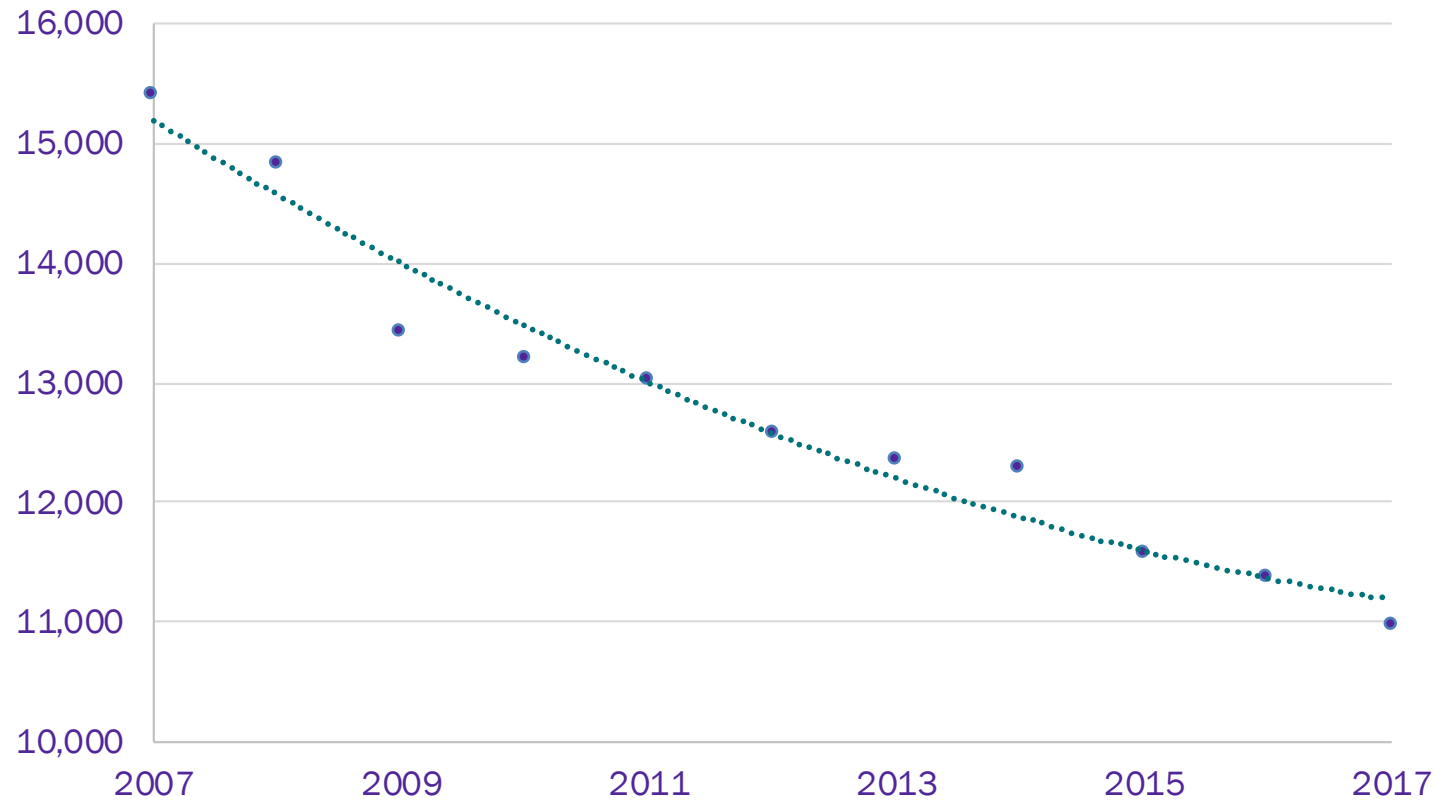
WISCONSIN TRENDS



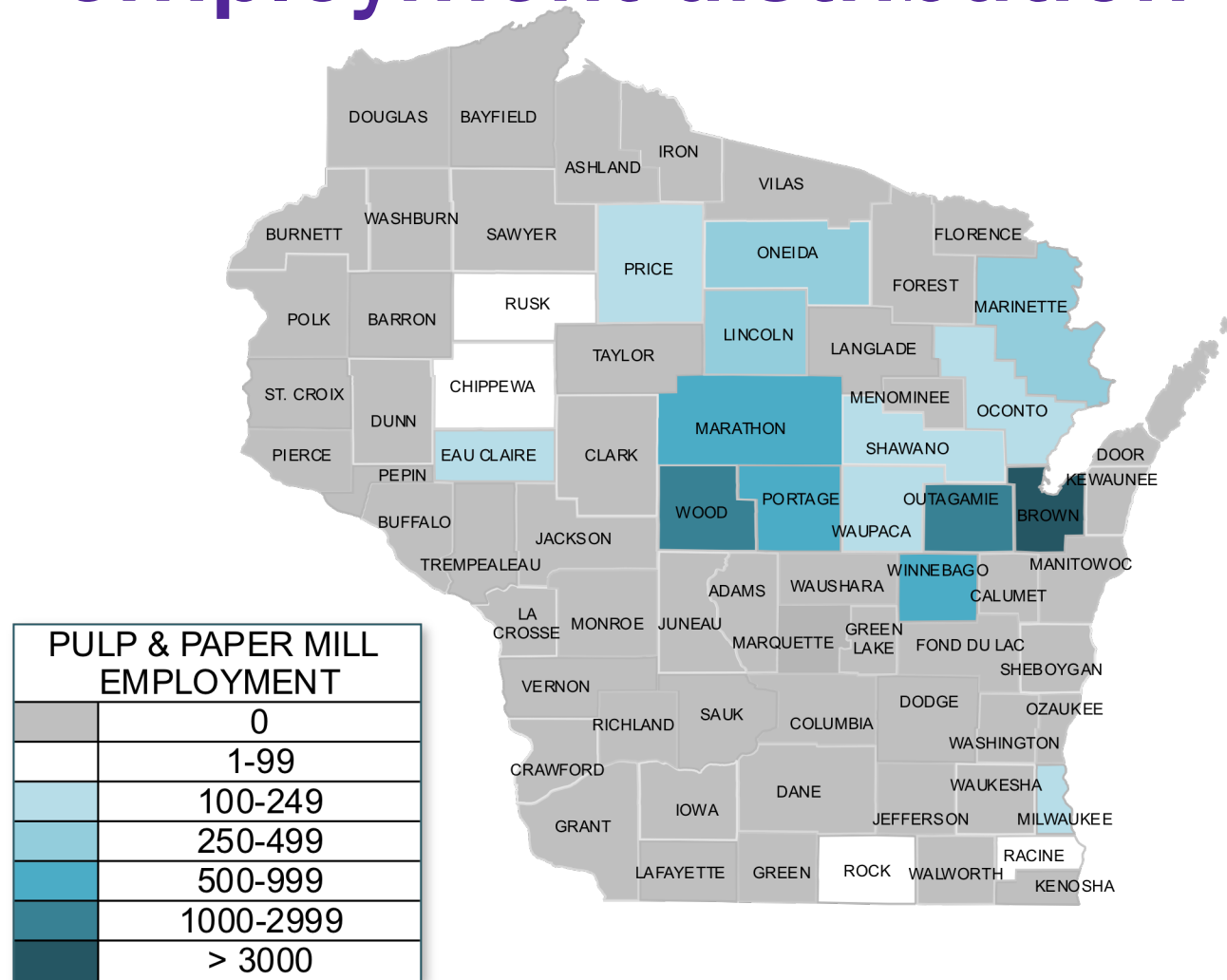
All paper manufacturing employees



Pulp, paper and paperboard mill employees



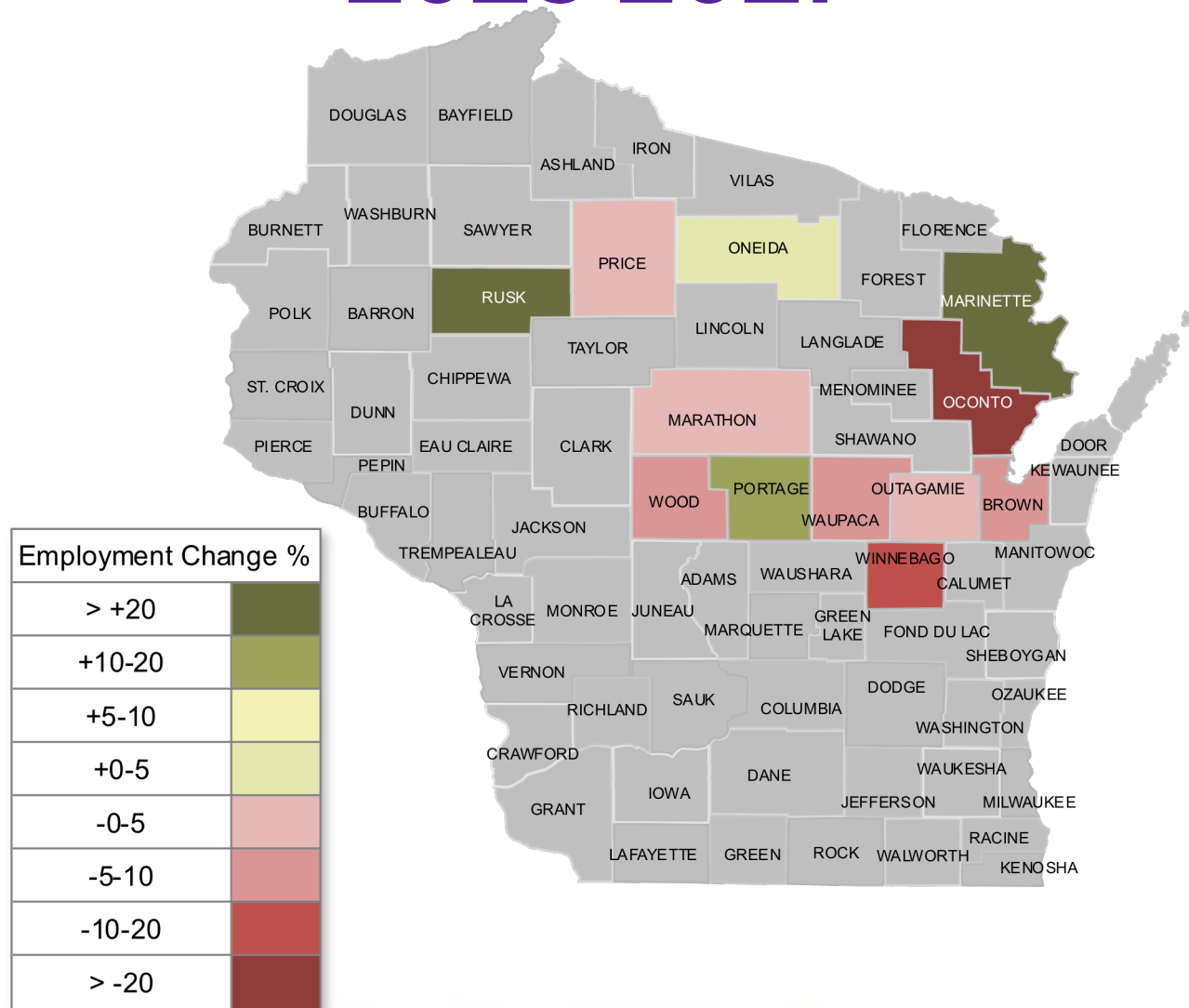
Pulp, paper & paperboard mill employment distribution



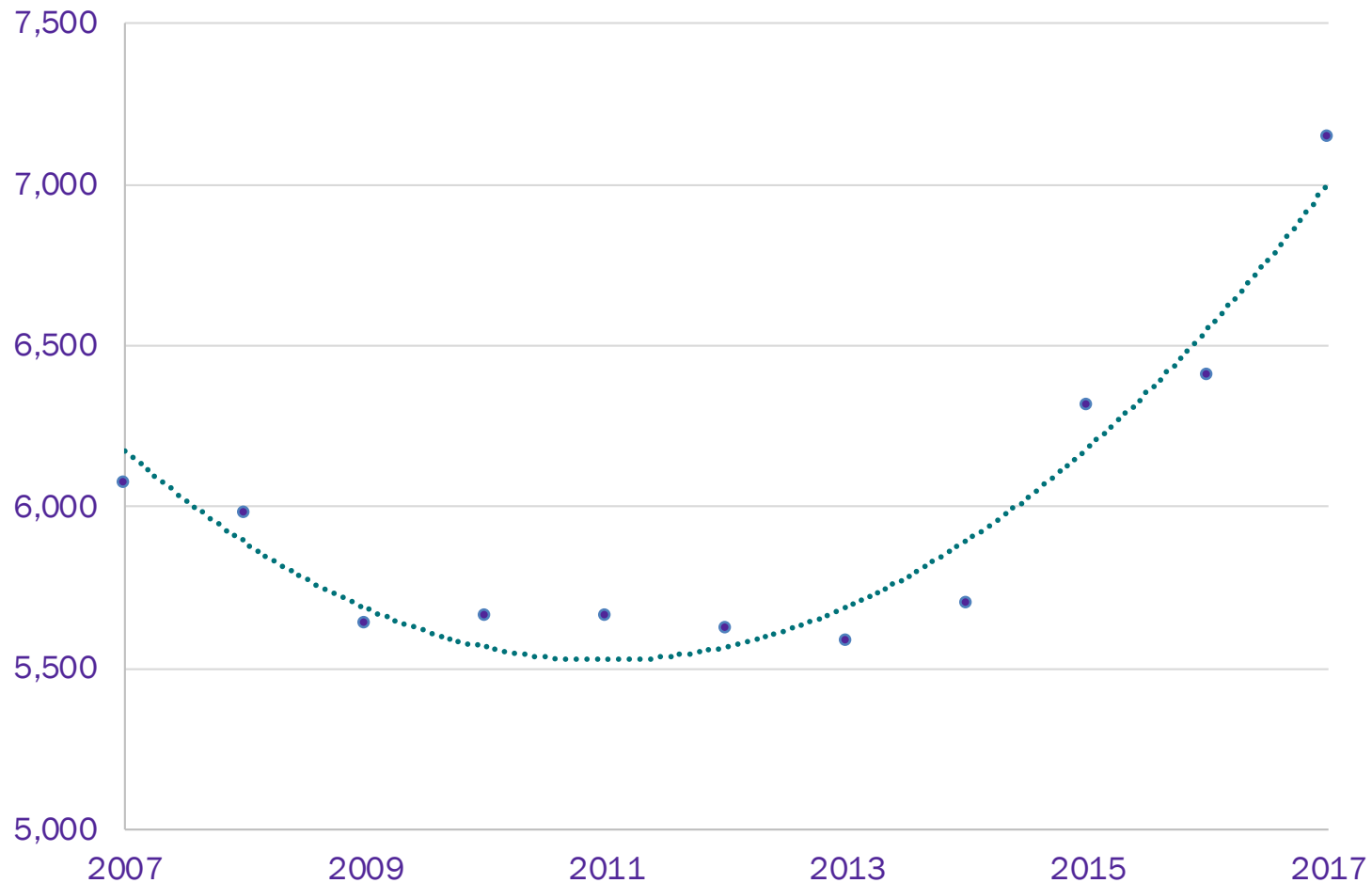
PULP & PAPER MILL EMPLOYMENT	
	0
	1-99
	100-249
	250-499
	500-999
	1000-2999
	> 3000



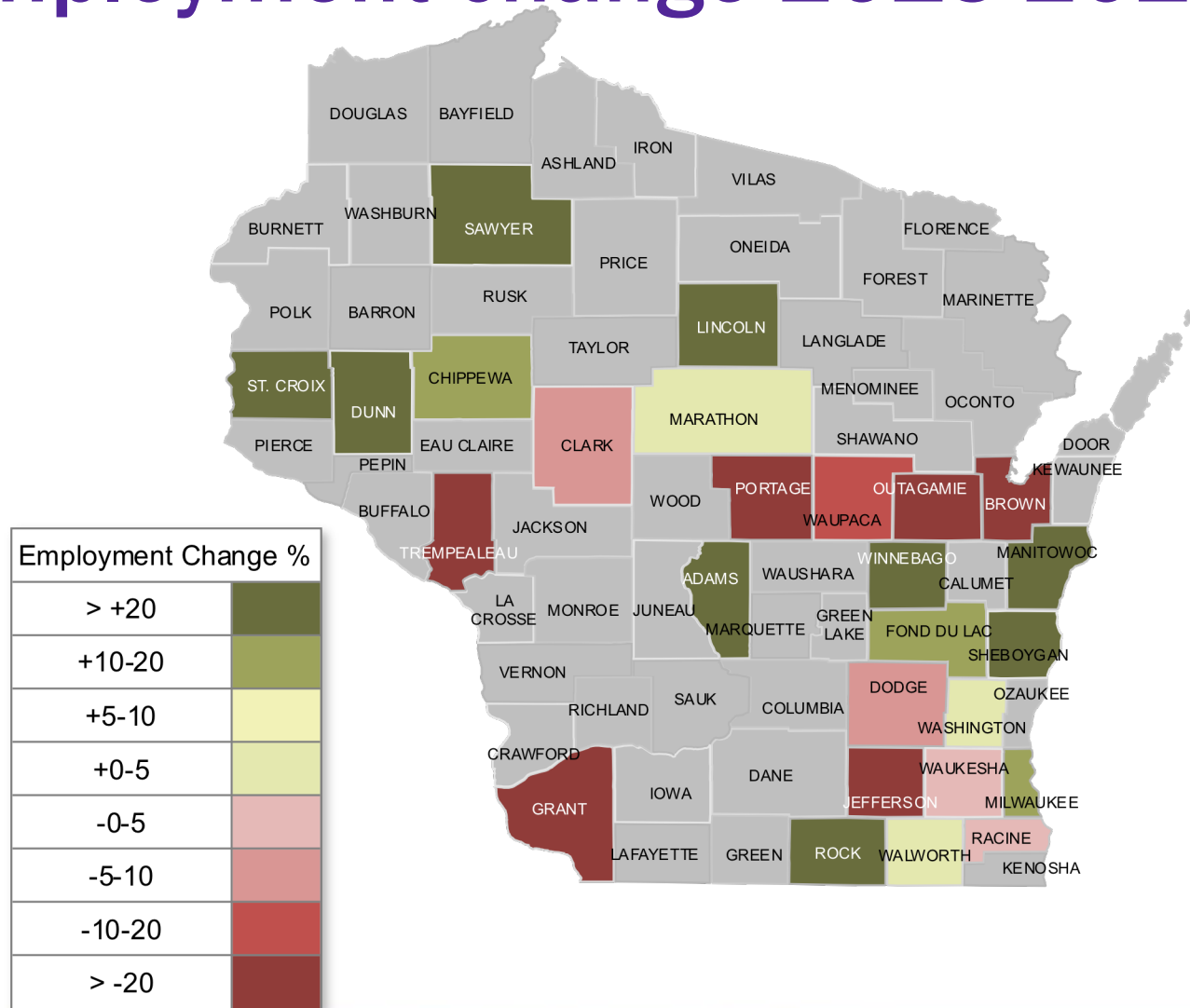
Paper mill employment change 2015-2017



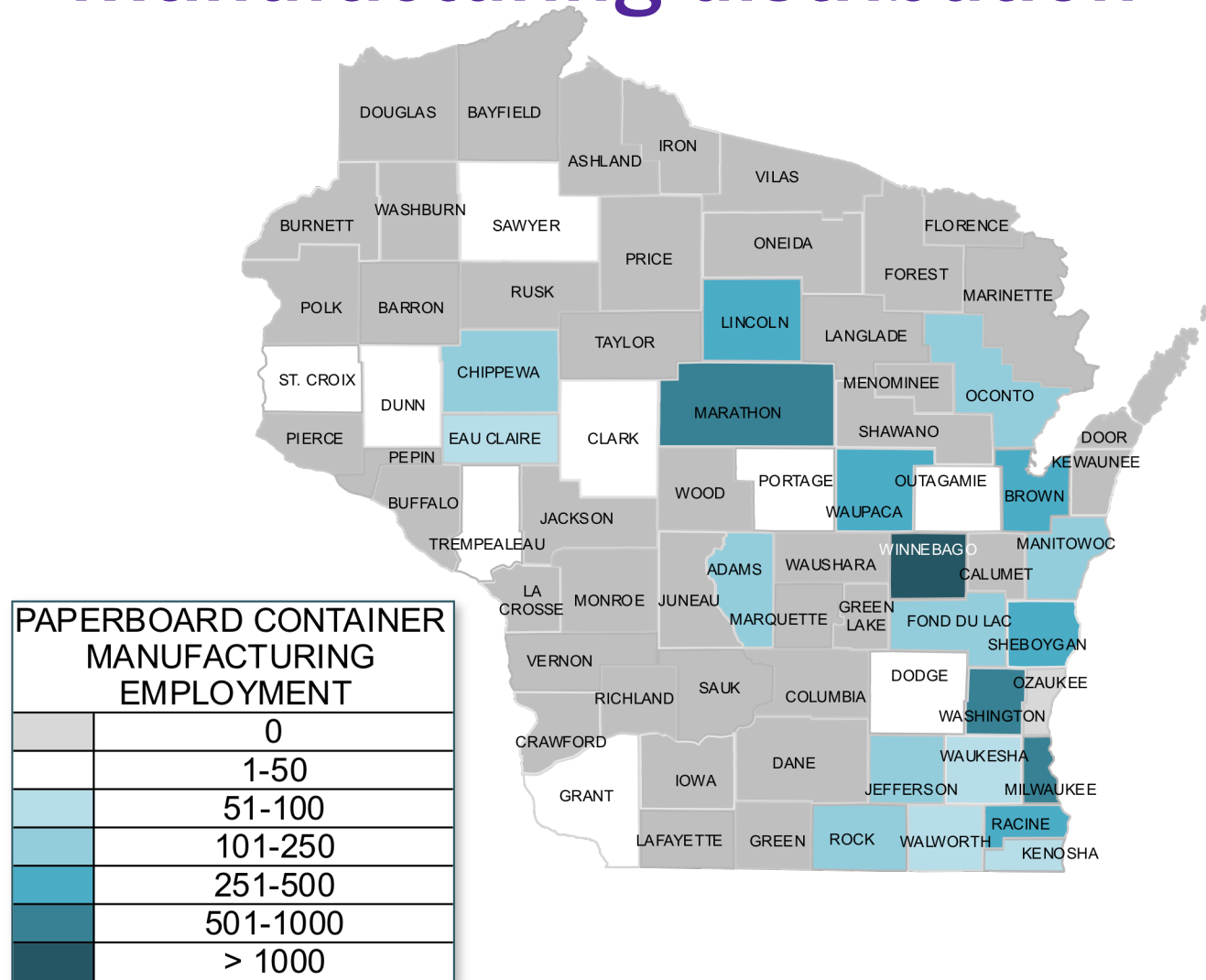
Paperboard container manufacturing employees



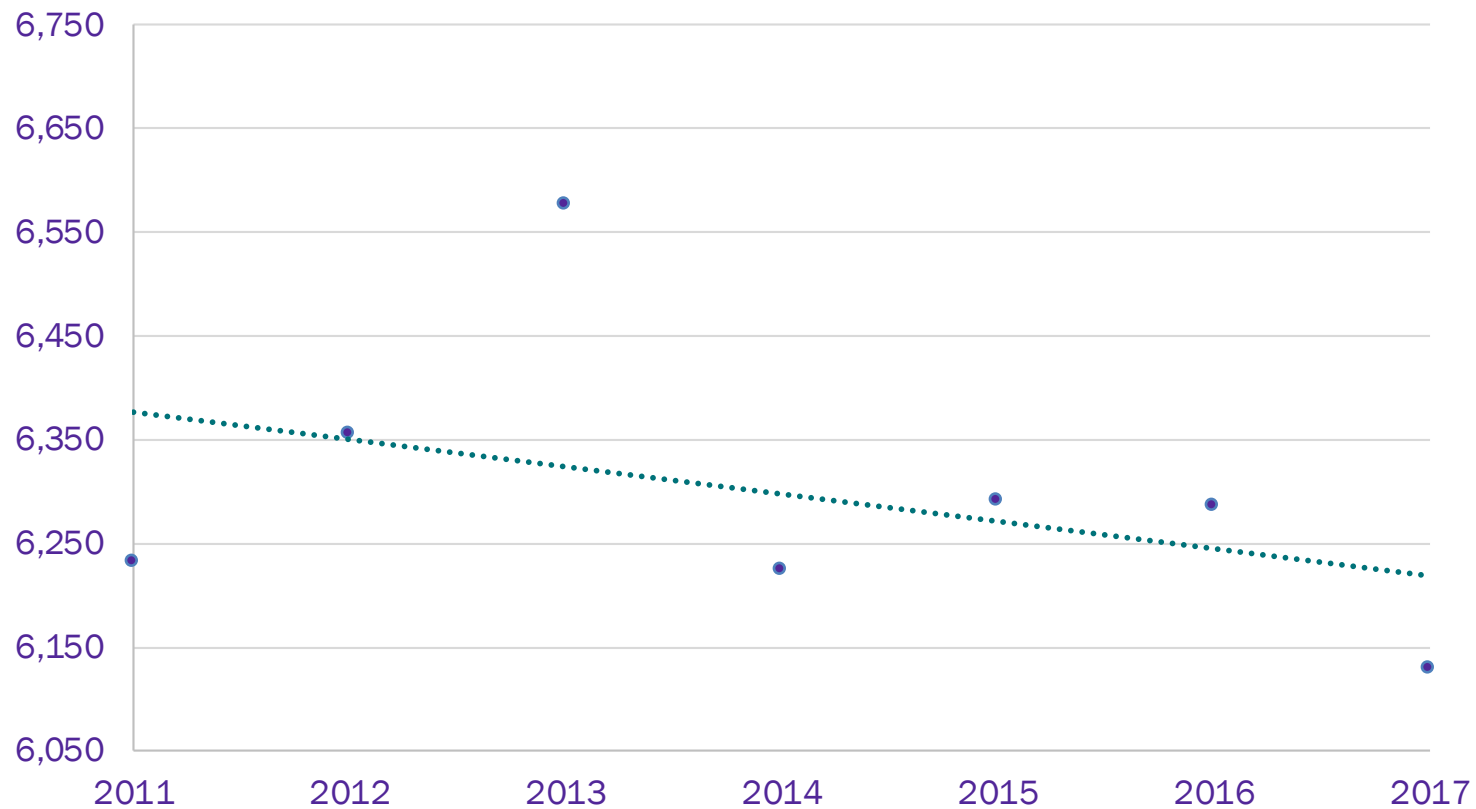
Paperboard container manufacturing employment change 2015-2017



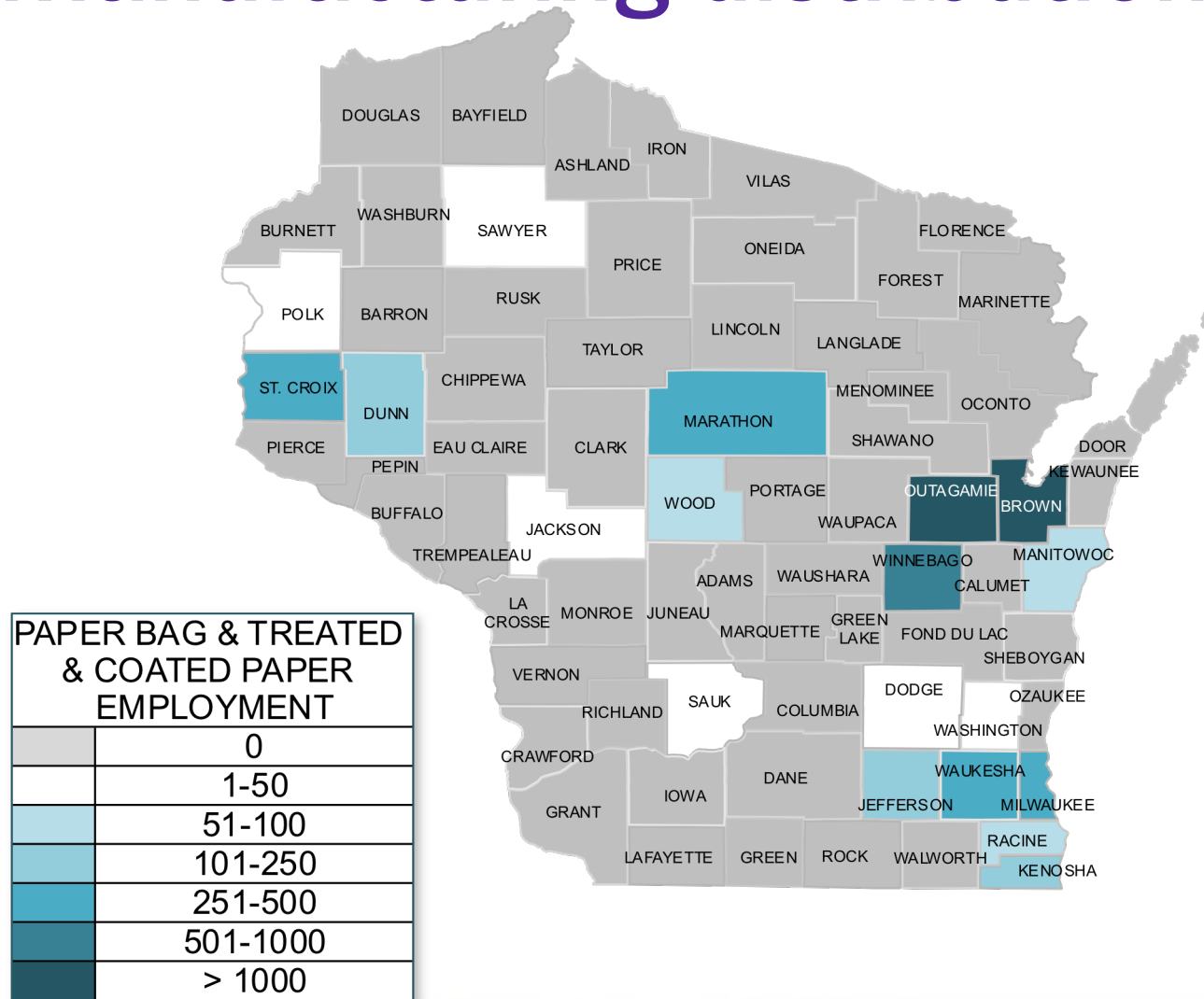
Paperboard container manufacturing distribution



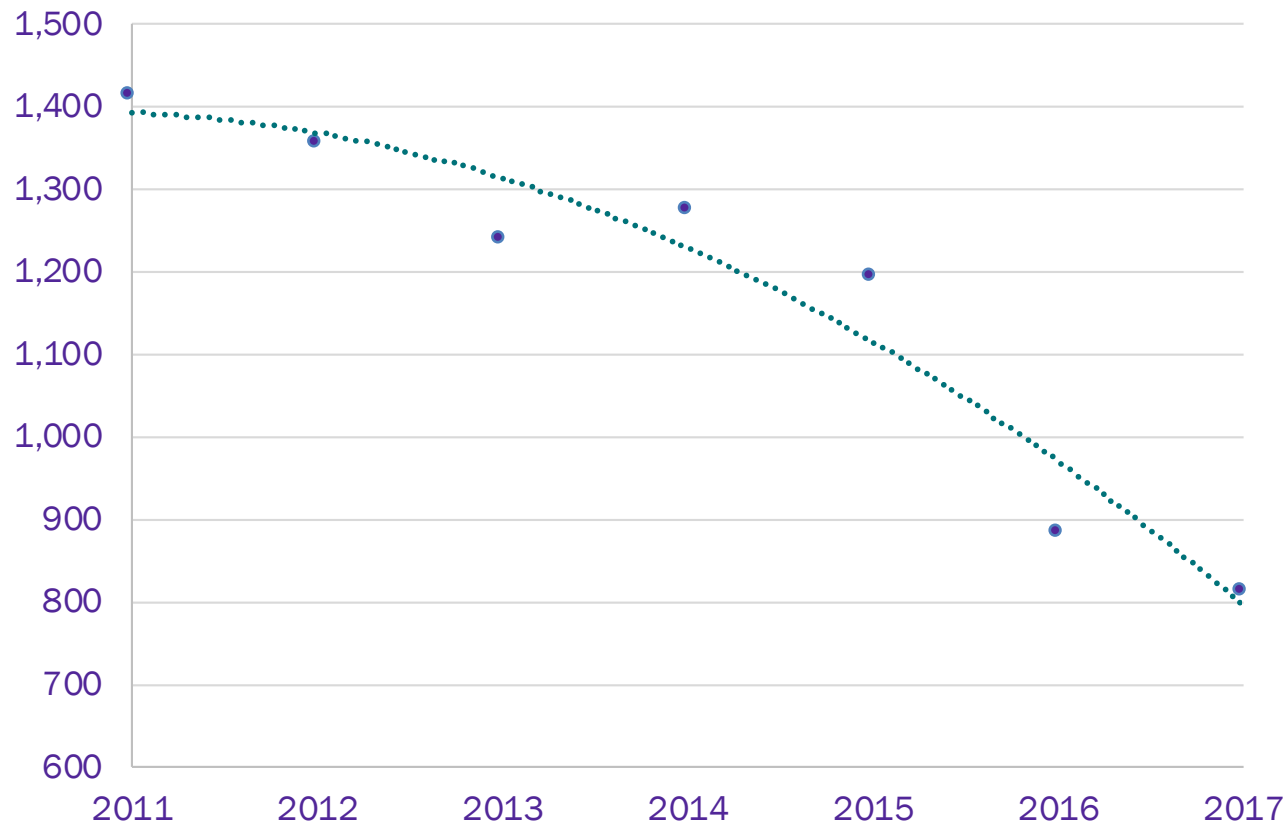
Paper bag & coated & treated paper manufacturing employment



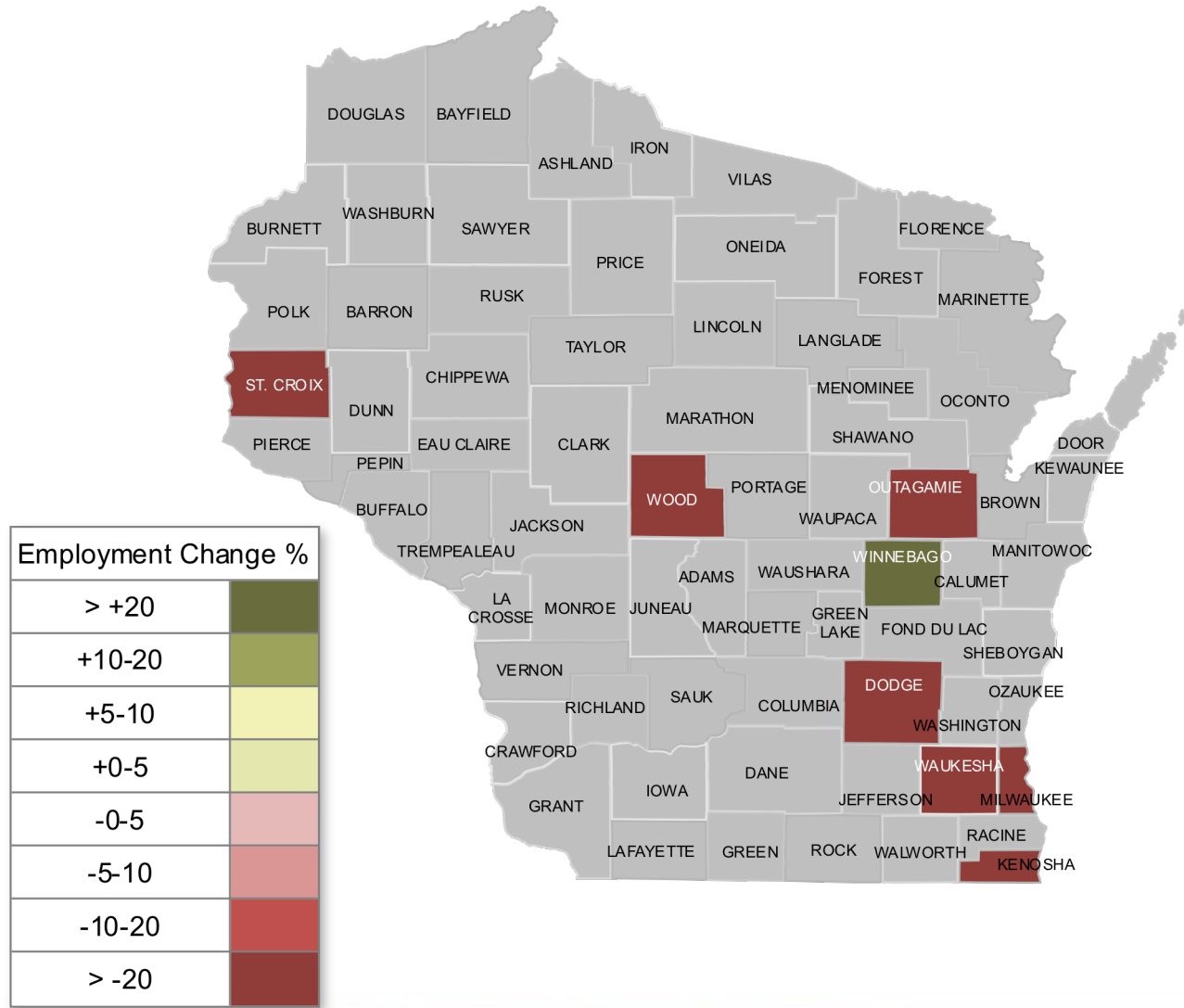
Paper bag & coated & treated paper manufacturing distribution



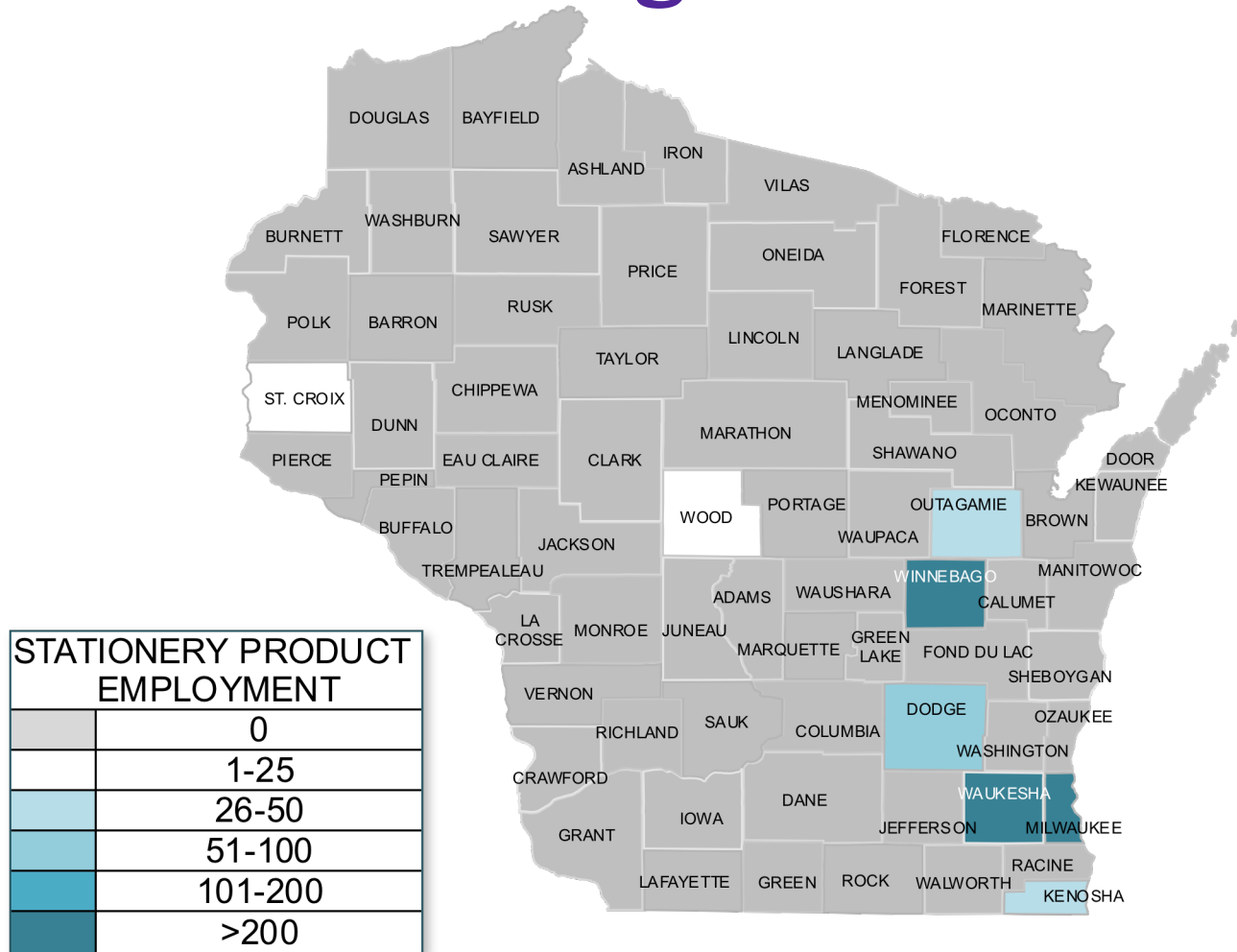
Stationery product manufacturing employment



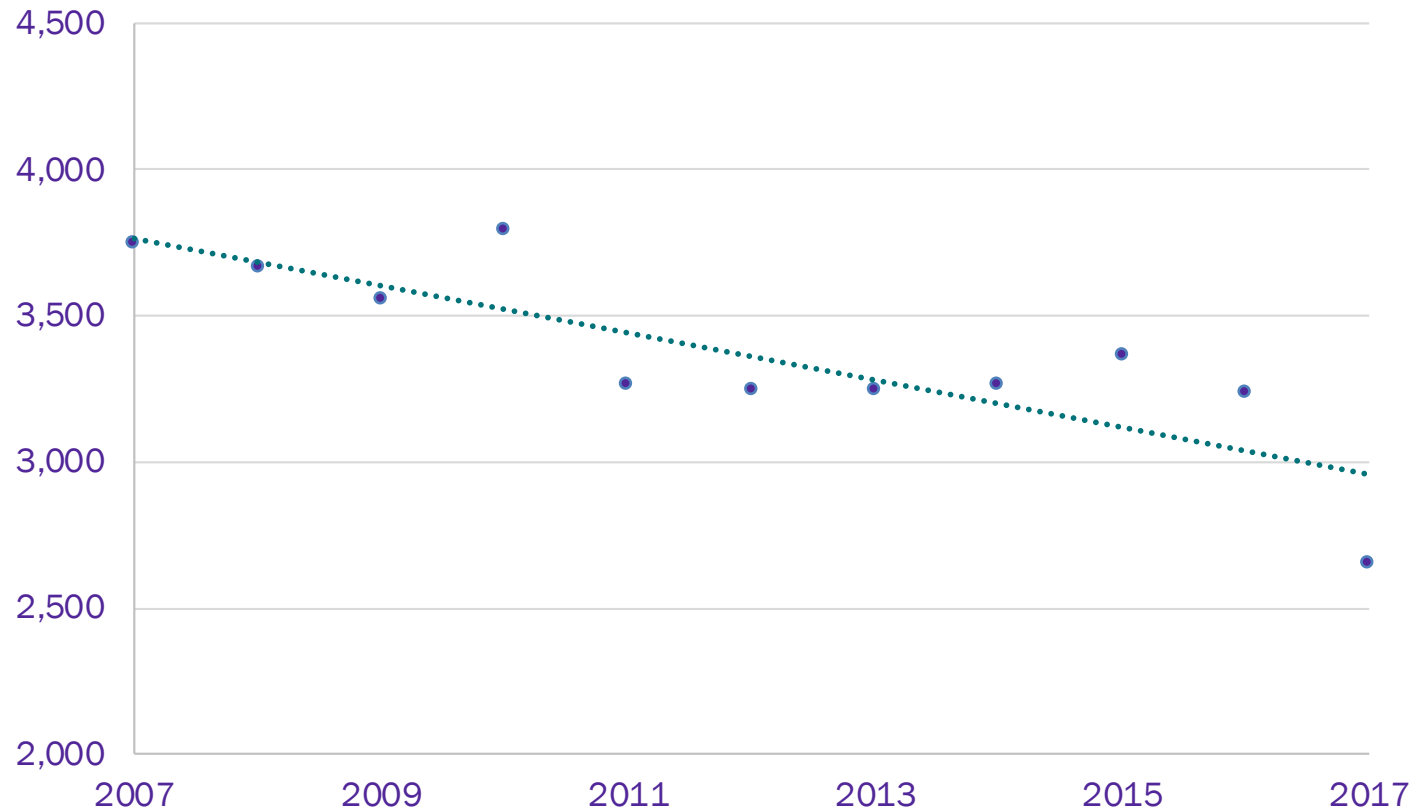
Stationery product employment change 2015-2017



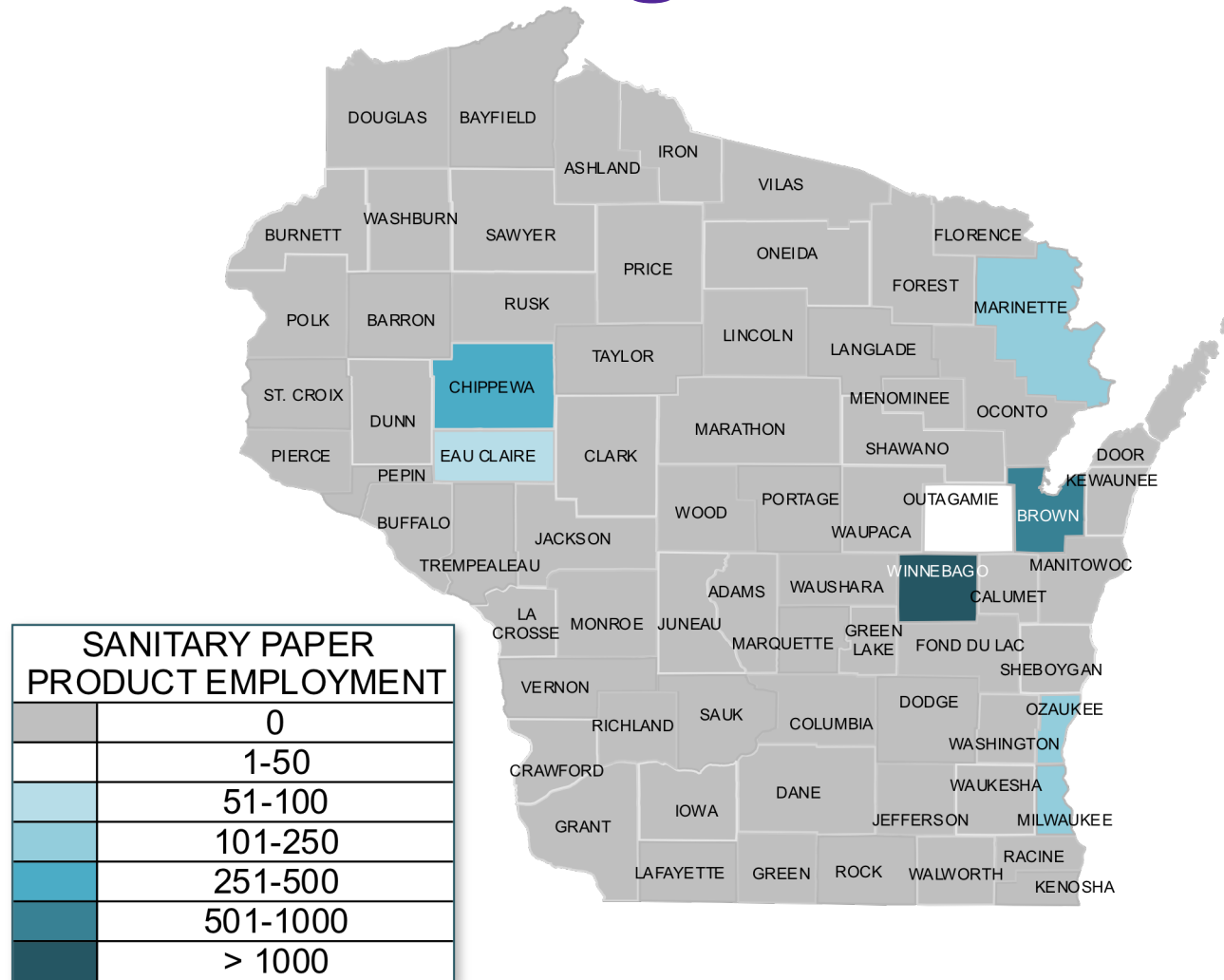
Stationery product manufacturing distribution



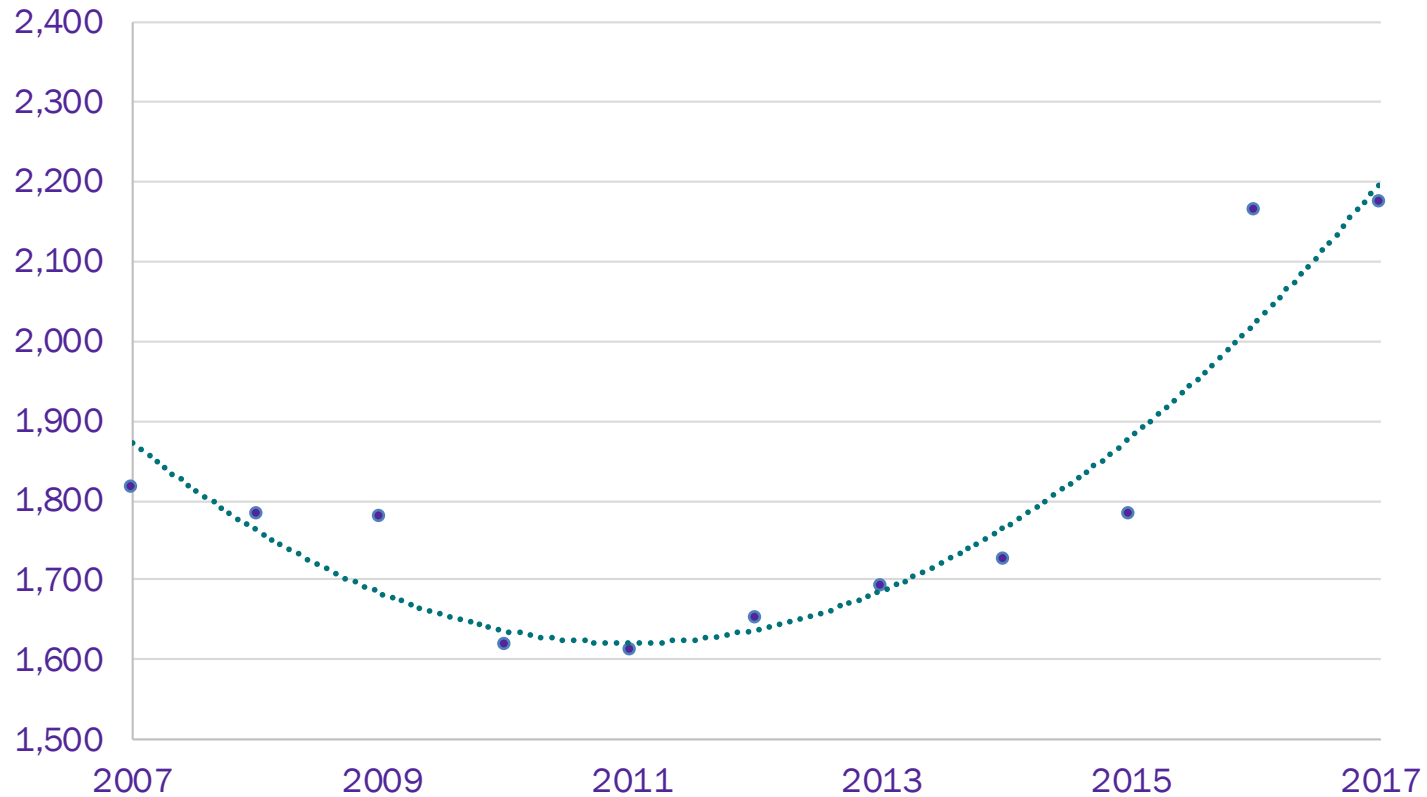
Sanitary paper product manufacturing employment



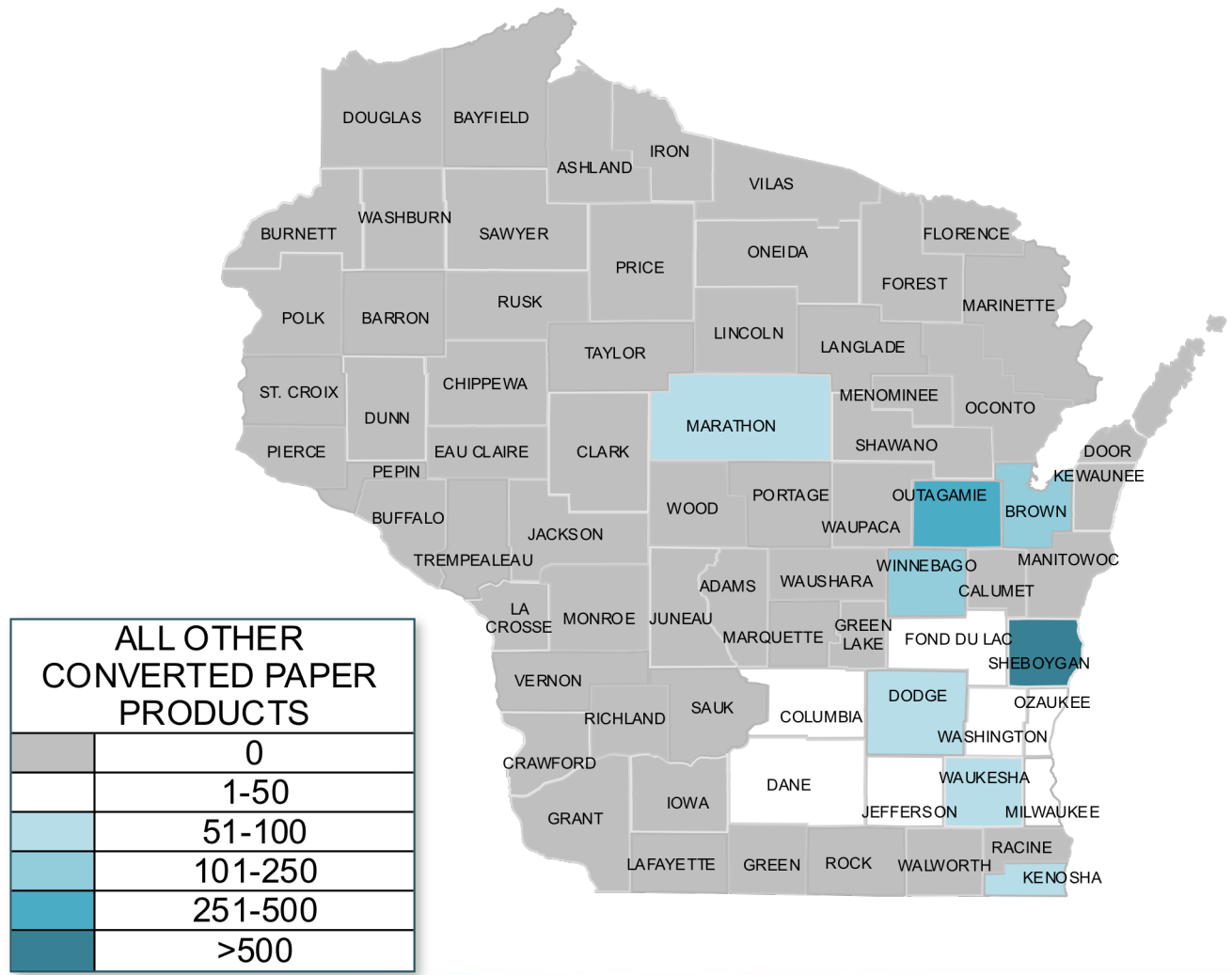
Sanitary paper product manufacturing distribution



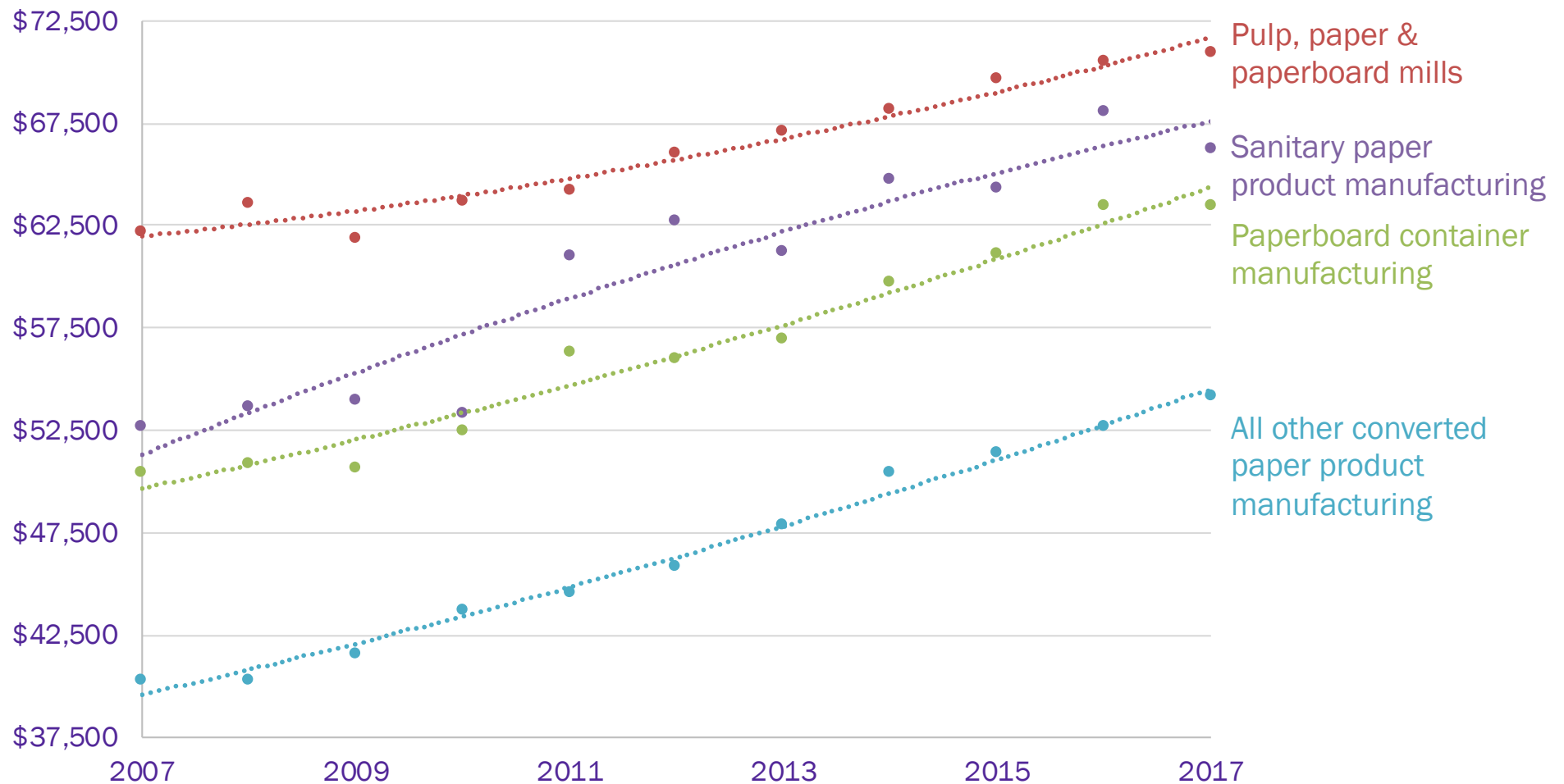
All other converted paper product manufacturing



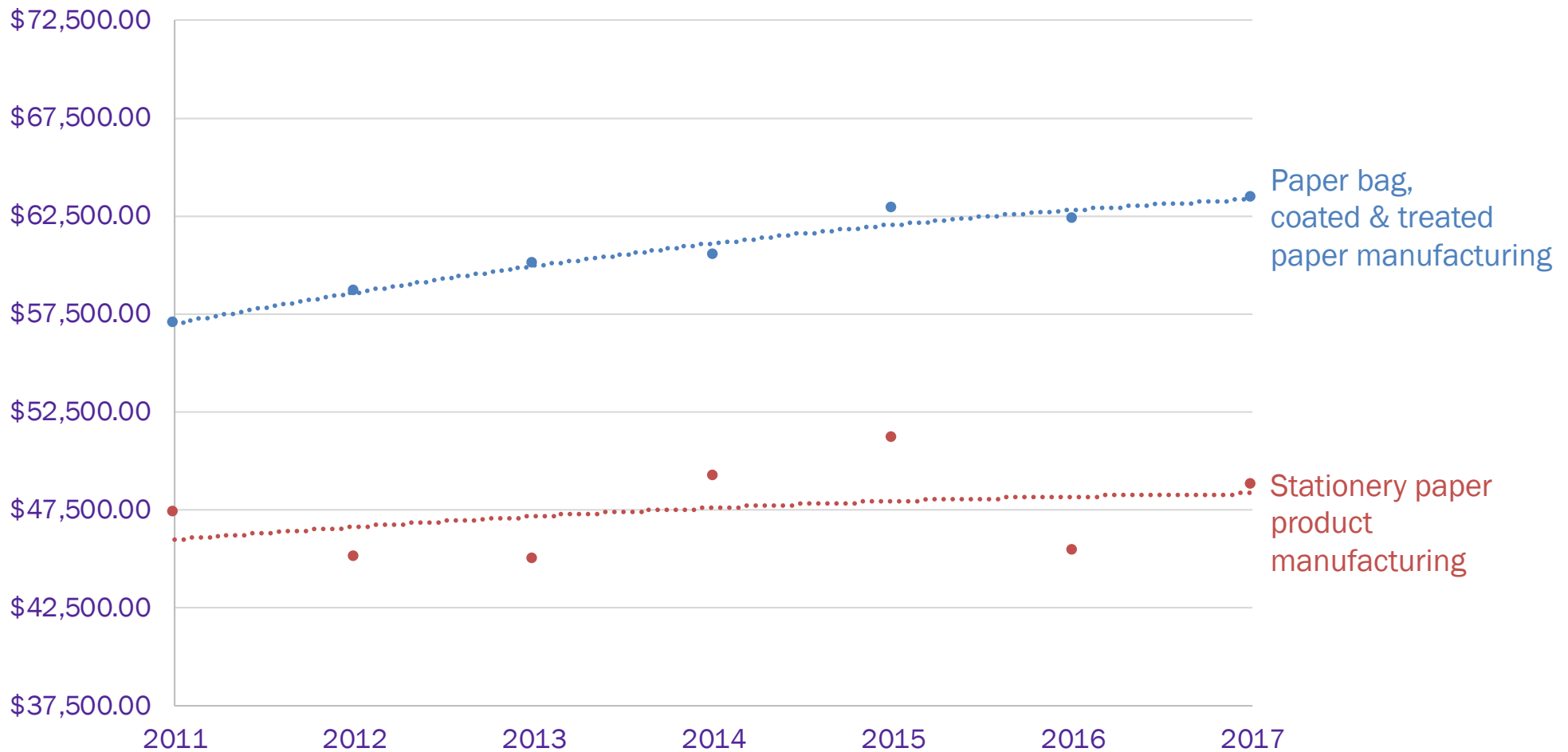
All other converted paper product manufacturing distribution



Average wages



Average wages



ECONOMIC CONTRIBUTIONS



Key findings

- Paper manufacturing accounts for **\$18,163,914,173** output and **30,262** jobs

41 of Wisconsin's counties are home to some paper manufacturing activity



Indirect effect

- An additional **35,000** Wisconsin jobs that are there because of paper manufacturing industry with a total output of **\$6,523,110,235**

Top 5

1. Wholesale trade
(5,400 jobs)
2. Management of companies
(3,245 jobs)
3. Truck transportation
(2,097 jobs)
4. Commercial logging
(1,891 jobs)
5. Services to buildings
(1,335 jobs)



Induced effect (30,591 jobs)

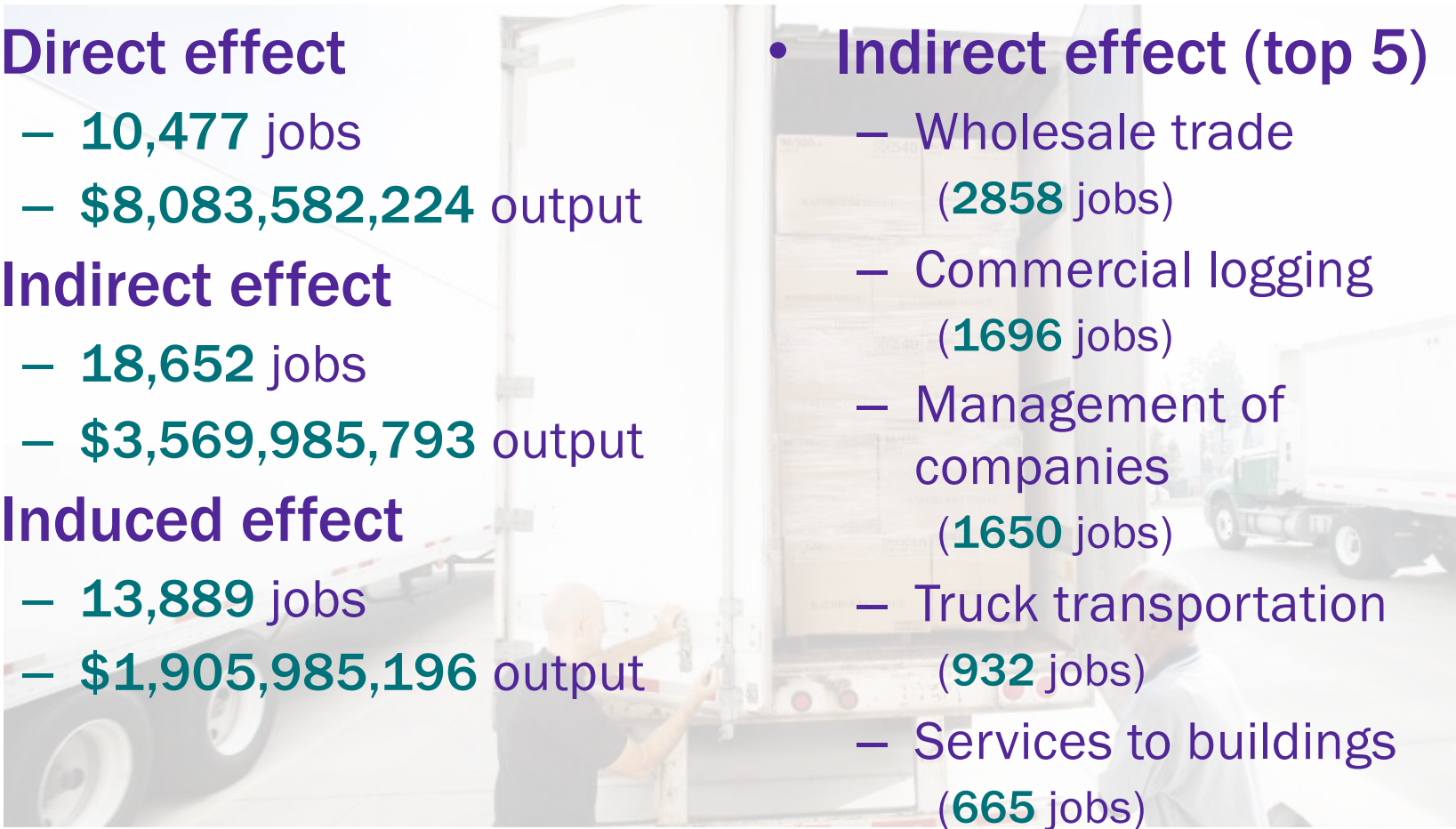
Top 5

1. Hospitals
2. Full-service restaurants
3. Limited-service restaurants
4. Real estate
5. Retail – general merchandise

• **\$4,198,274,039**
output



Pulp and paper mills

- **Direct effect**
 - **10,477** jobs
 - **\$8,083,582,224** output
 - **Indirect effect**
 - **18,652** jobs
 - **\$3,569,985,793** output
 - **Induced effect**
 - **13,889** jobs
 - **\$1,905,985,196** output
 - **Indirect effect (top 5)**
 - Wholesale trade (**2858** jobs)
 - Commercial logging (**1696** jobs)
 - Management of companies (**1650** jobs)
 - Truck transportation (**932** jobs)
 - Services to buildings (**665** jobs)
- 

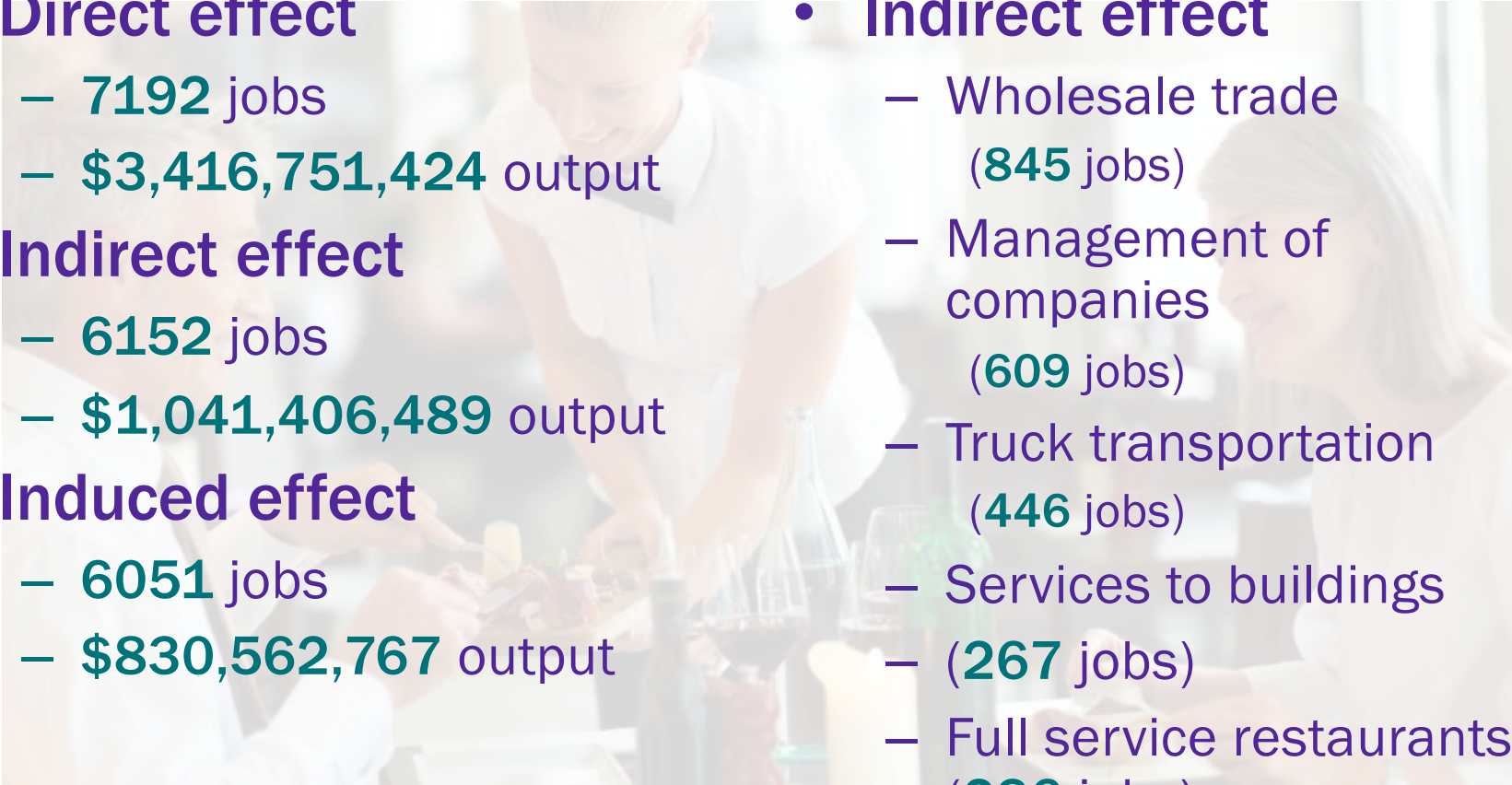


Paperboard mills

- **Direct effect**
 - 717 jobs
 - **\$592,066,582** output
- **Indirect effect**
 - 1618 jobs
 - **\$300,107,083** output
- **Induced effect**
 - 1,110 jobs
 - **\$152,346,379** output
- **Indirect effect (top 5)**
 - Wholesale trade (233 jobs)
 - Commercial logging (182 jobs)
 - Management of companies (101 jobs)
 - Services to buildings (91 jobs)
 - Maintenance & repair construction of non-residential buildings (81 jobs)



Paperboard container production

- **Direct effect**
 - **7192** jobs
 - **\$3,416,751,424** output
 - **Indirect effect**
 - **6152** jobs
 - **\$1,041,406,489** output
 - **Induced effect**
 - **6051** jobs
 - **\$830,562,767** output
 - **Indirect effect**
 - Wholesale trade (**845** jobs)
 - Management of companies (**609** jobs)
 - Truck transportation (**446** jobs)
 - Services to buildings (**267** jobs)
 - Full service restaurants (**236** jobs)
- 



Paper bag & treated & coated paper production

- Direct effect
 - **6120** jobs
 - **\$2,831,164,572** output
- Indirect effect
 - **3803** jobs
 - **\$718,316,519** output
- Induced effect
 - **4712** jobs
 - **\$646,773,096** output
- Indirect effects
 - Wholesale trade (**676** jobs)
 - Management of companies (**411** jobs)
 - Truck transportation (**284** jobs)
 - Services to buildings (**267** jobs)
 - Employment services (**141** jobs)



Stationery products

- **Direct effect**
 - 852 jobs
 - \$322,975,769 output
- **Indirect effect**
 - 497 jobs
 - \$90,701,878 output
- **Induced effect**
 - 586 jobs
 - \$80,474,240 output
- **Indirect effects**
 - Wholesale trade (83 jobs)
 - Management of companies (64 jobs)
 - Truck transportation (41 jobs)
 - Employment services (24 jobs)
 - Services to buildings (13 jobs)



Sanitary paper products

- Direct effect
 - 2911 jobs
 - \$2,265,419,563
- Indirect effects
 - 3081 jobs
 - \$585,134,178 output
- Induced effects
 - 2826 jobs
 - \$387,858,652
- Indirect effects
 - Wholesale trade 543 jobs
 - Management of companies 283
 - Truck transportation 251
 - Services to buildings 122 jobs
 - Other fabricated metal manufacturing 94

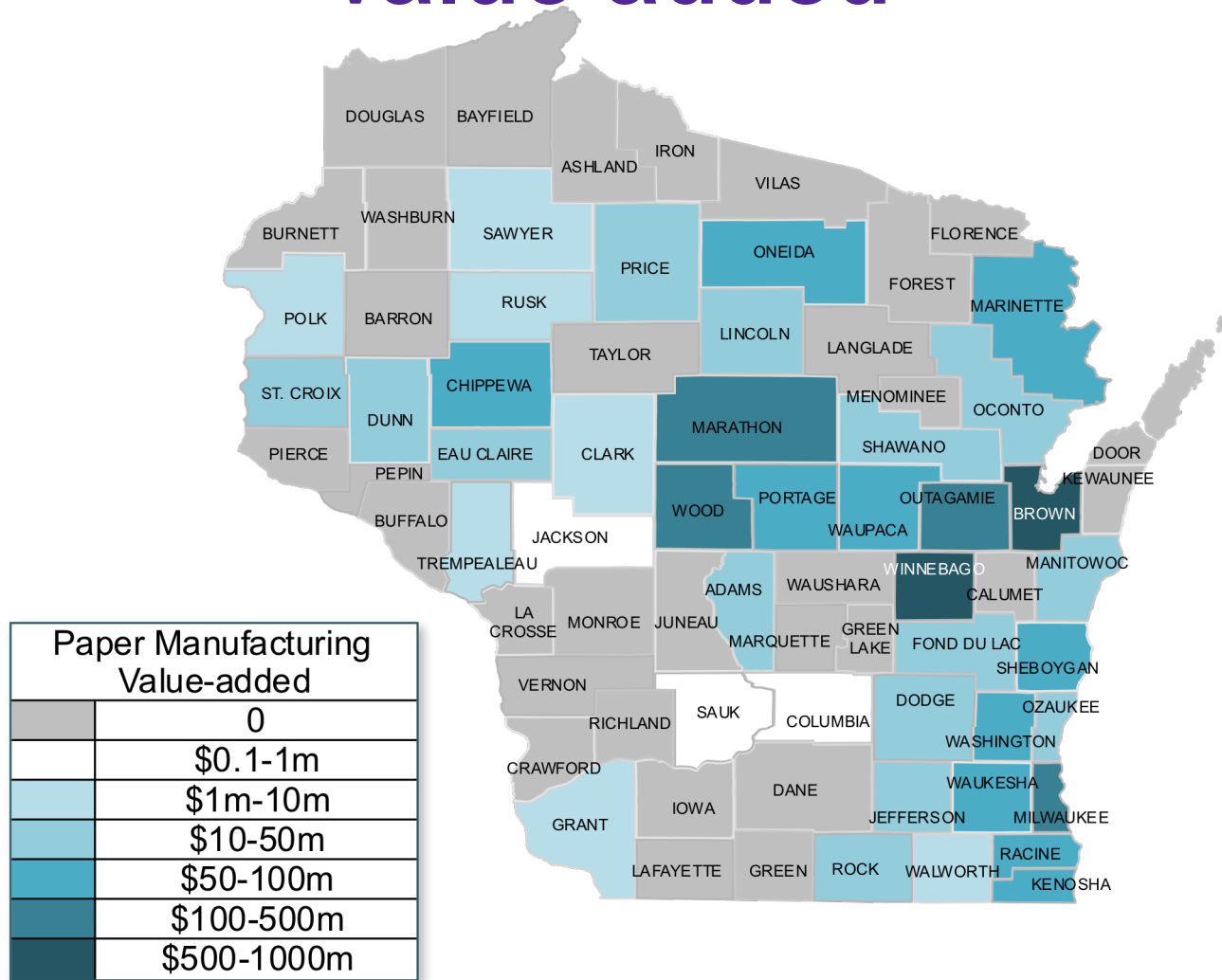


All other converted paper products

- Direct effect
 - 1955 jobs
 - \$625,112,538
- Indirect effects
 - 1119 jobs
 - \$203,963,231 output
- Induced effects
 - 1355 jobs
 - \$186,011,090
- Indirect effects
 - Wholesale trade 154 jobs
 - Management of companies 125
 - Truck transportation 69
 - Transportation support activities 57
 - Employment services 38



Wisconsin paper manufacturing value-added



Top 10 counties by value-added

County	Value-added
Winnebago	\$997,080,681
Brown	\$920,730,285
Outagamie	\$487,377,155
Wood	\$384,511,243
Marathon	\$248,754,235
Milwaukee	\$189,925,445
Waupaca	\$99,652,445
Waukesha	\$98,173,752
Portage	\$94,762,196
Washington	\$94,682,543
ALL WISCONSIN	\$4,496,176,602



Top 10 counties by contribution to county Gross Regional Product

County	% Contribution
Wood	9.9
Winnebago	8.8
Price	7.9
Waupaca	5.6
Brown	5.1
Oneida	4.9
Marinette	4.2
Outagamie	4.2
Adams	3.9
Chippewa	3.6



Top 10 counties by employment

County	Number of employees
Brown	6009
Winnebago	5287
Outagamie	3541
Wood	2064
Marathon	1759
Milwaukee	1531
Sheboygan	929
Washington	874
Waukesha	771
Waupaca	751
ALL WISCONSIN	30262



Top 10 counties by contribution to county employment

County	% Contribution
Winnebago	4.54%
Wood	4.18
Price	3.90
Adams	3.38
Brown	2.91
Waupaca	2.81
Outagamie	2.61
Lincoln	2.23
Marathon	1.98
Oneida	1.96



An example of economic contribution data: Chippewa County (1)

Summary Results				
Impact type	Employment	Labor income	Value-added	Output
Direct effect	92	\$9,867,281	\$15,963,332	\$699,658,447
Indirect effect	99.4	\$5,333,351	\$7,965,521	\$15,270,393
Induced effect	64.7	\$2,114,366	\$3,932,331	\$7,377,764
Total effect	256	\$17,314,999	\$27,861,184	\$92,256,604

Analysis is for paper mills in Chippewa County.

Data in hand for all paper manufacturing subsectors (individually and collectively) at the county level and for the entire State.



An example of economic contribution data: Chippewa County (2)

Detail Results		By output	
Description	Indirect	Induced	Total
Wholesale trade	\$4,330,7896	\$7385,193	\$4,715,988
Truck transportation	\$1,326,327	\$110,829	\$1,437,156
Commercial logging	\$1,208,373	\$38	\$1208,411
Electric power transmission...	\$1,073,205	\$67,841	\$1,141,046
Rail transportation	\$1,039,479	\$7,243	\$1,046,722
Management of companies...	\$840,501	\$32,883	\$873,384
Maintenance and repair con...	\$737,090	\$43,381	\$780,470
Architectural, engineering, a...	\$419,387	\$21,414	\$440,801
Wood preservation	\$318,285	\$999	\$319,284
Waste management and re...	\$286,486	\$22,799	\$309,285



QUALITATIVE FINDINGS



Reported pay ranges

- Production worker starting pay \$15.50-\$18/hour
- \$20-\$22/hour or more after four to six months on the job
- Experienced operators earn \$60,000-\$70,000 per year
- Process engineers starting at \$60,000-\$70,000 per year



Source: Interviews; Surveys



Forecast for employment growth

- Expect employee numbers to stay flat “but that’s a function of acquisitions and moving production to facilities rather than a growing market.”
- “15-25 percent turnover expected in the next five years because of retirement...we expect to replace, not expand.”



Source: Interviews; Surveys



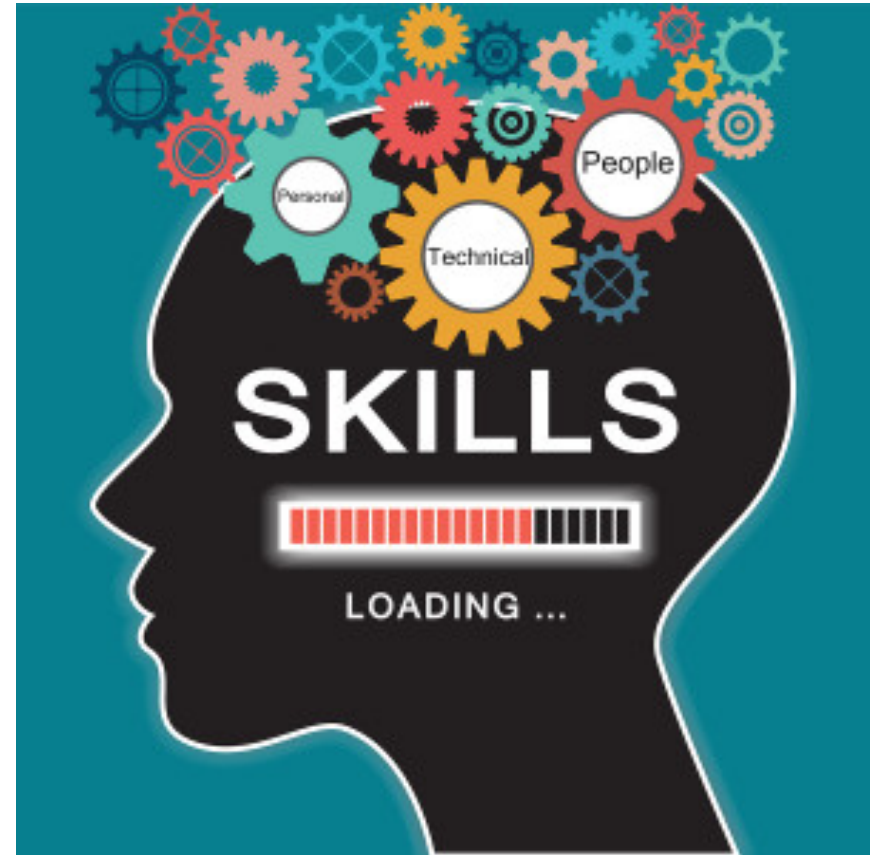
Recruitment

- “Manufacturing is obviously a huge part of the economy in the U.S., but there is no place we go where we don't hear that companies are desperate for skilled workers. A baby boomer retires every 10 seconds.” - Carolyn Lee, executive director of the Washington-based Manufacturing Institute, quoted in Star Tribune 2/26/19



Skills needed in production workforce

- Skill mentioned most often was problem solving/critical thinking
- Also:
 - “Basic mechanical skills and manufacturing experience”
 - “Solid, basic math skills”
 - “We just need the basic skills: wanting to work and learn.”
- “If someone wants to work in manufacturing, we can give them a career.”



Source: Interviews; Surveys



Difficulties in recruiting employees

- “We have challenges getting people who can pass a drug test.”
- “Not willing to work shifts and holidays.”
- “There are specific types of employees that are more challenging for us to get, and that's the skilled trades -- electricians and pipefitters and so forth. There aren't that many people who are leaving high school to go into that and as a consequence they are in short supply.”

Source: Interviews; Surveys



Are you experiencing wage inflation?

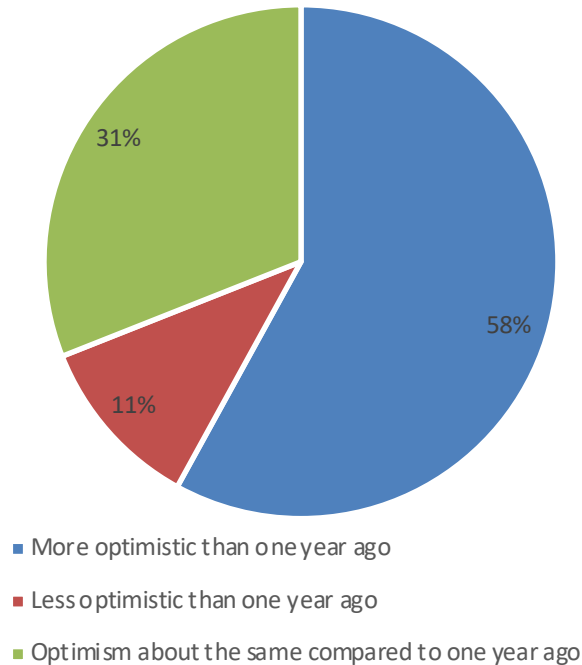
- Most common response was that wages are increasing roughly in line with cost of living, i.e. 2-3 percent per year
- Several companies reported increasing wages at significantly higher rates in order to retain employees; two-year total payroll increases at these companies ranged from 7-13 percent
- Mills typically have multi-year union contracts in place so payroll costs are known and planned
- Converters vary union/non-union and wage inflation is reported as more variable company to company



Source: Interviews; Surveys



Level of Industry Optimism Compared to One Year Ago

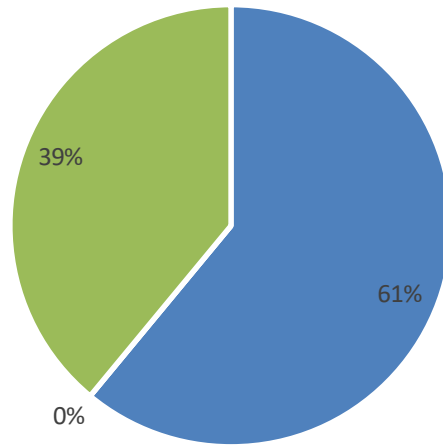


- Less optimistic: “Economic growth seems less stable than at start of 2018”
- More optimistic: “Just the aversion to plastic products we're seeing today is a reason to see some optimism, at least on the paper packaging end of things.”
- More optimistic: “I'm very optimistic because we finally turned the corner.”

Source: Interviews; Surveys



Level of Industry Optimism Compared to Five Years Ago



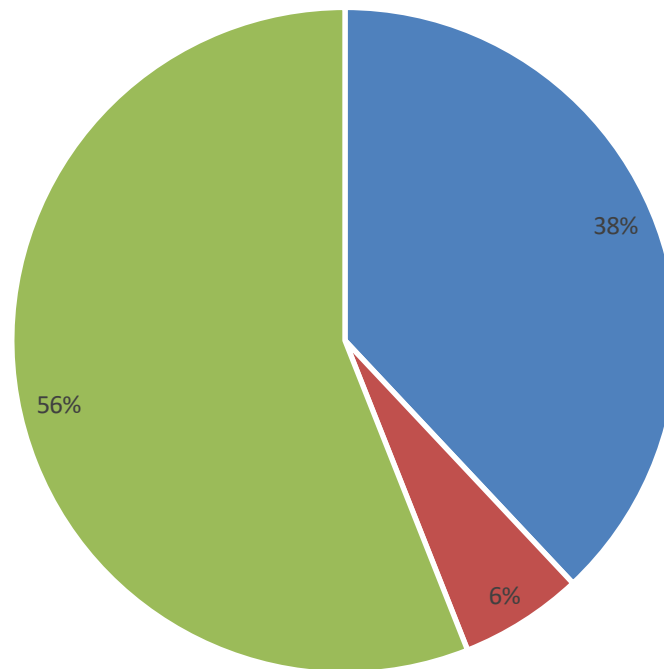
■ More optimistic than five years ago ■ Less optimistic than five years ago
■ About the same compared to five years ago

- More optimistic: “Five years ago, yeah, it was pretty bad back then.”
- More optimistic: “Five years ago, it was not clear how mills were going to reposition themselves... Now it seems to be fairly well understood directionally where they're headed.”
- About the same: “I think the trends are continuing trends.”

Source: Interviews; Surveys



Capital Investment Projections Next Three Years Compared to Prior Three Years

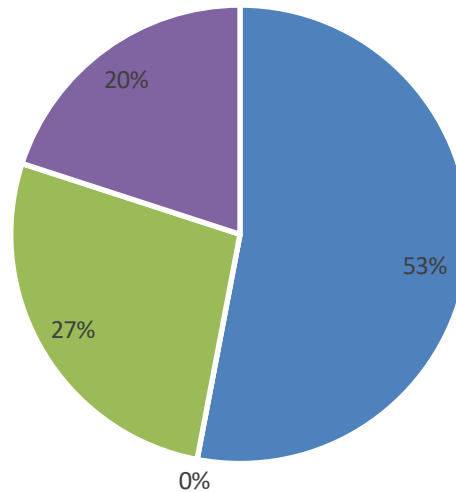


■ Higher capital investment projected ■ Lower capital investment projected ■ About the same going forward

Source: Interviews; Surveys



Will the Paper Industry be Stronger in One Year?



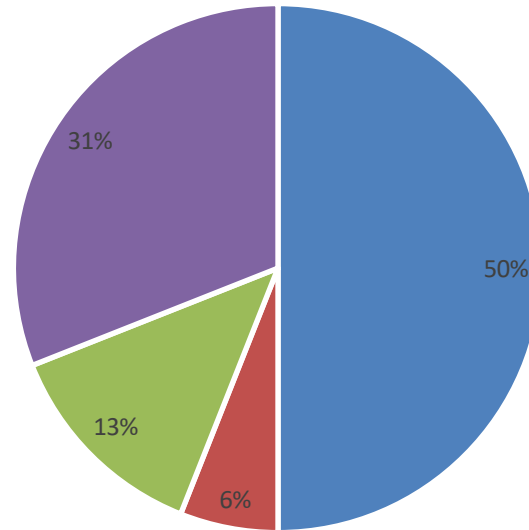
■ Industry will be stronger in one year ■ Industry will be weaker in one year
■ Industry strength will be about the same in one year ■ Don't know/No opinion offered

- “I don't think it'll increase like it has the last two years, but I'm optimistic and I think we'll be better off.”
- “It'll be smaller but it'll be stronger... there's going to be some more thinning of the herd.”
- "The strong will survive and some of the weak will not"

Source: Interviews; Surveys



Will the Paper Industry be Stronger in Five Years?



■ Industry will be stronger in five years ■ Industry will be weaker in five years
■ Industry strength will be about the same in five years ■ Don't know/No opinion offered

- “The industry will continue to get stronger in the short term but pain of further reductions in capacity will be required.”
- “Changing population demographics and continued digital impacts mean the industry will continue to decline.”

Source: Interviews; Surveys



Competitive disadvantages in Wisconsin

- Environmental regulations that in some cases exceed federal standards/standards in other U.S. regions
- High labor/benefit costs
- Transportation sometimes a challenge
- Energy costs



Competitive advantages in Wisconsin

- Excellent workforce
- Good education system
- Geography



Threats

- Continued digital displacement for printing/publishing papers
- Labor availability
- Perception that it's a dying industry
- Lots of competition for talent
- Technology substitution for basic products, e.g. thermal/carbonless
- Demographics/slowing population growth
- Foreign competition

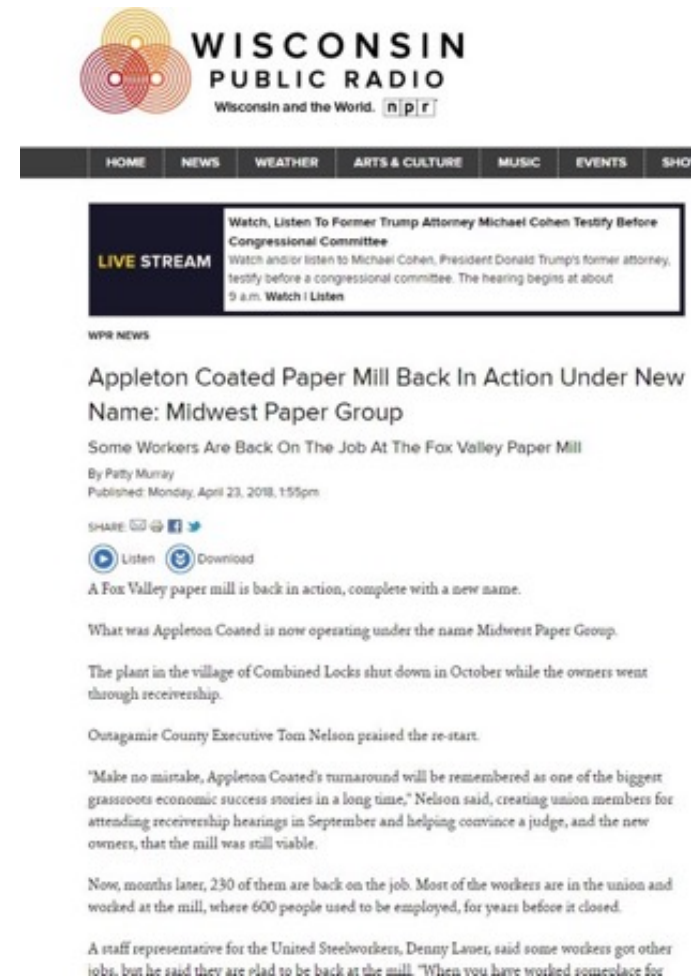


OPPORTUNITIES



The Amazon effect

- Mills repositioning to meet increased demand for packaging
 - Midwest Paper reborn from former Appleton Coated
 - Green Bay Packaging announcement of \$500M investment in new mill
 - ND Paper purchase of Catalyst in Biron



The screenshot shows the WISCONSIN PUBLIC RADIO website. The logo at the top features three overlapping circles in orange, red, and purple, with the text "WISCONSIN PUBLIC RADIO" and "Wisconsin and the World. npr". Below the logo is a navigation bar with links for HOME, NEWS, WEATHER, ARTS & CULTURE, MUSIC, EVENTS, and SHOWS. The main content area features a "LIVE STREAM" section with a video player and a "Watch, Listen To Former Trump Attorney Michael Cohen Testify Before Congressional Committee" headline. Below this is a news article titled "Appleton Coated Paper Mill Back In Action Under New Name: Midwest Paper Group" by Patty Murray, published on Monday, April 23, 2018, at 1:55pm. The article includes social media share buttons, audio and download icons, and a brief summary of the mill's reopening.



Printing and writing paper



Images courtesy Verso



University of Wisconsin-Stevens Point
College of Natural Resources

SPECIALTY PAPERS



Specialty paper: labels



Photos courtesy Wausau Coated



Shelf markers by the billions



Photo courtesy Wausau Coated



Specialty paper: Food packaging



Photos courtesy Ahlstrom Munksjö



Specialty paper: Flexible packaging



Image courtesy Verso

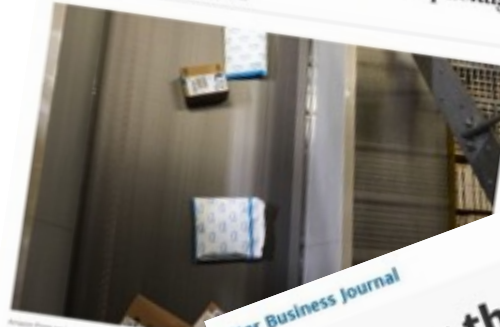


Opportunities: Is paper the new plastic?

On patrol with the enforcer of D.C.'s plastic-straw ban



Why Amazon's new streamlined packaging is jamming up recycling centers



Star Business Journal

Is paper the new plastic? Demand for compostable and reusable straws continues to grow

SANDRA SAGAN The Canadian Press

Forget plastic straws, paper cups are now the latest target

By Jade Scipioni | Published October 29, 2018 | Food and Beverage | FOXBusiness

PACKAGING DIGEST

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Home → Protective Packaging → 3 ways 'The Amazon Effect' impacts protective packaging

3 ways 'The Amazon Effect' impacts protective packaging

By Rob Kaszubowski in Protective Packaging on October 17, 2016

Acts of Faith

The latest Lent challenge for churches: Give up plastic



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**THANK YOU FOR
YOUR ATTENTION**
**QUESTIONS?
COMMENTS?**



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