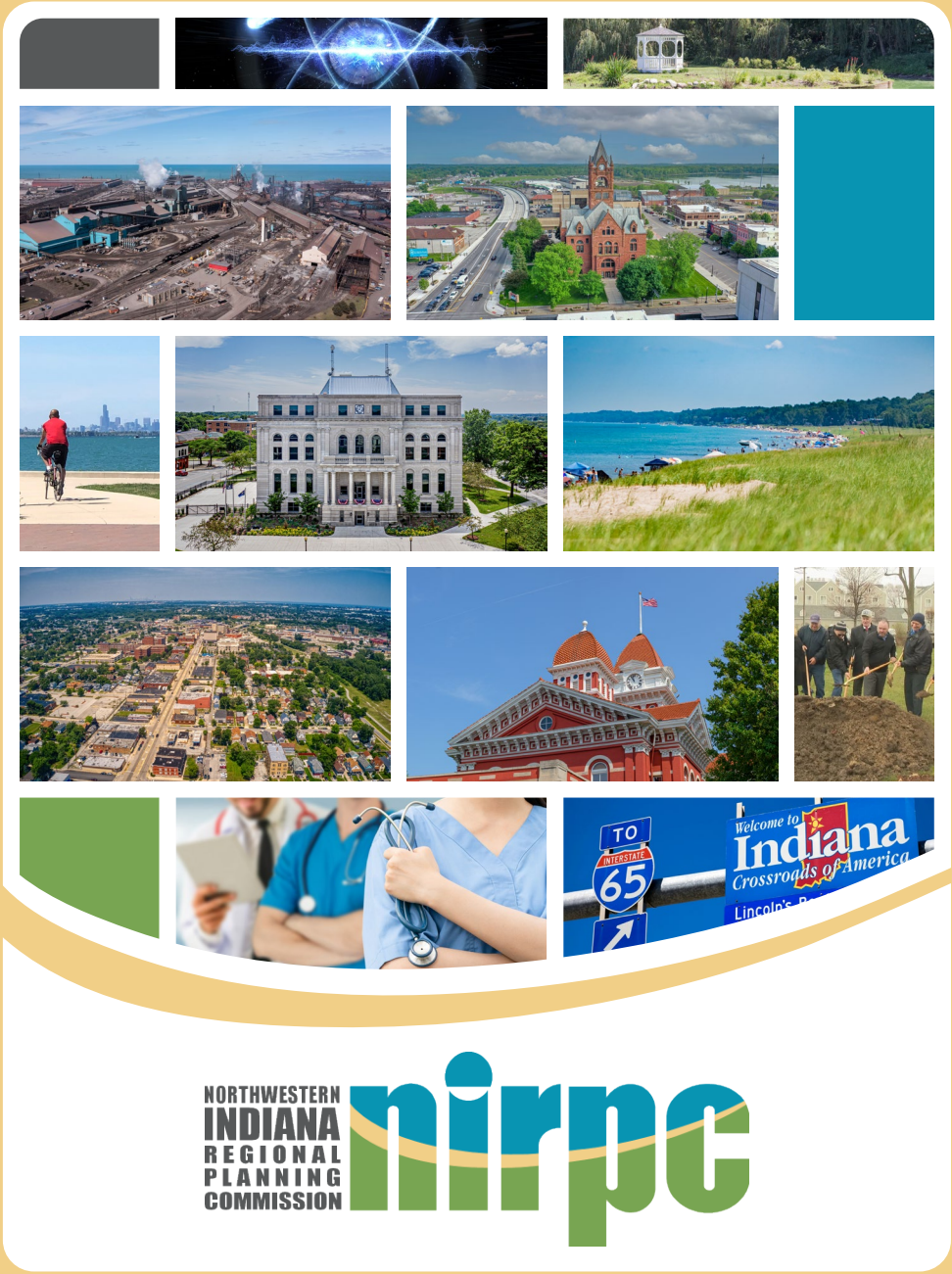
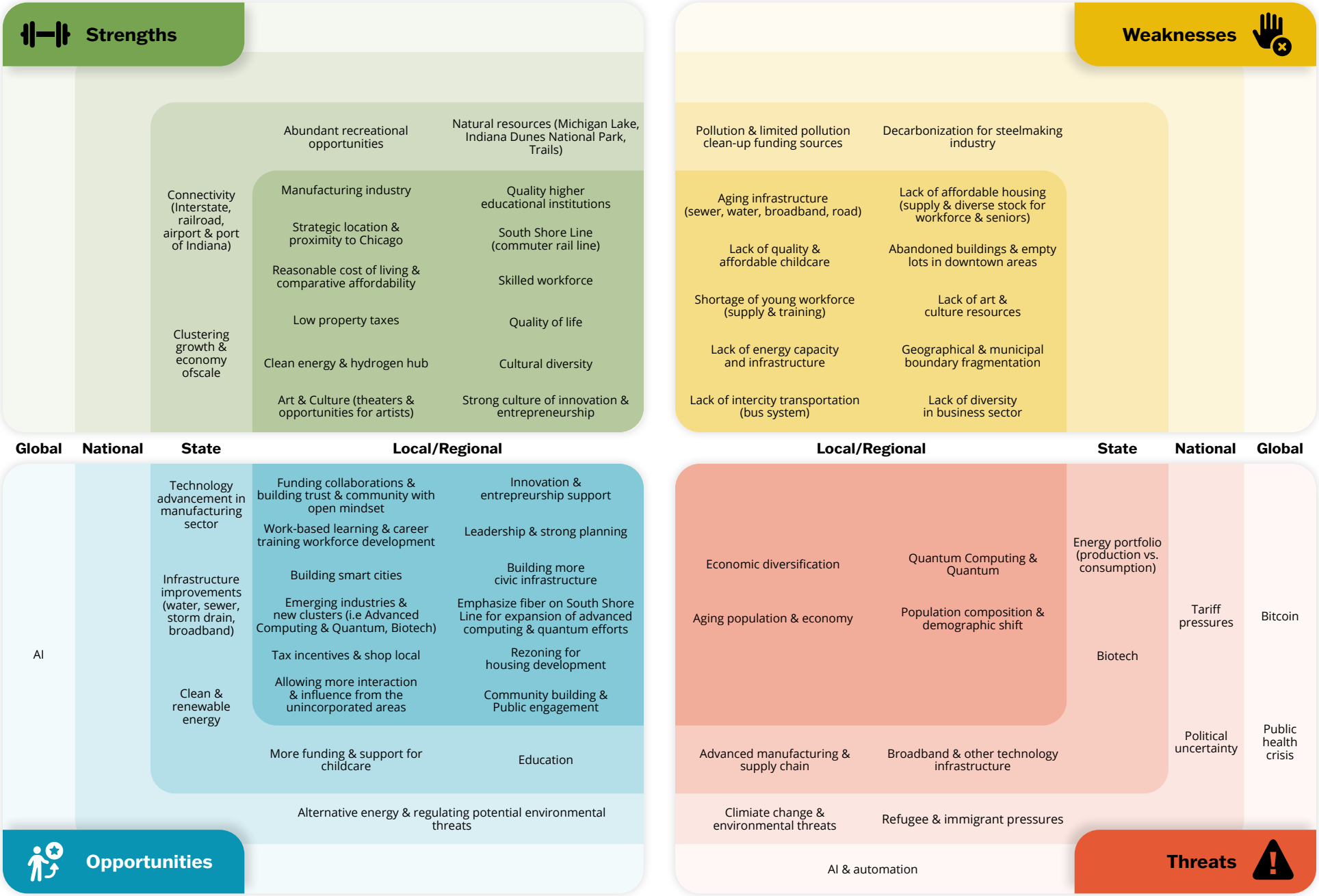
Appendices

Northwest Indiana Comprehensive
Economic Development Strategy



NORTHWESTERN INDIANA REGIONAL PLANNING COMMISSION nirpc


Strengths
Abundant recreational opportunities
Natural resources (Michigan Lake, Indiana Dunes National Park, Trails)
Connectivity (Interstate, railroad, airport & port of Indiana)
Manufacturing industry
Quality higher educational institutions
Strategic location & proximity to Chicago
South Shore Line (commuter rail line)
Reasonable cost of living & comparative affordability
Skilled workforce
Clustering growth & economy ofscale
Low property taxes
Quality of life
Clean energy & hydrogen hub
Cultural diversity
Art & Culture (theaters & opportunities for artists)
Strong culture of innovation & entrepreneurship
Weaknesses
Pollution & limited pollution clean-up funding sources
Decarbonization for steelmaking industry
Aging infrastructure (sewer, water, broadband, road)
Lack of affordable housing (supply & diverse stock for workforce & seniors)
Lack of quality & affordable childcare
Abandoned buildings & empty lots in downtown areas
Shortage of young workforce (supply & training)
Lack of art & culture resources
Lack of energy capacity and infrastructure
Geographical & municipal boundary fragmentation
Lack of intercity transportation (bus system)
Lack of diversity in business sector
Global
National
State
Local/Regional
Local/Regional
State
National
Global
AI
Technology advancement in manufacturing sector
Funding collaborations & building trust & community with open mindset
Innovation & entrepreurship support
Work-based learning & career training workforce development
Leadership & strong planning
Infrastructure improvements (water, sewer, storm drain, broadband)
Building smart cities
Building more civic infrastructure
Emerging industries & new clusters (i.e Advanced Computing & Quantum, Biotech)
Emphasize fiber on South Shore Line for expansion of advanced computing & quantum efforts
Tax incentives & shop local
Rezoning for housing development
Clean & renewable energy
Allowing more interaction & influence from the unincorporated areas
Community building & Public engagement
More funding & support for childcare
Education
Alternative energy & regulating potential environmental threats
Economic diversification
Quantum Computing & Quantum
Energy portfolio (production vs. consumption)
Aging population & economy
Population composition & demographic shift
Tariff pressures
Bitcoin
Biotech
Political uncertainty
Public health crisis
Advanced manufacturing & supply chain
Broadband & other technology infrastructure
Climiate change & environmental threats
Refugee & immigrant pressures
AI & automation
Opportunities
Threats

219 Development	Indiana University Northwest	Reeder Companies
Antero Group	IVY Tech	Superior Construction
Black Chamber of Commerce	JSHELD	Thomas & Associates
City of Gary	Lake/La Porte County Economy Development	Town of Munster
City of Michigan City	Lakeshore Chamber	Union Township Trustee of Porter County
CoAction	Northwestern Indiana Building and Construction Trades Council	Unity Foundation
Crossroads Chamber	Northwest Indiana Forum	U.S. Senator Todd Young NW Regional Office
Economic Development Corporation - Michigan City	Old National Bank	Valparaiso University
Hammond Development Corporation	Post Tribune	Vibrant Indiana MC
Indiana American Water	Purdue Extension	Weiss Entities
ION STEWARDS ENERGY	Purdue Northwest	Westville Public Library

Stakeholder Grouping	Types of Participating Organizations	Participating Organization/Representative List
National Governmental Representatives	US Senator's Offices	US Senator Todd Young NW Regional Director
Local & Municipal Governments	Local Governments	City of Crown Point
		City of Gary
		City of Portage
		La Porte County Board of Commissioners
		La Porte County
		Lake County
		Michiana Shores Town Council
		Porter County
		Town of Beverly Shores
		Town of Chesterton
		Town of LaCrosse
		Town of Munster
		Town of Schererville
		Town of Wanatah
		City of Michigan City
		Union Township Trustee of Porter County
Chambers of Commerce	Chambers of Commerce	Black Chamber of Commerce of Northwest Indiana
		Crossroads Chamber
		Lakeshore Chamber
Community Foundations & Social Service Organizations	Community Foundations	Unity Foundation
	Social Service Organizations	CoAction
Regional Economic Development Organizations	Economic Development Corporations	Economic Development Corporation - Michigan City
		Lake/La Porte County Economy Development
		Vibrant Indiana MC
Federal and State Funded Nonprofit Networks	Federal and State funded Nonprofit Networks	Northwest Indiana Small Business Development Center
Nonprofit Regional Economic Development Organizations	Nonprofit Regional Economic Development Organizations	HDC (Hammon Development Corporation)
		The Society of Innovators at Purdue Northwest
		One Region
		NWI Forum
Nonprofit Regional Workforce Development Organizations	Nonprofit Regional Workforce Development Organizations	Center of Workforce Innovations

Stakeholder Grouping	Types of Participating Organizations	Participating Organization/Representative List
Higher Educational Institutions	Higher Education Institutions	Indiana University Northwest (IUN)
		IVY Tech
		Purdue Extension
		Purdue Northwest (PNW)
		Valparaiso University
Public Library Systems	Public Library Systems	Westville Public Library
Local Industry & Professional Organizations/Unions	Local Building Trade Unions	Northwestern Indiana Building and Construction Trades Council
	Professional Realtors' Associations	Northwest Indiana Realtors Association
Planning & Consulting Firms	Consulting Firms	Thomas & Associates
		JSHELD
		Antero Group
Local Businesses	Property Management business	Weiss Entities
	Real Estate business	219 Development
		Reeder Companies
Local Construction & Utility Providers	Utility & Constructions	Superior Construction
		Indiana American Water
	Local Developers, Real Estate Professionals and Banking Sector	Old National Bank
Local Media	Local Media	Post Tribune

	Month			Q	Month			Q	Bi-annual	Month			Q	Month				Annual					
Metrics Tracking Period Unit	M1	M2	M3	Q1	M4	M5	M6	Q2	Q1/Q2	M7	M8	M9	Q3	M10	M11	M12	Q4	Y1	Y2	Y3	Y4	Y5	**Goal Indicator(s)**
Goal 1: Economic Diversification and Innovation																							
Number of identified potential industrial clusters and entrepreneurial partners																							Monitor the regional performance on an annual basis of Primary Metals Manufacturing (knowing that it is in decline); Machinery manufacturing; Glass & Ceramics (Pharmaceutical production) on Purdue Center for Regional Development's IARC Data dashboard.
Number of participating industrial cluster members in the ecosystem project																							
Number of regional organizations contacted about CEDS industrial diversification and entrepreneurship efforts																							
Number of new organizations who now participate in the industrial cluster ecosystem projects because of CEDS related outreach																							
Number of industrial cluster engagement attendees at meetings of the ecosystem project																							
Number of meetings held with any industrial cluster partners																							
Number of NIRPC sponsored or partner meetings pertaining to housing, brownfields, industrial clusters, entrepreneurship, and workforce development - break this down by goal																							
Number of other Midwestern organizations (outside of Northwest Indiana) engaged in regional meetings or discussions hosted by NIRPC																							
Number of entrepreneurs assisted which include directing to resources, providing information, or holding events with partner organizations																							

	Month			Q	Month			Q	Bi-annual	Month			Q	Month				Annual					
Metrics Tracking Period Unit	M1	M2	M3	Q1	M4	M5	M6	Q2	Q1/Q2	M7	M8	M9	Q3	M10	M11	M12	Q4	Y1	Y2	Y3	Y4	Y5	**Goal Indicator(s)**
Goal 2: Workforce Resiliency																							
Number of identified potential workforce development collaboration at the regional level																							Monitor the regional performance on an annual basis of Labor Force Participation.
Number of regional organizations contacted about CEDS workforce development collaboration efforts																							Monitor Occupation Cluster data for STEM jobs (found on PCRD's IARC Region 8 report updated annually). Website link every December.
Number of new organizations who now participate in the workforce development collaboration efforts because of outreach																							
Evaluate various talent pipeline tools, such as the U.S. Chamber of Commerce's TPM tool, to determine the best approach																							
Goal 3: Quality of Place																							
Number of times NIRPC provided technical assistance to local units of governments, LEDOs and private partners on brownfield assessments annually																							Indiana Finance Authority number of properties assisted by county
Number of properties assisted in the NIRPC region (The state brownfield program at the finance authority works with buyers to get status letters for brownfields)																							Housing Supply indicator by county annually: https://data.indianarealtors.com/
																							Health of the housing market: Housing affordability and market indicators issued quarterly (Track by median home value for all three counties) See: https://www.nar.realtor/research-and-statistics/housing-statistics/county-median-home-prices-and-monthly-mortgage-payment
																							"Housing Vacancy and Housing Tenure by County (annual ACS updates): https://tableau.it.purdue.edu/t/public/views/CDS_QualityofLife/QualityofLife"

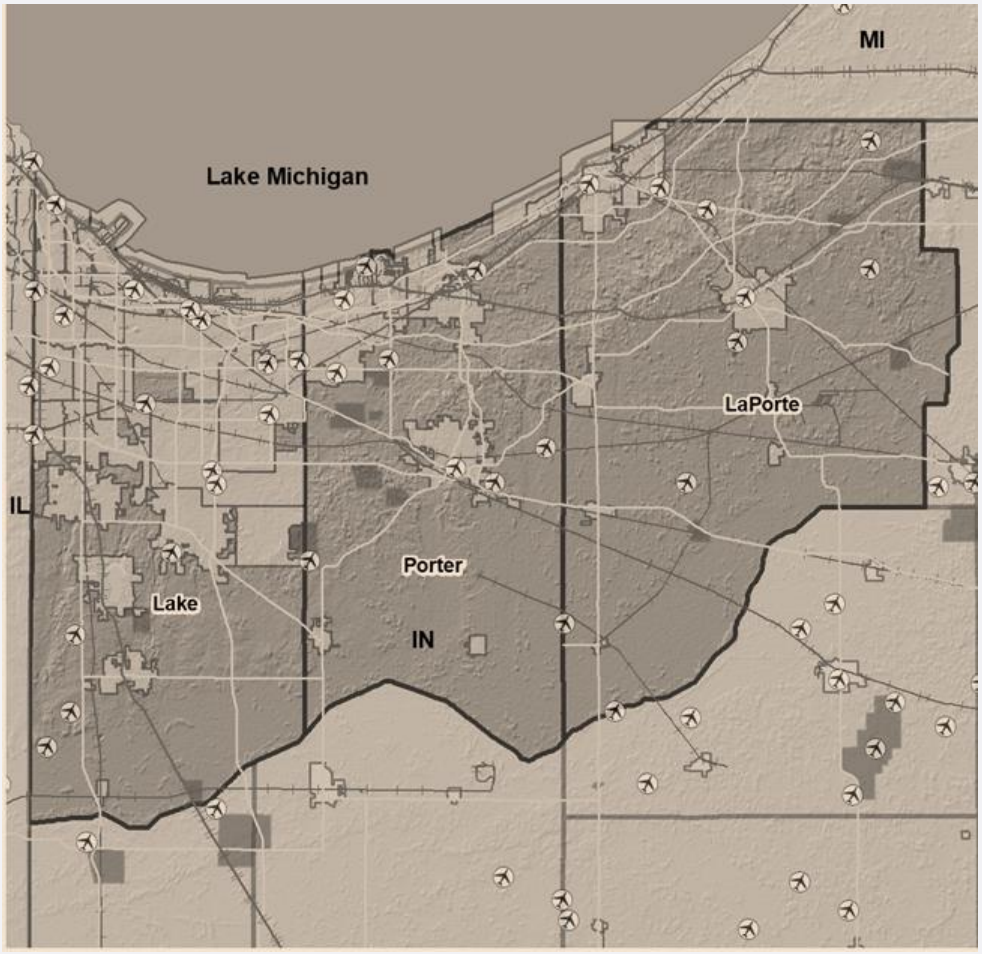
	Month			Q	Month			Q	Bi-annual	Month			Q	Month				Annual					
Metrics Tracking Period Unit	M1	M2	M3	Q1	M4	M5	M6	Q2	Q1/Q2	M7	M8	M9	Q3	M10	M11	M12	Q4	Y1	Y2	Y3	Y4	Y5	**Goal Indicator(s)**
CEDS Regional Alignment and Governance Metrics																							
Number of grants application submitted with partner organizations																							
Number of grant meetings held with collaborative partners																							
Number of grants secured by NIRPC, including as a sub-grantee																							
Dollar amount of grants secured by NIRPC toward projects which align with the CEDS regionwide																							
Number of studies initiated relating to any of the CEDS goals in the region																							
Number of the completed studies related to any of the CEDS goals																							

Industry Clusters

Northwestern Indiana Regional Planning Commission (NIRPC)

PURDUE UNIVERSITY
Center for Regional Development

Industry Cluster Analysis Update
December 2024



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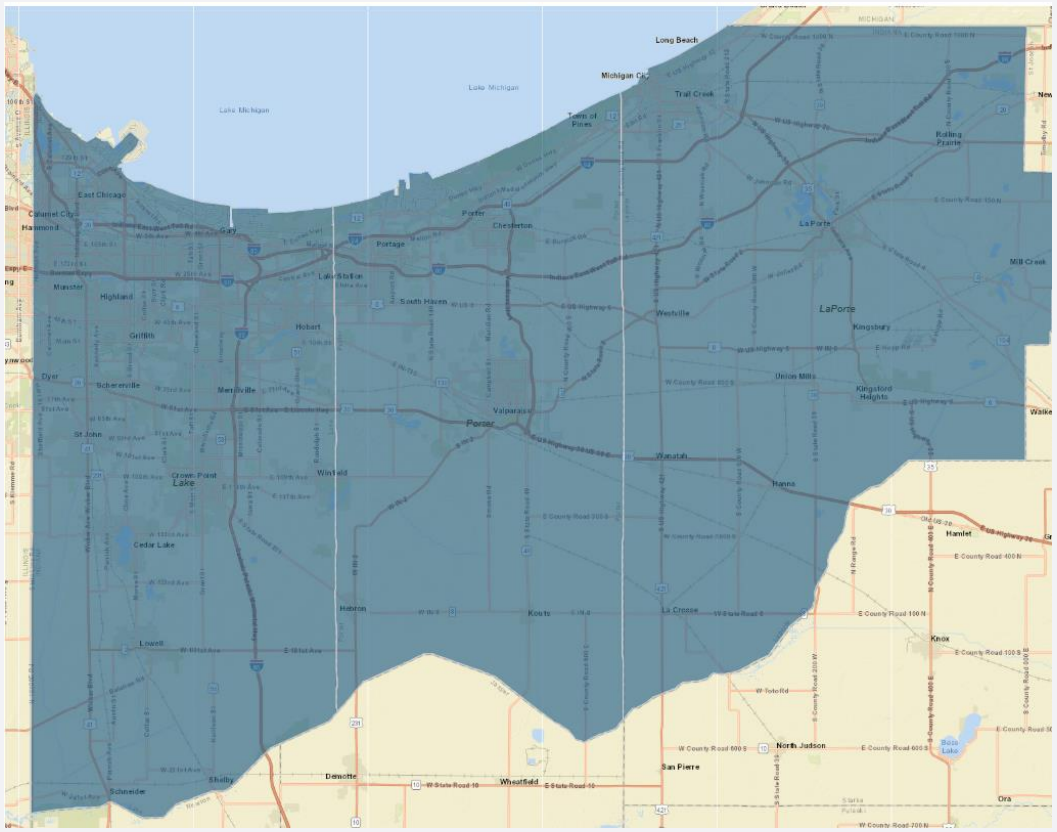
Introduction

Northwestern Indiana Regional Planning Commission

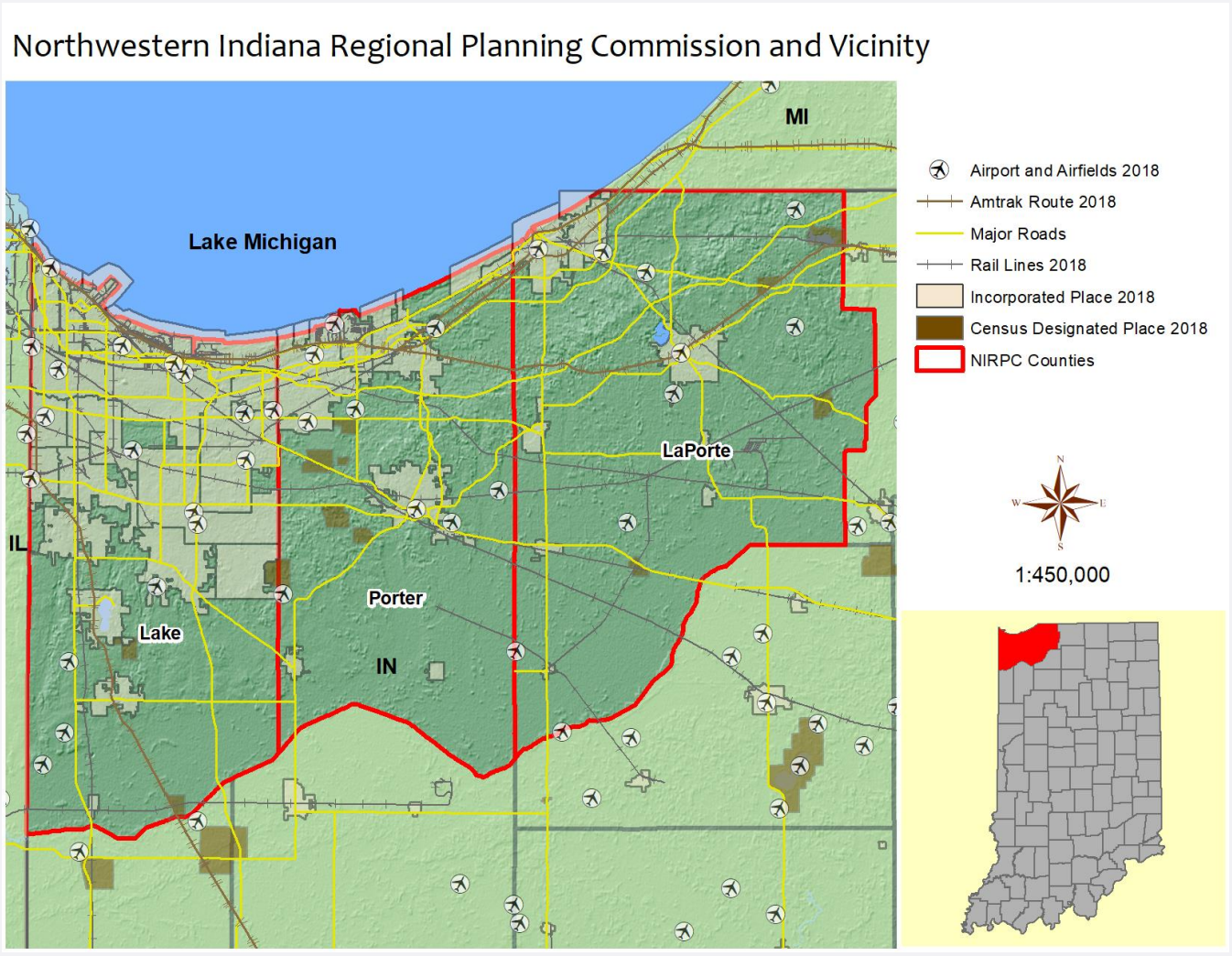
The Northwestern Indiana Regional Planning Commission is comprised of the following Indiana counties:

- Lake County
- Porter County
- LaPorte County



Assets

- Transportation assets are present



Data Snapshot // NIRPC

$ Economy

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Key Economic Indicators in NIRPC, Chicago Metro Area, and Indiana

	NIRPC (all jobs) (QCEW, non-QCEW, self-employed and proprietors)	Chicago-Naperville-Elgin, IL-IN Metro Area (QCEW, non-QCEW, self-employed and proprietors)	Indiana (QCEW, non-QCEW, self-employed and proprietors)
Jobs 2018	**377,807**	**5,932,474**	**3,962,379**
Jobs 2023	**399,365**	**6,211,128**	**4,218,876**
Job change 2018-2023	21,558	278,654	256,497
% Job change 2018-2023	6%	5%	6%
Average total earnings per job, 2023	**$60,723**	**$79,536**	**$63,481**
Cost of Living (COL)	**93.8**	**103.0**	**95.6**
COL Adjusted Average total earnings per job, 2023	**$64,737**	**$77,220**	**$66,403**
Establishments, 2023	**18,175**	**253,386**	**189,164**

- NIRPC has a COL advantage over Chicago Metro and the State of Indiana.

Data Snapshot // NIRPC

Source: Lightcast– 2024.4 (QCEW + non-QCEW + Self-employed + Proprietorships)

$ Economy

Key Economic Indicators in NIRPC, Chicago Metro Area, and Indiana

	NIRPC (all jobs) (QCEW, non-QCEW, self-employed and proprietors)	Chicago-Naperville-Elgin, IL-IN Metro Area (QCEW, non-QCEW, self-employed and proprietors)	Indiana (QCEW, non-QCEW, self-employed and proprietors)
Sales 2023	**$123.5 Billion**	**$1559.5 Billion**	**$973.1 Billion**
GRP 2023	**$52.9 Billion**	**$860.8 Billion**	**$475.8 Billion**
GRP per job 2023	**$132,508**	**$138,583**	**$112,787**
Exports per job 2022	**$200,046**	**$100,814**	**$129,817**
Total purchases 2023	**$ 57.2 Billion**	**$ 623.1 Billion**	**$422.1 Billion**
Within region	**39.7%**	**69.8%**	**51%**
Imported from outside of state/region	**60.3%**	**30.2%**	**49%**

- Nearly 60% of industry purchases (supply chain demand) are obtained from outside of NIRPC Region. Closing the economic leakages will be a relevant strategy.

Data Snapshot // NIRPC

Source: Lightcast– 2024.4 (QCEW + non-QCEW + Self-employed + Proprietorships)

Cluster Analysis

What are industry clusters?

6

Local and regional concentrations of competitive businesses and industries that

- **Buy and sell** from each other
- Use similar or **complementary technologies**
- Share a **labor pool**
- Share **supply chains**
- Share, leverage and promote **innovation**
- Include supporting **services** and specialized **infrastructure**
- Include high and low-value added **employment**
- Have career pathways available in the talent **ecosystem**
- Produce for **exports** outside the region
- Drive regional economic **growth and wealth creation**

Cluster Analysis

List of Clusters

There are 22 clusters developed by the PCRD that are used to determine the regional economic assets of the region.

- Primary Metal Manufacturing
- Transportation Equipment Manufacturing
- Glass & Ceramics
- Advanced Materials
- Chemicals
- Agri. & Food Processing
- Fabricated Metal Product Manufacturing
- Machinery Manufacturing
- Forest & Wood Product
- Trans & Log
- Arts & Entertainment
- Mining
- Biomedical/Biotech
- Energy
- Apparel & Textiles
- Edu.& Knowledge
- Printing & Publishing
- Defense & Security
- Business & Financial
- IT & Telecommunication
- Electrical Equip, Appliance & Component Manufacturing.
- Computer & Electronic Product Manufacturing

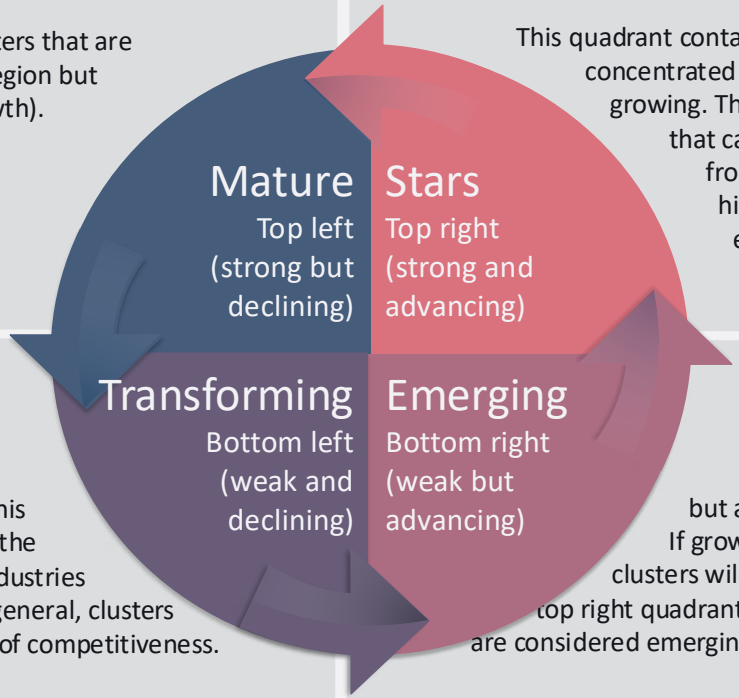
Cluster Analysis

How to interpret cluster data results

The graph's four quadrants tell a different story for each cluster.

This quadrant contains clusters that are more concentrated in the region but are declining (negative growth). These clusters typically fall into the lower quadrant as job losses cause a decline in concentration.

This quadrant contains clusters that are more concentrated in the region and are also growing. These clusters are strengths that can help a region stand out from the competition. Small, high-growth clusters can be expected to become more dominant over time.



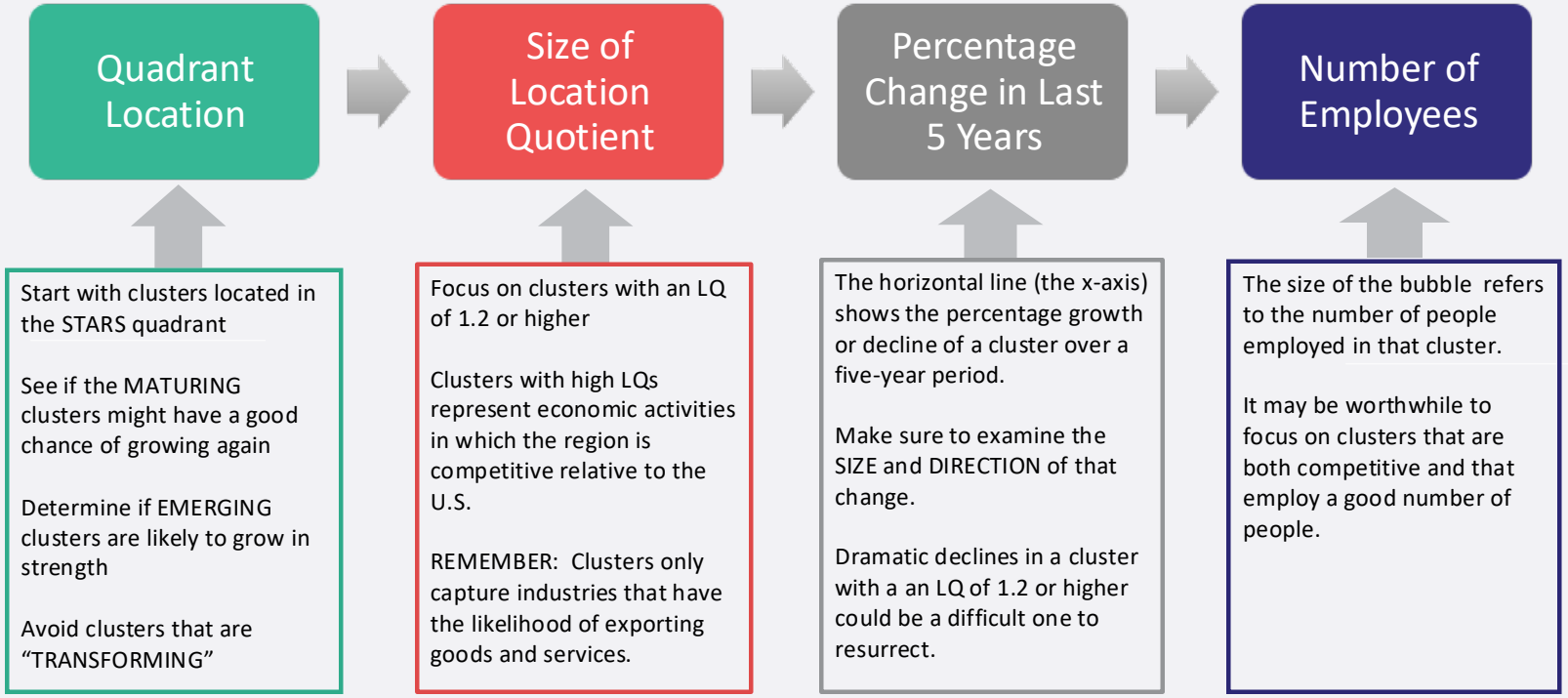
This quadrant contains clusters that are under-represented in the region (low concentration) and are also losing jobs. Clusters in this region may indicate a gap in the workforce pipeline if local industries anticipate a future need. In general, clusters in this quadrant show a lack of competitiveness.

This quadrant contains clusters that are under represented in the region but are growing, often quickly. If growth trends continue, these clusters will eventually move into the top right quadrant. Clusters in this quadrant are considered emerging strengths for the region.

Modified from: http://www.charlestonregionaldata.com/bubble-chart-explanation/

Cluster Analysis

Bubble chart: what to look at first



Cluster Analysis

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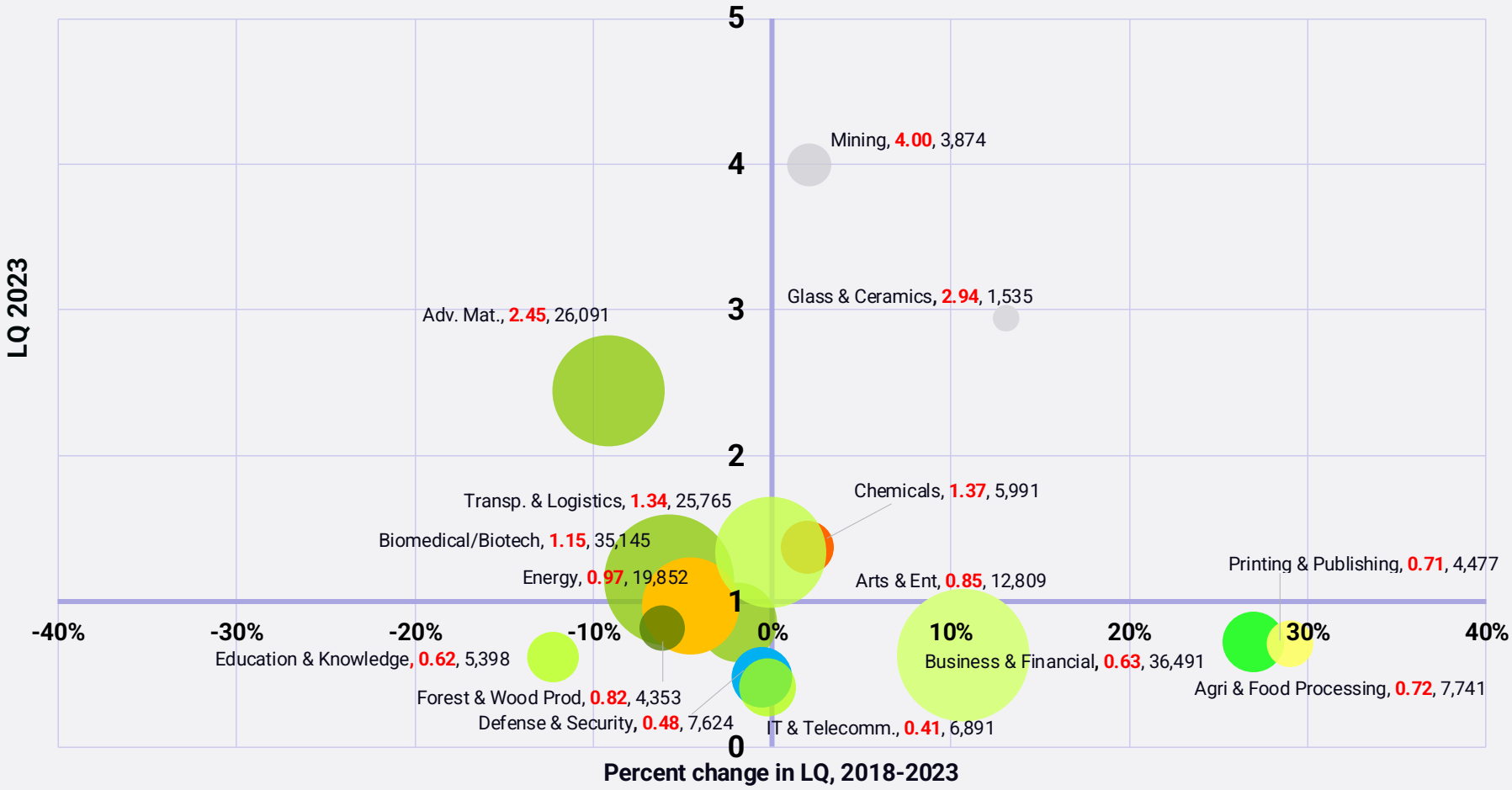
Industry Cluster Competitiveness (Bubble Chart) 2018-2023

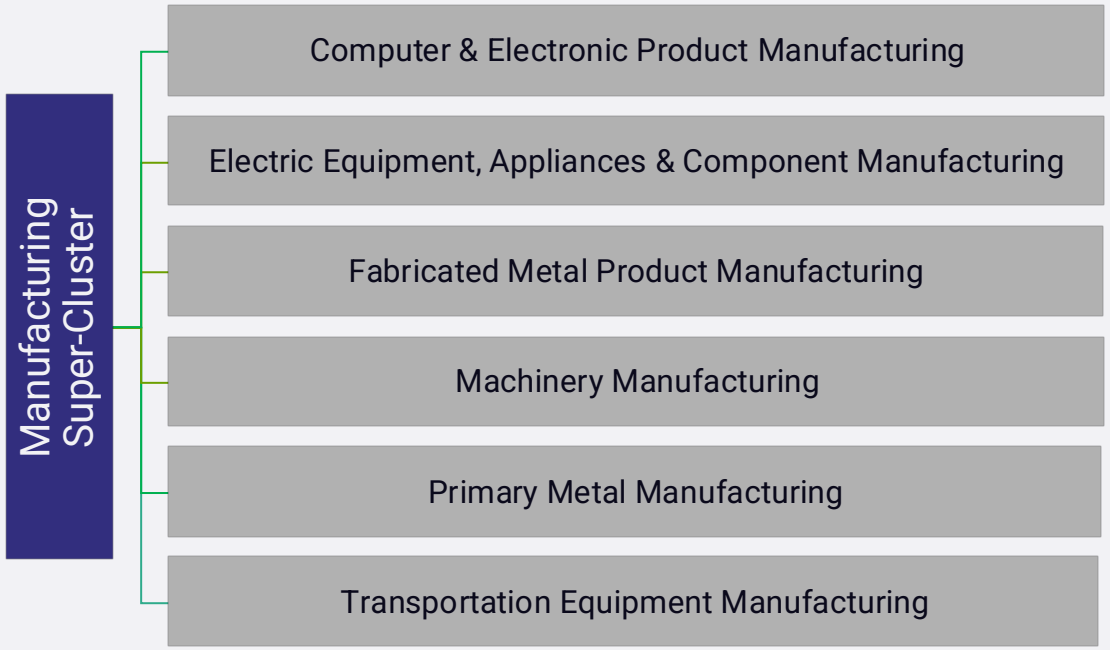


Data Snapshot // NIRPC

Source: Economic Modeling Specialists International (EMSI) – 2024.1 – QCEW Employees, Non-QCEW Employees, Self-Employed, and Extended Proprietors

Cluster Analysis

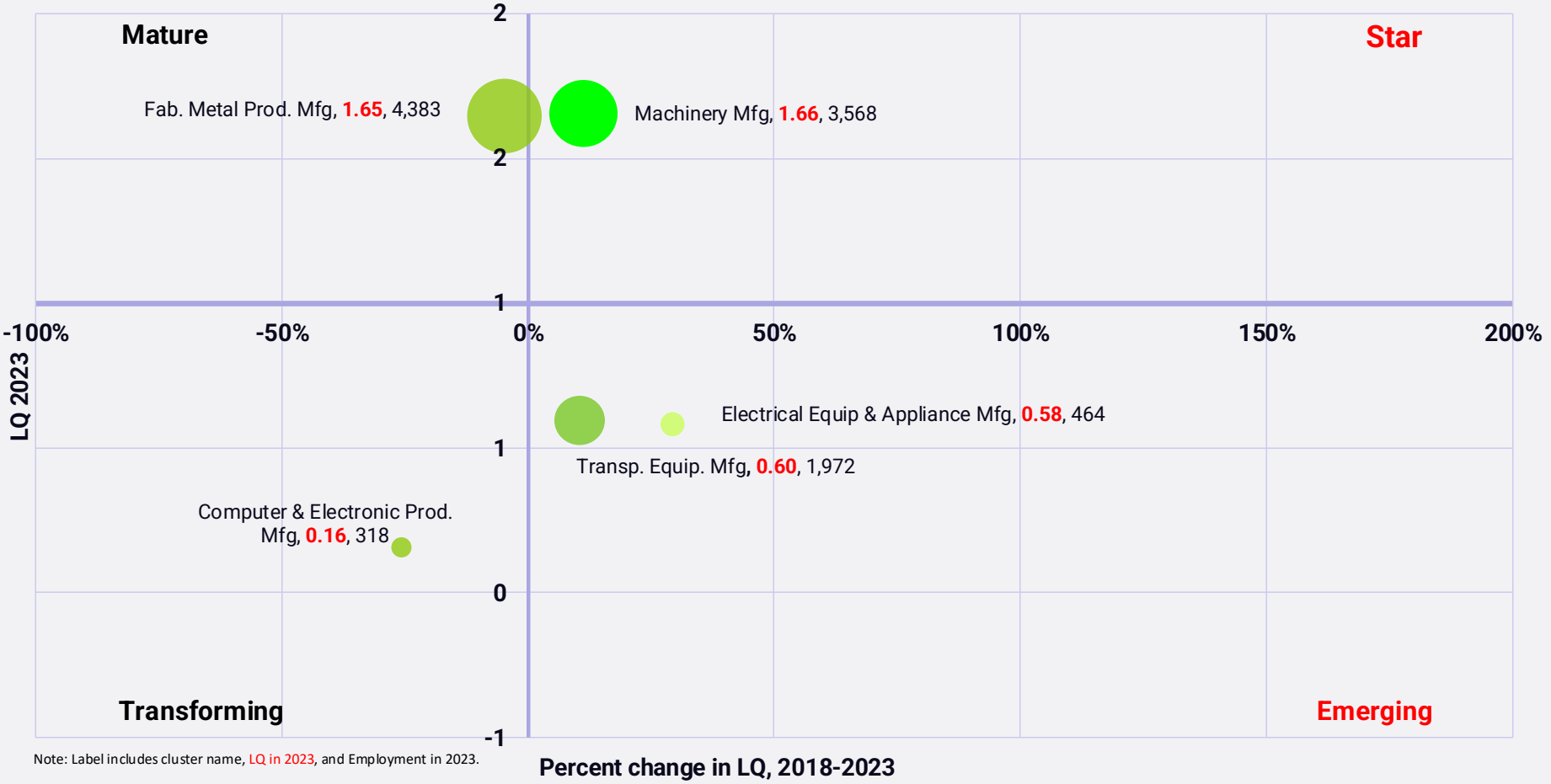
Manufacturing sub-clusters



Cluster Analysis

Mfg. Industry cluster competitiveness (Bubble Chart) 2018-2023

12



Note: Label includes cluster name, LQ in 2023, and Employment in 2023.

Note: LQ values cannot be negative. The Y-axis is extended to -1 to facilitate the visualization.

Data Snapshot // NIRPC

Source: Economic Modeling Specialists International (EMSI) – 2024.1 – QCEW Employees, Non-QCEW Employees, Self-Employed, and Extended Proprietors

Cluster Analysis

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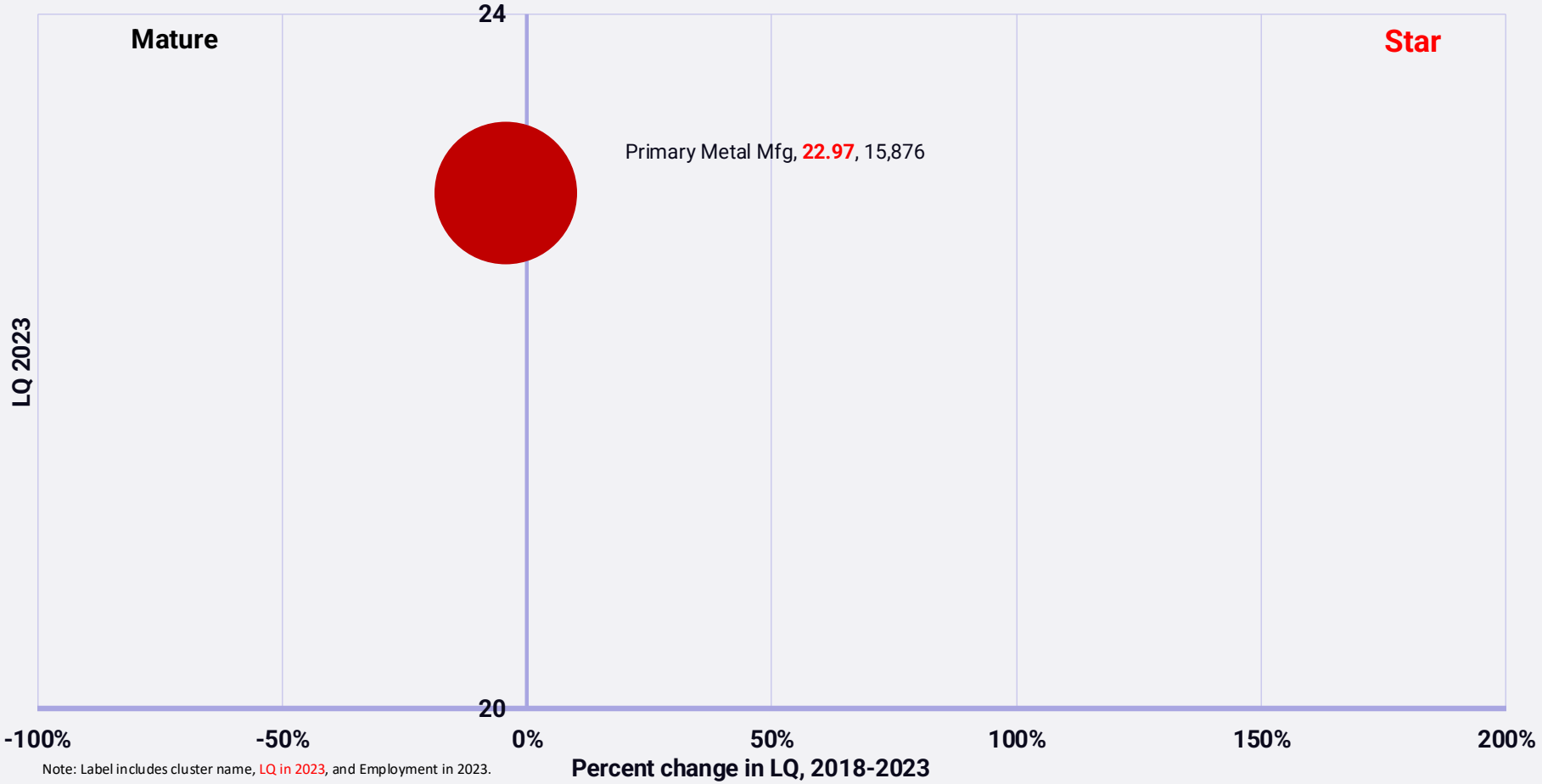
Mfg. Industry cluster competitiveness (Bubble Chart) 2018-2023



Note: Label includes cluster name, LQ in 2023, and Employment in 2023.

Note: LQ values cannot be negative. The Y-axis is extended to -1 to facilitate the visualization.

Data Snapshot // NIRPC

Source: Economic Modeling Specialists International (EMSI) – 2024.1 – QCEW Employees, Non-QCEW Employees, Self-Employed, and Extended Proprietors

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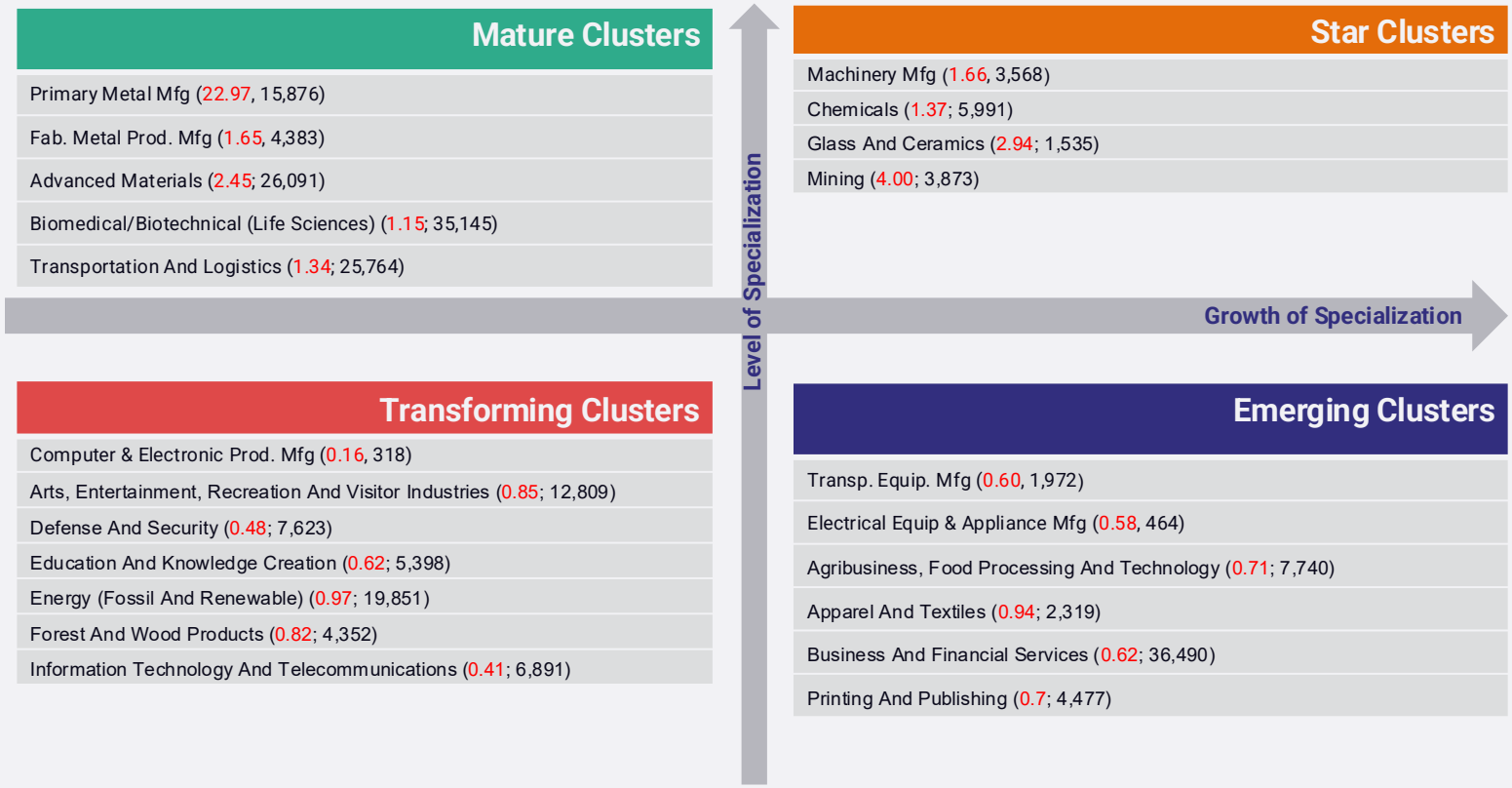
Cluster Analysis

NIRPC : Cluster Analysis 2018-2023



Data Snapshot // NIRPC

Note: 2023 Location Quotient and 2023 Jobs in parentheses

Appendix

Report Contributors

Authors/Editors

Indraneel Kumar, Ph.D.

Data Analysis

Indraneel Kumar, Ph.D.

Report Design

Tyler Wright

PURDUE UNIVERSITY | Center for Regional Development

Purdue Center for Regional Development

PURDUE UNIVERSITY
Center for Regional Development

Contact Us

1341 Northwestern Avenue
Purdue Schowe House
West Lafayette, IN 47906
765-494-7273
pcrd@purdue.edu

seeks to pioneer new ideas and strategies that contribute to regional collaboration, innovation and prosperity.

www.pcrd.purdue.edu

Northwestern Indiana Regional Planning Commission

Chemicals and Chemical-based Products Cluster Drill-down

Section 01

Economic indicators

Chemicals

Key Economic Indicators

2

Economic Indicators	Northwestern Indiana Regional Planning Commission (QCEW, non-QCEW, self-employed and proprietors)
Jobs 2023 (% of total jobs)	**5,991 (1.5%)**
Job change 2018-2023 (#, %)	**75 (+1%)**
Average total earnings per job 2023	**$100,551**
Cost of Living (COL)	**93.8**
Est. Establishment 2023 (% of total est.)	**215 (1.2%)**
GRP (Gross Regional Product) 2023	**$ 2.3 Billion**
GRP per job 2023 (productivity)	**$384,343**
Total purchases 2023	**$1.8 Billion**
Within region	**37.2%**
Imported from outside of region & state	**62.8%**
Number of sectors in chemicals and chemical-based cluster	**68**

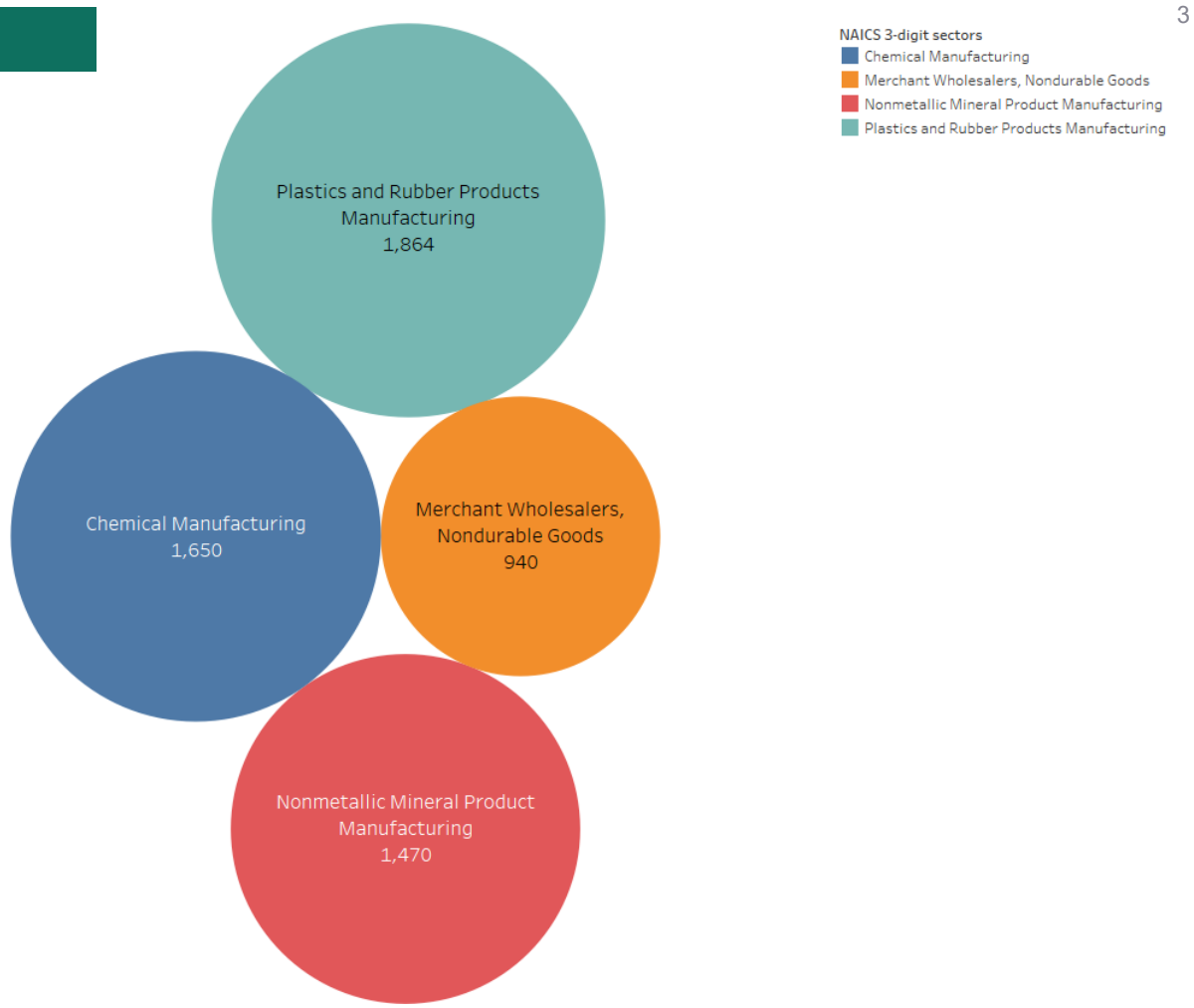
Data Snapshot // NIRPC

Note: Numbers in parentheses show percent values.

Source: Lightcast– 2024.4 (QCEW + non-QCEW + Self-employed + Proprietorships)

Chemicals

NAICS-3 digit	Description	Jobs 2023
325	Chemical Manufacturing	1,650
326	Plastics and Rubber Products Manufacturing	1,864
327	Nonmetallic Mineral Product Manufacturing	1,470
424	Merchant Wholesalers, Nondurable Goods	940



Source: Lightcast 2024.4 Class of Worker, industry cluster definitions by PCRD

Section 02

Competitiveness, economic leakages and Workforce

Regional Job Growth:

Three Key Components of the Shift-Share Analysis

Expected Change
The sum of the industrial mix and the national growth effects

Explains how much of the regional industry's growth is explained by the overall growth of the national economy

Share of regional industry growth explained by the growth of the specific industry sector at the national level

Explains how much of the change in a given industry is due to some unique competitive advantage that the region possesses

Note:
The calculations ensure no double counting of job change effects from national to regional levels

Chemicals

Shift-Share Analysis (Regional Performance) by Top Industry Sectors

Industries	Jobs 2023	National Trend 2018-2023 (A)	Industry Trend 2018-2023 (B)	Cumulative Expected Growth (C=A+B)	Actual Job Growth 2018-2023 (D)	Regional Performance 2018-2023 (D-C)
Unlaminated Plastics Film and Sheet (except Packaging) Manufacturing	760	57	-118	-60	102	↑ 162
All Other Plastics Product Manufacturing	570	50	-52	-2	0	↑ 2
Clay Building Material and Refractories Manufacturing	557	42	-82	-41	80	↑ 121
Other Chemical and Allied Products Merchant Wholesalers	497	35	-22	12	101	↑ 89
Pharmaceutical Preparation Manufacturing	336	6	2	8	267	↑ 258
Gypsum Product Manufacturing	285	22	-28	-6	31	↑ 37
Ground or Treated Mineral and Earth Manufacturing	280	29	-5	24	-51	-75
Other Basic Inorganic Chemical Manufacturing	267	27	-16	11	-41	-52
Industrial Gas Manufacturing	250	26	10	35	-43	-79
Petroleum Bulk Stations and Terminals	246	22	-10	12	-4	-15
Plastics Plumbing Fixture Manufacturing	176	18	-4	14	-34	-48
Plastics Material and Resin Manufacturing	175	15	-9	5	7	↑ 1
Plastics Bottle Manufacturing	151	12	-6	6	16	↑ 10
Petroleum and Petroleum Products Merchant Wholesalers (except Bulk Stations and Terminals)	143	14	-17	-3	-13	-9
All Other Basic Organic Chemical Manufacturing	139	5	-1	4	83	↑ 79

Note: Upward arrow (↑) indicates regional competitiveness.

Source: Lightcast 2024.4 Class of Worker, industry cluster definitions by PCRD

Chemicals

Shift-Share Analysis 2023

Industries that Outperformed

- Unlaminated Plastics Film and Sheet (except Packaging) Manufacturing
- All Other Plastics Product Manufacturing
- Clay Building Material and Refractories Manufacturing
- Other Chemical and Allied Products Merchant Wholesalers
- Pharmaceutical Preparation Manufacturing
- Gypsum Product Manufacturing
- Plastics Material and Resin Manufacturing
- Plastics Bottle Manufacturing
- All Other Basic Organic Chemical Manufacturing

Industries that Underperformed

- Ground or Treated Mineral and Earth Manufacturing
- Other Basic Inorganic Chemical Manufacturing
- Industrial Gas Manufacturing
- Petroleum Bulk Stations and Terminals
- Plastics Plumbing Fixture Manufacturing
- Petroleum and Petroleum Products Merchant Wholesalers (except Bulk Stations and Terminals)

- A few strong industry sectors include unlaminated plastics film and sheet manufacturing, pharmaceutical preparation manufacturing, clay building materials and refractories manufacturing, and all other basic organic chemical manufacturing.

Source: Lightcast 2024.4 Class of Worker, industry cluster definitions by PCRD

Chemicals

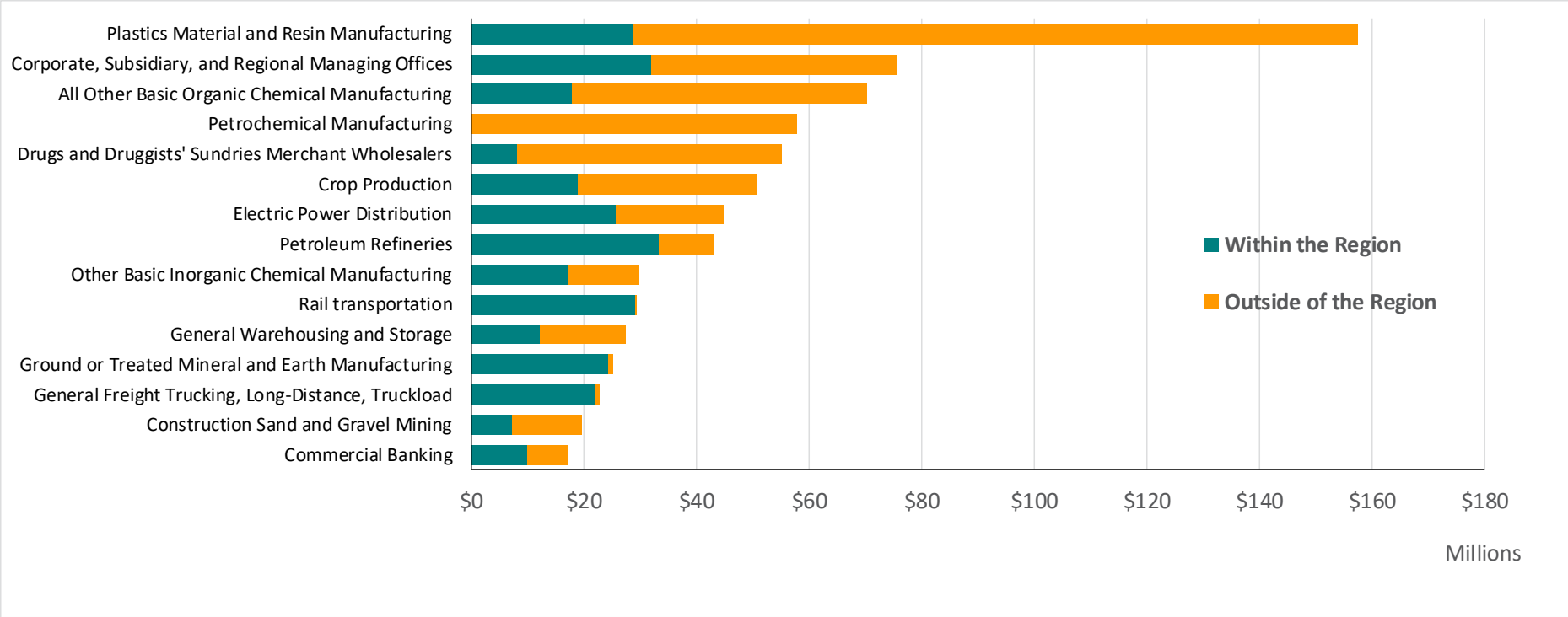
Leakage analysis: Top 15 Industries by Inputs

Industries	Estimated Input ($ Million), 2023	% In-Region	% Out of Region
Plastics Material and Resin Manufacturing	$157.4	18.2%	81.8%
Corporate, Subsidiary, and Regional Managing Offices	$75.6	42.2%	57.8%
All Other Basic Organic Chemical Manufacturing	$70.1	25.3%	74.7%
Petrochemical Manufacturing	$57.9	0.0%	100.0%
Drugs and Druggists' Sundries Merchant Wholesalers	$55.2	14.6%	85.4%
Crop Production	$50.6	37.5%	62.5%
Electric Power Distribution	$44.8	57.6%	42.4%
Petroleum Refineries	$43.0	77.4%	22.6%
Other Basic Inorganic Chemical Manufacturing	$29.8	57.7%	42.3%
Rail transportation	$29.3	99.4%	0.6%
General Warehousing and Storage	$27.4	44.3%	55.7%
Ground or Treated Mineral and Earth Manufacturing	$25.3	96.6%	3.4%
General Freight Trucking, Long-Distance, Truckload	$22.8	96.8%	3.2%
Construction Sand and Gravel Mining	$19.5	36.9%	63.1%
Commercial Banking	$17.3	57.2%	42.8%

Source: Lightcast 2024.4 Class of Worker, industry cluster definitions by PCRD

Chemicals

Leakage analysis 2023

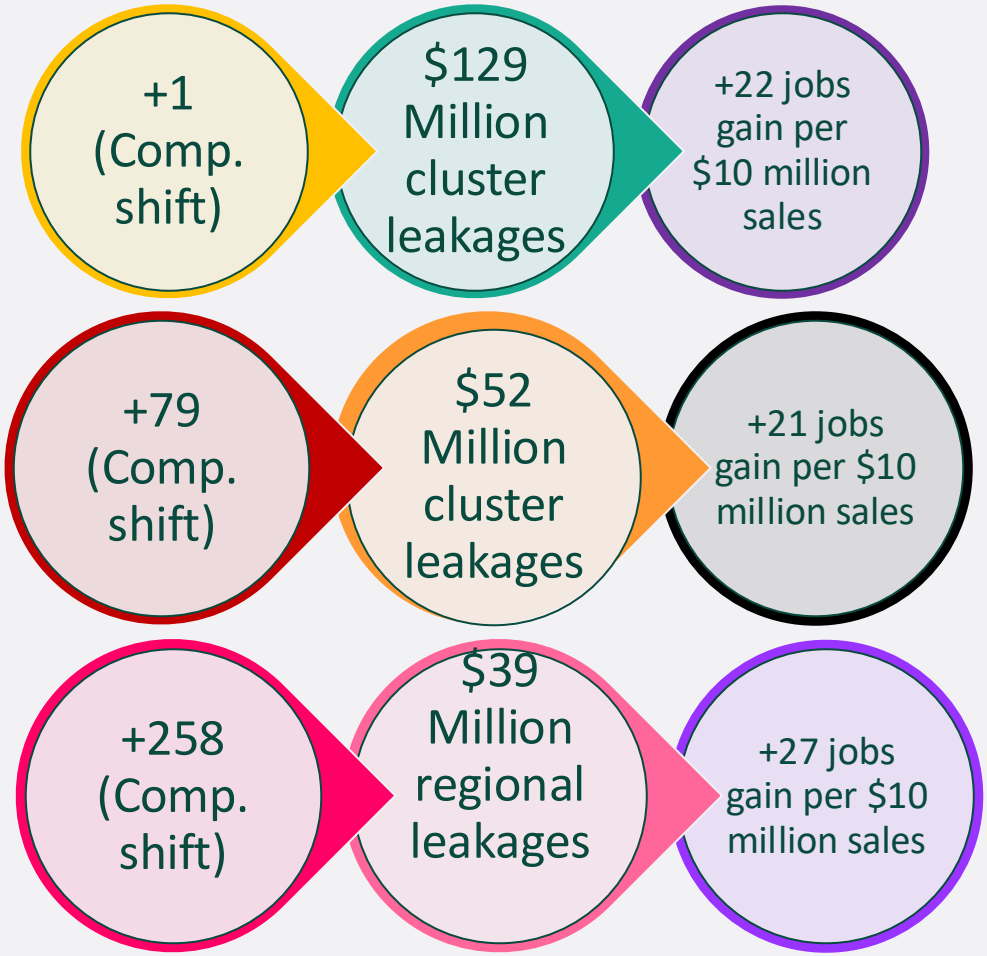


- Plastics material and resin mfg. had $129 million economic leakage in 2023. All other basic organic chemical mfg. had $52 million leakages in 2023.

Source: Lightcast 2024.4 Class of Worker, industry cluster definitions by PCRD

Chemicals

Industry Competitive Shift, Leakages, and Multipliers



Data Snapshot // NIRPC

Source: Lightcast– Q4 2024

Chemicals

Top occupations

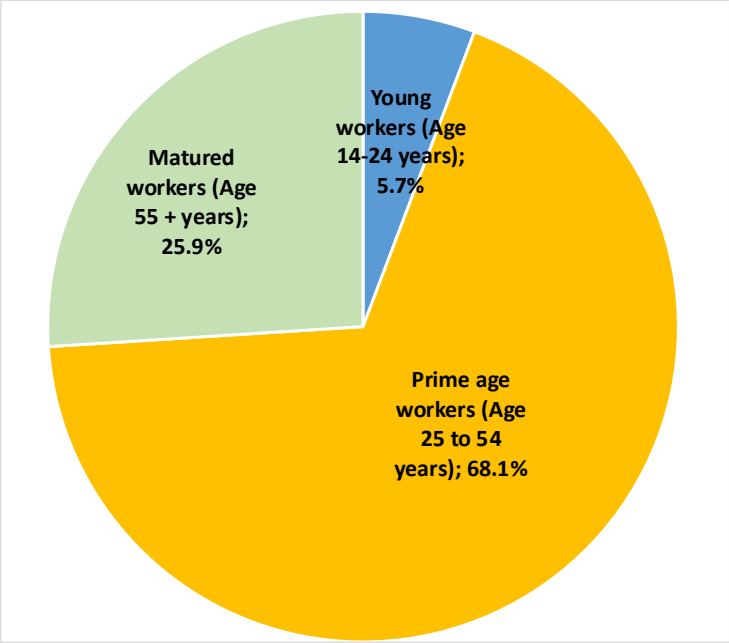
Occupations	Jobs 2023	% Change 2018-2023	% of Total Jobs in Cluster 2023	Median Hour Earnings	Entry level Education	Automation
Miscellaneous Assemblers and Fabricators	312	10%	5.2%	$19.54	High school diploma or equivalent	112.6
Heavy and Tractor-Trailer Truck Drivers	277	5%	4.6%	$28.66	Postsecondary nondegree award	110.1
Chemical Equipment Operators and Tenders	264	374%	4.4%	$34.17	High school diploma or equivalent	110.4
Industrial Machinery Mechanics	255	11%	4.3%	$37.37	High school diploma or equivalent	109.8
Packaging and Filling Machine Operators and Tenders	238	60%	4.0%	$20.57	High school diploma or equivalent	116.9
First-Line Supervisors of Production and Operating Workers	224	10%	3.7%	$31.55	High school diploma or equivalent	88.6
Industrial Truck and Tractor Operators	215	173%	3.6%	$21.54	No formal educational credential	119.5
Laborers and Freight, Stock, and Material Movers, Hand	212	12%	3.5%	$18.00	No formal educational credential	117.2
Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	184	-27%	3.1%	$33.77	High school diploma or equivalent	91.5
Extruding and Drawing Machine Setters, Operators, and Tenders, Metal and Plastic	181	157%	3.0%	$20.32	High school diploma or equivalent	116.6
Extruding, Forming, Pressing, and Compacting Machine Setters, Operators, and Tenders	162	-24%	2.7%	$22.36	High school diploma or equivalent	117.3
Cutting and Slicing Machine Setters, Operators, and Tenders	143	383%	2.4%	$24.61	High school diploma or equivalent	116.6
Inspectors, Testers, Sorters, Samplers, and Weighers	141	65%	2.4%	$23.55	High school diploma or equivalent	106.1
Chemical Plant and System Operators	140	7%	2.3%	$24.30	High school diploma or equivalent	101.7
Shipping, Receiving, and Inventory Clerks	136	52%	2.3%	$20.64	High school diploma or equivalent	109.1

Data Snapshot // NIRPC

Source: Lightcast 2024.4 Class of Worker, industry cluster definitions by PCRD

Chemicals

Worker demographics 2023



- Hispanic workers (13.7%)
- Black or African-American workers (9.9%)
- Asian workers (1.2%)
- White workers (74.0%)
- American Indian or Alaska Native (0.1%)
- Others (1.1%)

- Male workers (78%)
- Female workers (22%)

- Slightly more than one in four workers (25.9%) are matured (aged 55 years or more) workers in NIRPC in this cluster. At the state level (Indiana), the proportion of matured workers is 26%, and female workers is 33%.

Source: Lightcast 2024.4 Class of Worker, industry cluster definitions by PCRD

Section 03

Jobs Postings (Labor demand)

Job Posting

Chemical Cluster Jobs Postings Overview

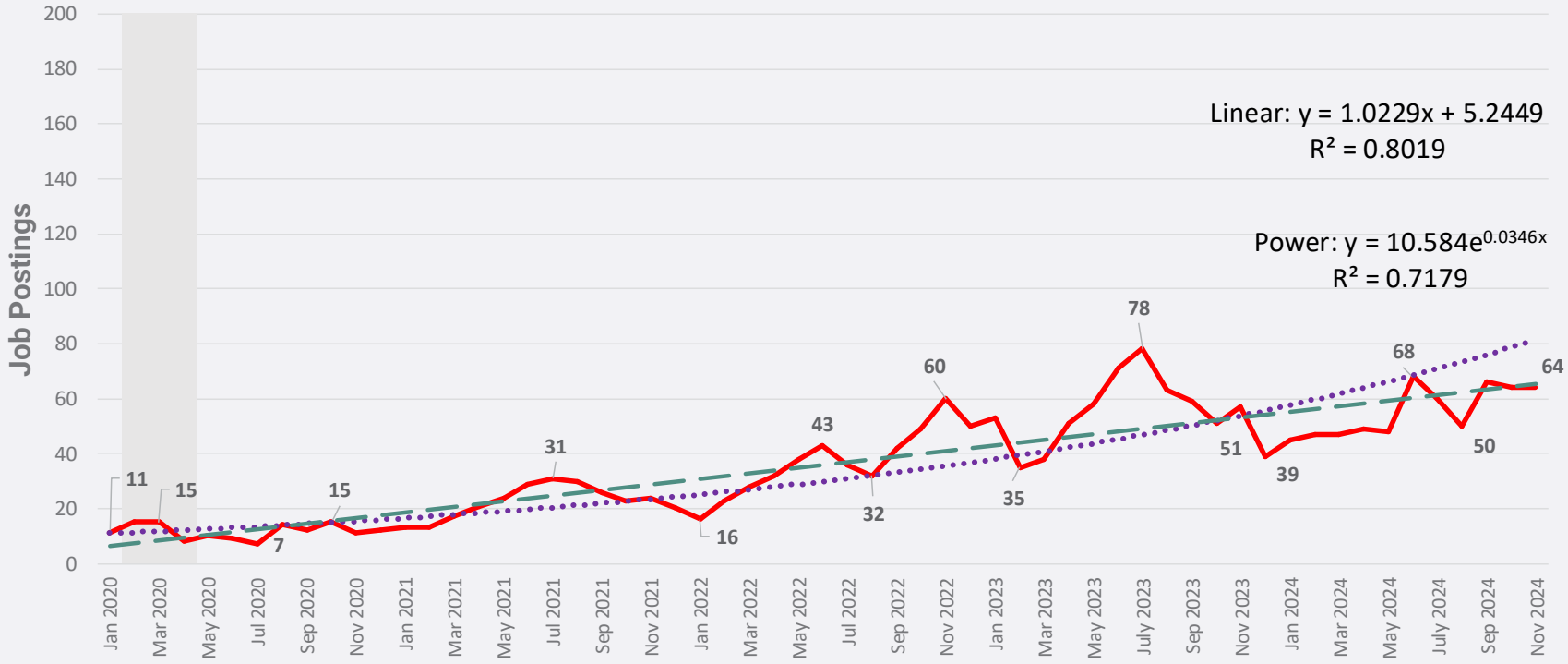
- From January 2020 to November 2024, a total of 3,638 unique jobs postings happened in industries within the chemical cluster. The average monthly unique jobs postings was 36 per month.
- The median posting duration was 28 days. Posting intensity was 3:1.
- Percent change between **January 2020 and November 2024** was **+482%.**
- 188 employers in Chemical cluster competed for talent during this period.
- Hourly median advertised salary was $25.91 per hour (23% postings included salaries)
- Job postings were advertised in 50 different industries within NIRPC Region. **Industrial Gas Manufacturing**, **Pharmaceutical Preparation Manufacturing**, **Paint and Coating Manufacturing, Other Chemical and Allied Products Merchant Wholesalers**, and **Plastics Packaging Film and Sheet (including Laminated) Manufacturing** had more than 200 unique jobs postings during **January 2020 and November 2024**.
- Top companies in Chemicals cluster posting jobs include Linde, Praxair, Grifols, Monosol, Sherwin-Williams, Bausch Health, and Then Estée Lauder Companies.

Data Snapshot // NIRPC

Source: Lightcast– Q4 2024

Job Posting

Chemical Cluster: Job Postings Time Series (Jan 2020 to November 2024)



- Unique jobs postings are not seasonally adjusted and hence may show seasonal effects. Jobs postings are in a recovery and growth mode following the COVID-19 induced recession (February 2020 to April 2020.

Source: Lightcast– Q4 2024

Job Posting

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Chemical Cluster Latest Unique Jobs Postings

Latest 1-Month Unique Jobs Postings Oct 2024 - Nov 2024

Latest 12-Month Unique Jobs Postings Nov 2023 - Nov 2024

- Industrial gas manufacturing had negative growth in jobs and competitive shift from 2018-2023. The labor demand is positive in 2024.

Data Snapshot // NIRPC

Source: Lightcast– Q4 2024

Job Posting

Top companies and top industries postings (January 2020 to November 2024)

Top Companies Postings	Top Industries
1. Linde	1. Industrial Gas Manufacturing
2. Praxair	2. Pharmaceutical Preparation Manufacturing
3. Grifols	3. Paint and Coating Manufacturing
4. Monosol	4. Other Chemical and Allied Products Merchant Wholesalers
5. Sherwin-Williams	5. Plastics Packaging Film and Sheet (including Laminated) Manufacturing
6. Bausch Health	6. All Other Plastics Product Manufacturing
7. The Estée Lauder Companies	7. Plastics Material and Resin Manufacturing
8. Bridgestone Corporation	8. All Other Misc. Chemical Product and Preparation Mfg.
9. Sun Chemical Co. Ltd	9. Other Basic Inorganic Chemical Manufacturing
10. Bulkmatic Transport	10. Petroleum Bulk Stations and Terminals
11. Aquestive Therapeutics	11. Toilet Preparation Manufacturing
12. Airgas	12. Clay Building Material and Refractories Manufacturing
13. American Renolit Corporation	13. Tire Manufacturing (except Retreading)
14. AbbVie	

- Farmers, farm hand and manual worker jobs advertisements are based on analog and not online services.

Source: Lightcast– Q4 2024

Section 04

Economic Outlook

Outlook

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U.S. Industry Economic Outlook

- **Contract Pharmaceutical Research Services** in the U.S. had $20.9 bn revenue with a profit margin of 16.3% in 2023. It is a vital component for pharmaceutical companies to reduce the costs. Companies face US FDA regulatory environment, use specialized knowledge, and the industry is still in the growth stage.
- **Generic Pharmaceutical Manufacturing** in the U.S. had $50.3 bn revenue with a profit margin of 6% in 2023. This industry has been steadily expanding in the U.S. Companies face US FDA regulatory environment, high competition, but high revenue per employee.
- There is opportunity to connect with the **Heartland Bioworks** (Indiana's TechHub). Also, specific NSF Engines are focused on enabling pharmaceutical manufacturing within the U.S., to reduce high levels of imports.
- **Organic Chemical Manufacturing** in the U.S. had $160 bn revenue with a profit margin of 4% in 2023. Companies face various federal, state and local and environmental regulations.
- **Plastics Material and Resin Manufacturing** in the U.S. had $103.9 bn revenue with a profit margin of 6.1% in 2023. Companies face stiff environmental regulations and tariffs can impact exports.

Source: IBIS

Appendix

Report Contributors

Authors/Editors

Indraneel Kumar, Ph.D.
Ben St. Germain
Annie Cruz-Porter, Ph.D.
Taoyi Sun
Hyewon Shin

Data Analysis

Indraneel Kumar, Ph.D.
Ben St. Germain
Taoyi Sun

Report Design

Tyler Wright

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seeks to pioneer new ideas and strategies that contribute to regional collaboration, innovation and prosperity.

www.pcrd.purdue.edu

Contact Us

1341 Northwestern Avenue
Purdue Schowe House
West Lafayette, IN 47906
765-494-7273
pcrd@purdue.edu

Northwestern Indiana Regional Planning Commission

Glass and Ceramics Cluster Drill-down

Section 01

Economic indicators

Glass and Ceramics

Key Economic Indicators

Economic Indicators	Northwestern Indiana Regional Planning Commission (QCEW, non-QCEW, self-employed and proprietors)
Jobs 2023 (% of total jobs)	**1,535 (0.4%)**
Job change 2018-2023 (#, %)	**39 (+3%)**
Average total earnings per job 2023	**$86,634**
Cost of Living (COL)	**93.8**
Est. Establishment 2023 (% of total est.)	**51 (0.3%)**
GRP (Gross Regional Product) 2023	**$ 282.4 Million**
GRP per job 2023 (productivity)	**$183,966**
Total purchases 2023	**$273 Million**
Within region	**47.4%**
Imported from outside of region & state	**52.6%**
Number of sectors in chemicals and chemical-based cluster	**11**

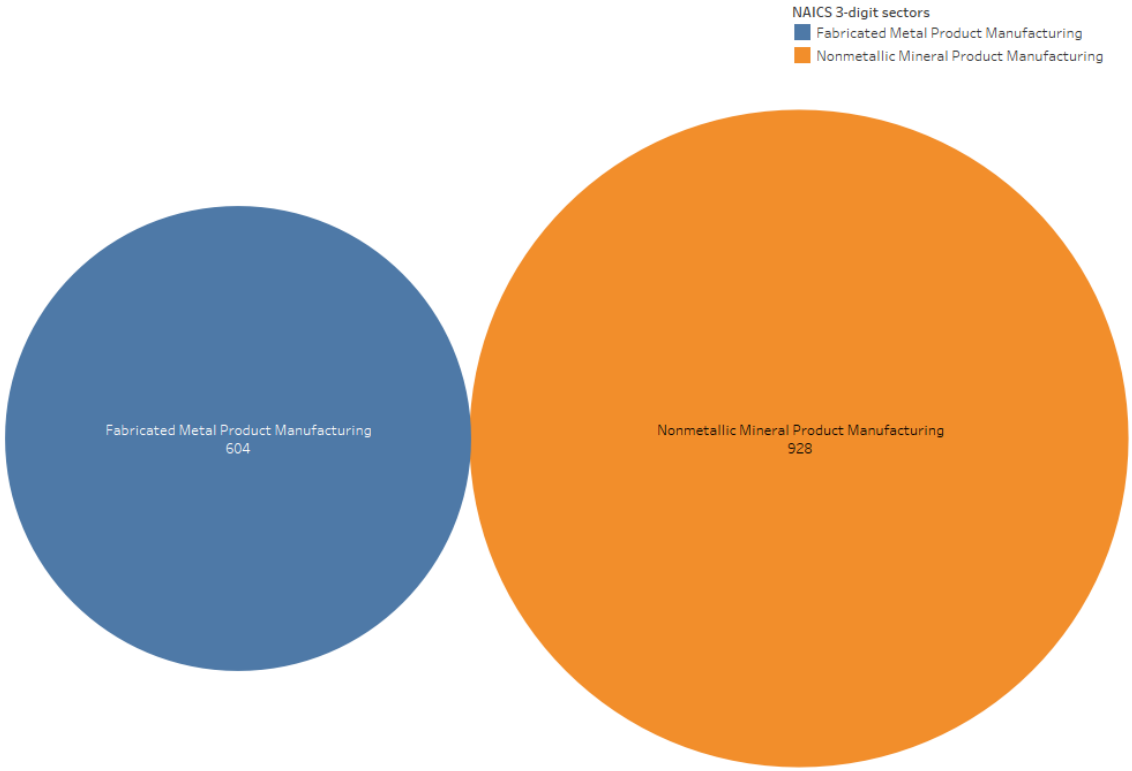
Data Snapshot // NIRPC

Note: Numbers in parentheses show percent values.

Source: Lightcast– 2024.4 (QCEW + non-QCEW + Self-employed + Proprietorships)

Glass and Ceramics

NAICS-3 digit	Description	Jobs 2023
327	Nonmetallic Mineral Product Manufacturing	928
332	Fabricated Metal Product Manufacturing	604



Source: Lightcast 2024.4 Class of Worker, industry cluster definitions by PCRD

Section 02

Competitiveness, economic leakages and Workforce

Regional Job Growth:

Three Key Components of the Shift-Share Analysis

Expected Change
The sum of the industrial mix and the national growth effects

Explains how much of the regional industry's growth is explained by the overall growth of the national economy

Share of regional industry growth explained by the growth of the specific industry sector at the national level

Explains how much of the change in a given industry is due to some unique competitive advantage that the region possesses

Note:
The calculations ensure no double counting of job change effects from national to regional levels

Glass and Ceramics

Shift-Share Analysis (Regional Performance) by Top Industry Sectors

Industries	Jobs 2023	National Trend 2018-2023 (A)	Industry Trend 2018-2023 (B)	Cumulative Expected Growth (C=A+B)	Actual Job Growth 2018-2023 (D)	Regional Performance 2018-2023 (D-C)
Clay Building Material and Refractories Manufacturing	557	42	-82	-41	80	↑ 121
Metal Coating, Engraving (except Jewelry and Silverware), and Allied Services to Manufacturers	483	40	-37	3	28	↑ 25
Ground or Treated Mineral and Earth Manufacturing	280	29	-5	24	-51	-75
Electroplating, Plating, Polishing, Anodizing, and Coloring	122	18	-41	-23	-86	-64
All Other Miscellaneous Nonmetallic Mineral Product Manufacturing	67	1	-2	0	51	↑ 52
Glass Product Manufacturing Made of Purchased Glass	14	1	-1	-1	Insf. Data	↑ 6
Pottery, Ceramics, and Plumbing Fixture Manufacturing*	<10	0	0	0	Insf. Data	↑ 3
Other Pressed and Blown Glass and Glassware Manufacturing*	<10	0	0	0	Insf. Data	↑ 8

* Pottery, ceramics and plumbing fixtures and Other pressed and brown glass and glassware manufacturing sectors have appeared during 2018-2023 period.

Note: Upward arrow (↑) indicates regional competitiveness.

Source: Lightcast 2024.4 Class of Worker, industry cluster definitions by PCRD

Glass and Ceramics

Shift-Share Analysis 2023

Industries that Outperformed

- Clay Building Material and Refractories Manufacturing
- Metal Coating, Engraving (except Jewelry and Silverware), and Allied Services to Manufacturers
- All Other Miscellaneous Nonmetallic Mineral Product Manufacturing
- Glass Product Manufacturing Made of Purchased Glass
- Pottery, Ceramics, and Plumbing Fixture Manufacturing
- Other Pressed and Blown Glass and Glassware Manufacturing

Industries that Underperformed

- Ground or Treated Mineral and Earth Manufacturing
- Electroplating, Plating, Polishing, Anodizing, and Coloring

- A few strong industry sectors include clay building material and refractories manufacturing, all other misc. nonmetallic mineral product manufacturing; metal coating, engraving (except jewelry and silverware), and allied services to manufacturers, etc.

Source: Lightcast 2024.4 Class of Worker, industry cluster definitions by PCRD

Glass and Ceramics

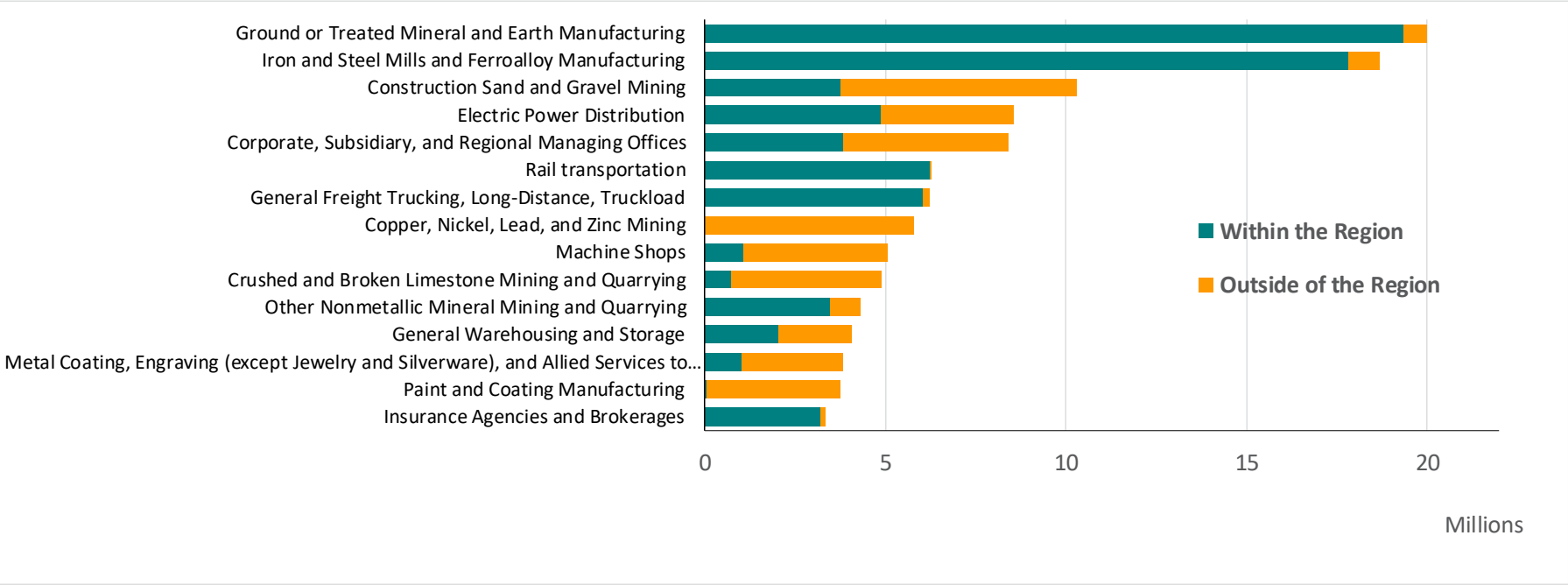
Leakage analysis: Top 15 Industries by Inputs

Industries	Estimated Input ($ Million), 2023	% In-Region	% Out of Region
Ground or Treated Mineral and Earth Manufacturing	$20.02	96.8%	3.2%
Iron and Steel Mills and Ferroalloy Manufacturing	$18.68	95.4%	4.6%
Construction Sand and Gravel Mining	$10.30	36.5%	63.5%
Electric Power Distribution	$8.54	57.4%	42.6%
Corporate, Subsidiary, and Regional Managing Offices	$8.42	45.4%	54.6%
Rail transportation	$6.27	99.4%	0.6%
General Freight Trucking, Long-Distance, Truckload	$6.25	97.0%	3.0%
Copper, Nickel, Lead, and Zinc Mining	$5.78	0.0%	100.0%
Machine Shops	$5.05	21.2%	78.8%
Crushed and Broken Limestone Mining and Quarrying	$4.87	15.2%	84.8%
Other Nonmetallic Mineral Mining and Quarrying	$4.30	80.5%	19.5%
General Warehousing and Storage	$4.08	50.3%	49.7%
Metal Coating, Engraving (except Jewelry and Silverware), and Allied Services to Manufacturers	$3.82	26.9%	73.1%
Paint and Coating Manufacturing	$3.77	1.8%	98.2%
Insurance Agencies and Brokerages	$3.37	95.2%	4.8%

Source: Lightcast 2024.4 Class of Worker, industry cluster definitions by PCRD

Glass and Ceramics

Leakage analysis 2023



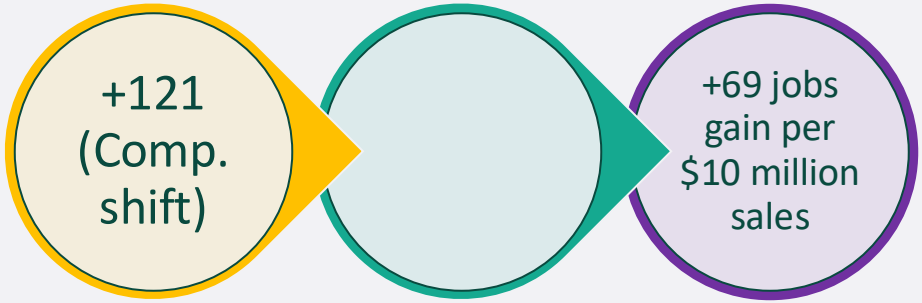
- Construction sand and gravel mining had $6.5 million economic leakage in 2023. Copper, nickel, lead and zinc mining had $5.8 million leakages in 2023.

Source: Lightcast 2024.4 Class of Worker, industry cluster definitions by PCRD

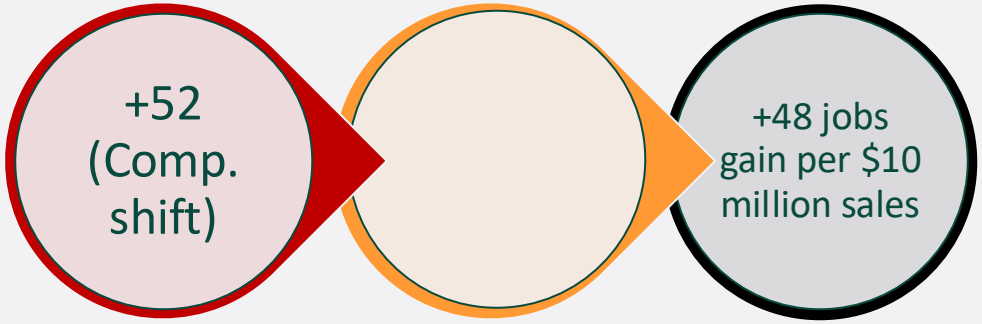
Glass and Ceramics

Industry Competitive Shift, Leakages, and Multipliers

Clay Building Material and Refractories Mfg.



All other misc. nonmetallic mineral product mfg.



Metal coating, engraving and allied services

Data Snapshot // NIRPC

Source: Lightcast– Q4 2024

Glass and Ceramics

Top occupations

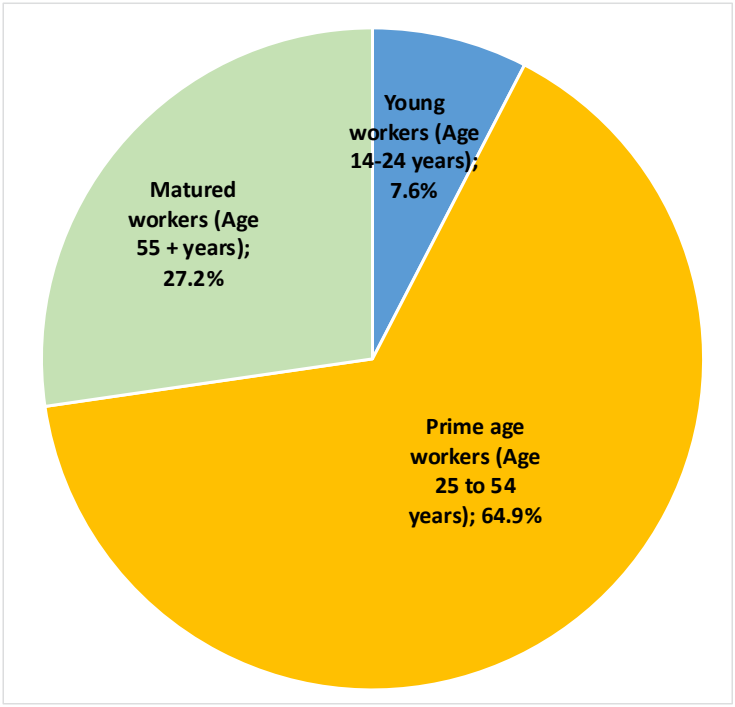
Occupations	Jobs 2023	% Change 2018-2023	% of Total Jobs in Cluster 2023	Median Hour Earnings	Entry level Education	Automation
Plating Machine Setters, Operators, and Tenders, Metal and Plastic	166	110%	10.8%	$17.10	High school diploma or equivalent	122
Heavy and Tractor-Trailer Truck Drivers	135	28%	8.8%	$28.66	Postsecondary nondegree award	110.1
Cutting and Slicing Machine Setters, Operators, and Tenders	70	676%	4.6%	$24.61	No formal educational credential	116.6
Laborers and Freight, Stock, and Material Movers, Hand	70	40%	4.5%	$18.00	No formal educational credential	117.2
Industrial Truck and Tractor Operators	69	215%	4.5%	$21.54	High school diploma or equivalent	119.5
First-Line Supervisors of Production and Operating Workers	67	3%	4.3%	$31.55	High school diploma or equivalent	88.6
Miscellaneous Assemblers and Fabricators	61	16%	4.0%	$19.54	High school diploma or equivalent	112.6
Industrial Machinery Mechanics	53	36%	3.4%	$37.37	High school diploma or equivalent	109.8
Extruding, Forming, Pressing, and Compacting Machine Setters, Operators, and Tenders	52	9%	3.4%	$22.36	High school diploma or equivalent	117.3
Inspectors, Testers, Sorters, Samplers, and Weighers	38	52%	2.5%	$23.55	High school diploma or equivalent	106.1
Coating, Painting, and Spraying Machine Setters, Operators, and Tenders	36	-13%	2.3%	$22.81	High school diploma or equivalent	118.3
Mixing and Blending Machine Setters, Operators, and Tenders	31	-65%	2.0%	$25.18	High school diploma or equivalent	117.1
Shipping, Receiving, and Inventory Clerks	29	45%	1.9%	$20.64	High school diploma or equivalent	109.1
Maintenance and Repair Workers, General	26	-24%	1.7%	$21.95	High school diploma or equivalent	109.6
Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	25	-33%	1.7%	$33.77	High school diploma or equivalent	91.5

Data Snapshot // NIRPC

Source: Lightcast 2024.4 Class of Worker, industry cluster definitions by PCRD

Glass and Ceramics

Worker demographics 2023



- Hispanic workers (14.4%)
- Black or African-American workers (10.5%)
- Asian workers (0.7%)
- White workers (73.2%)
- American Indian or Alaska Native (0%)
- Others (1.2%)

- Male workers (86%)
- Female workers (14%)

- More than one in four workers (27.2%) are matured (aged 55 years or more) workers in NAICS in this cluster.

Source: Lightcast 2024.4 Class of Worker, industry cluster definitions by PCRD

Section 03

Jobs Postings (Labor demand)

Job Posting

Glass and Ceramics Cluster Jobs Postings Overview

- From January 2020 to November 2024, a total of 738 unique jobs postings happened in industries within the Glass and Ceramics Cluster. The average monthly unique jobs postings was 3 per month.
- The median posting duration was 32 days. Posting intensity was 2:1.
- Percent change between **January 2020 and November 2024** was **0% or no change.**
- 28 employers in Glass and Ceramics Cluster competed for talent during this period.
- Hourly median advertised salary was $20.49 per hour (31% postings included salaries)
- Job postings were advertised in 50 different industries within NIRPC Region. **Metal Coating, Engraving (except Jewelry and Silverware), and Allied Services to Manufactures** and **Clay Building Material and Refractories Manufacturing** had more than 50 unique jobs postings during **January 2020 and November 2024**.
- Top companies in Glass and Ceramics cluster posting jobs include Precoat Metals, Nlmk International B.V., Minerals Technologies, Holcim, and Material Sciences Corporation

Source: Lightcast– Q4 2024

Job Posting

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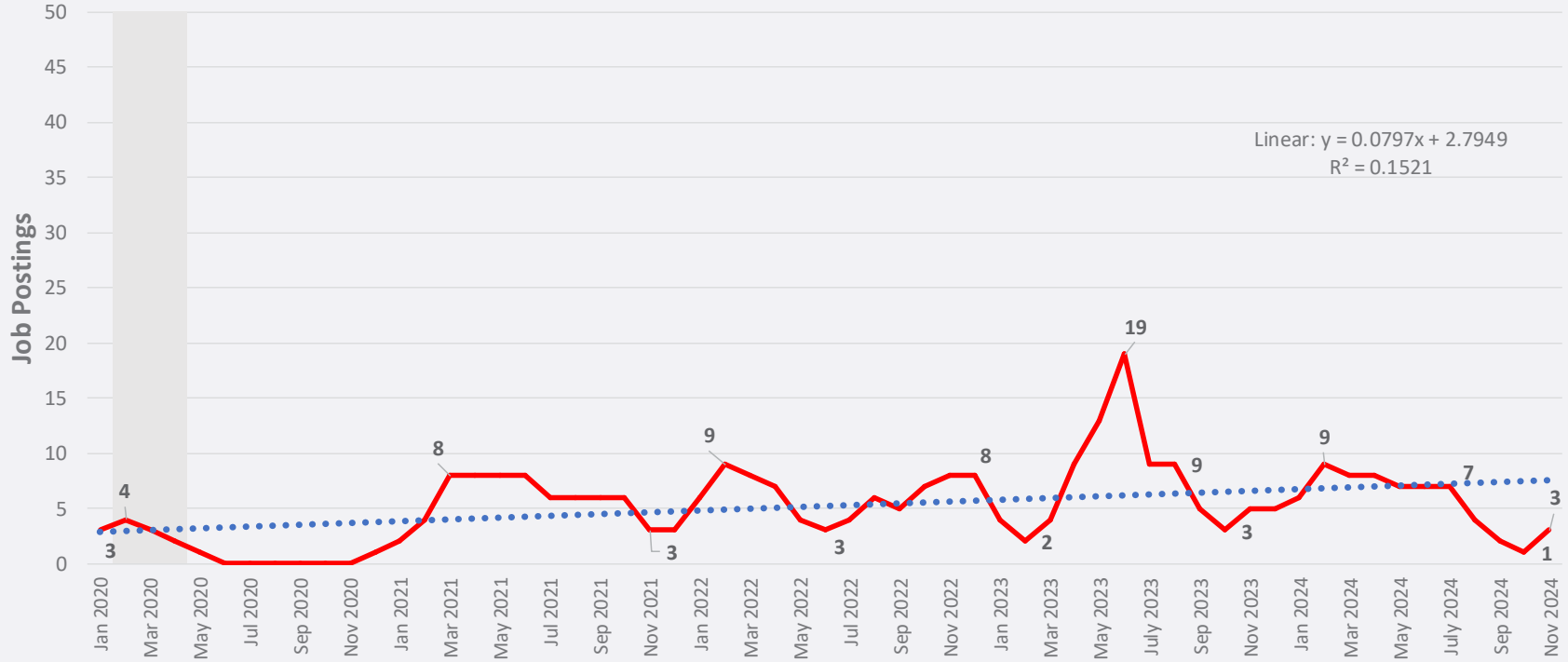
Glass and Ceramics Cluster: Job Postings Time Series (Jan 2020 to November 2024)



- Unique jobs postings are not seasonally adjusted and hence may show seasonal effects. Jobs postings are in a recovery mode following the COVID-19 induced recession (February 2020 to April 2020).

Data Snapshot // NIRPC

Source: Lightcast– Q4 2024

Job Posting

Glass and Ceramics Cluster Latest Unique Jobs Postings

Latest 1-Month Unique Jobs Postings Oct 2024 - Nov 2024

Latest 12-Month Unique Jobs Postings Nov 2023 - Nov 2024

Data Snapshot // NIRPC

Source: Lightcast– Q4 2024

Job Posting

Top companies, industries and job title postings (January 2020 to November 2024)

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Top Companies Postings	Top Industries
1. Precoat Metals	1. Metal Coating, Engraving (except Jewelry and Silverware), and Allied Services to Manufacturers
2. Nlmk International B.V.	2. Clay Building Material and Refractories Manufacturing
3. Minerals Technologies	3. Cement Manufacturing
4. Holcim	4. Electroplating, Plating, Polishing, Anodizing, and Coloring
5. Material Sciences Corporation	5. Ground or Treated Mineral and Earth Manufacturing
6. J&L Dimensional Services	6. Pottery, Ceramics, and Plumbing Fixture Manufacturing
7. Edw. C. Levy Co.	7. Glass Container Manufacturing
8. Midwest Pipe Coating	8. Other Pressed and Blown Glass and Glassware Manufacturing
9. Refractory Service	9. Glass Product Manufacturing Made of Purchased Glass
10. Midwest Wheelcoaters	
11. Glen-Gery Corporation	
12. Super Products	
13. Vesuvius USA	
14. Chemcoaters	

- Farmers, farm hand and manual worker jobs advertisements are based on analog and not online services.

Data Snapshot // NIRPC

Source: Lightcast– Q4 2024

Section 04

Economic Outlook

Outlook

40

U.S. Industry Economic Outlook

- **Glass Product Manufacturing** in the U.S. had $29.9 bn revenue with a profit margin of 5.4% in 2024. The industry is expected to grow in revenue (2.2%) and employees (1%) during the 2024-2029 period. The industry has been affected by consumer shift to alternative packaging materials like plastics, aluminum and carboard, and the industry needs to innovate in design and products. The industry is affected by the environmental regulations. However, the demand for glass products has been increasing in the construction (residential and nonresidential) industries.

Source: IBIS

Appendix

Report Contributors

Authors/Editors

Indraneel Kumar, Ph.D.
Ben St. Germain
Annie Cruz-Porter, Ph.D.
Taoyi Sun
Hyewon Shin

Data Analysis

Indraneel Kumar, Ph.D.
Ben St. Germain
Taoyi Sun

Report Design

Tyler Wright

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www.pcrd.purdue.edu

Contact Us

1341 Northwestern Avenue
Purdue Schowe House
West Lafayette, IN 47906
765-494-7273
pcrd@purdue.edu

Northwestern Indiana Regional Planning Commission

Machinery Manufacturing Cluster Drill-down

Section 01

Economic indicators

Machinery

Key Economic Indicators

Economic Indicators	Northwestern Indiana Regional Planning Commission (QCEW, non-QCEW, self-employed and proprietors)
Jobs 2023 (% of total jobs)	**3,568 (0.9%)**
Job change 2018-2023 (#, %)	**308 (+9%)**
Average total earnings per job 2023	**$90,943**
Cost of Living (COL)	**93.8**
Est. Establishment 2023 (% of total est.)	**76 (0.4%)**
GRP (Gross Regional Product) 2023	**$ 558.2 Million**
GRP per job 2023 (productivity)	**$156,448**
Total purchases 2023	**$640 Million**
Within region	**33.4%**
Imported from outside of region & state	**66.6%**
Number of sectors in chemicals and chemical-based cluster	**35**

Data Snapshot // NIRPC

Note: Numbers in parentheses show percent values.

Source: Lightcast– 2024.4 (QCEW + non-QCEW + Self-employed + Proprietorships)

Machinery

NAICS-3 digit	Description	Jobs 2023
3339	Other General Purpose Machinery Manufacturing	1,752
3334	Ventilation, Heating, Air-Conditioning, and Commercial Refrigeration Equipment Manufacturing	755
3332	Industrial Machinery Manufacturing	462
3336	Engine, Turbine, and Power Transmission Equipment Manufacturing	301
3335	Metalworking Machinery Manufacturing	173
3331	Agriculture, Construction, and Mining Machinery Manufacturing	131
3333	Commercial and Service Industry Machinery Manufacturing	5

Source: Lightcast 2024.4 Class of Worker, industry cluster definitions by PCRD

Section 02

Competitiveness, economic leakages and Workforce

Regional Job Growth:

Three Key Components of the Shift-Share Analysis

Expected Change
The sum of the industrial mix and the national growth effects

Explains how much of the regional industry's growth is explained by the overall growth of the national economy

Share of regional industry growth explained by the growth of the specific industry sector at the national level

Explains how much of the change in a given industry is due to some unique competitive advantage that the region possesses

Note:
The calculations ensure no double counting of job change effects from national to regional levels

Machinery

Shift-Share Analysis (Regional Performance) by Top Industry Sectors

Industries		Jobs 2023	National Trend 2018-2023 (A)	Industry Trend 2018-2023 (B)	Cumulative Expected Growth (C=A+B)	Actual Job Growth 2018-2023 (D)	Regional Performance 2018-2023 (D-C)
333912	Air and Gas Compressor Manufacturing	1,069	75	-92	-17	215	↑ 232
333413	Industrial and Commercial Fan and Blower and Air Purification Equipment Manufacturing	507	40	-16	24	51	↑ 26
333241	Food Product Machinery Manufacturing	275	15	-3	12	104	↑ 93
333924	Industrial Truck, Tractor, Trailer, and Stacker Machinery Manufacturing	264	38	41	79	-172	-251
333414	Heating Equipment (except Warm Air Furnaces) Manufacturing	178	15	-1	13	10	-3
333612	Speed Changer, Industrial High-Speed Drive, and Gear Manufacturing	161	10	-13	-3	51	↑ 55
333248	All Other Industrial Machinery Manufacturing	148	1	0	1	132	↑ 131
333998	All Other Miscellaneous General Purpose Machinery Manufacturing	137	14	-3	11	-20	-31
333923	Overhead Traveling Crane, Hoist, and Monorail System Manufacturing	114	3	-3	0	75	↑ 75
333618	Other Engine Equipment Manufacturing	108	7	-5	2	28	↑ 26
333514	Special Die and Tool, Die Set, Jig, and Fixture Manufacturing	106	7	-21	-13	24	↑ 37
333993	Packaging Machinery Manufacturing	100	6	4	10	31	↑ 21
333111	Farm Machinery and Equipment Manufacturing	78	10	5	14	-32	-47
333415	Air-Conditioning and Warm Air Heating Equipment and Commercial and Industrial Refrigeration Equipment Manufacturing	70	16	4	19	-110	-129
333517	Machine Tool Manufacturing	52	2	-2	0	28	↑ 28

Note: Upward arrow (↑) indicates regional competitiveness.

Source: Lightcast 2024.4 Class of Worker, industry cluster definitions by PCRD

Machinery

Shift-Share Analysis 2023

Industries that Outperformed

- Air and Gas Compressor Manufacturing
- Industrial and Commercial Fan and Blower and Air Purification Equipment Manufacturing
- Food Product Machinery Manufacturing
- Speed Changer, Industrial High-Speed Drive, and Gear Manufacturing
- All Other Industrial Machinery Manufacturing
- Overhead Traveling Crane, Hoist, and Monorail System Manufacturing
- Other Engine Equipment Manufacturing
- Special Die and Tool, Die Set, Jig, and Fixture Manufacturing
- Packaging Machinery Manufacturing
- Machine Tool Manufacturing

Industries that Underperformed

- Industrial Truck, Tractor, Trailer, and Stacker Machinery Manufacturing
- Heating Equipment (except Warm Air Furnaces) Manufacturing
- All Other Miscellaneous General Purpose Machinery Manufacturing
- Special Die and Tool, Die Set, Jig, and Fixture Manufacturing
- Farm Machinery and Equipment Manufacturing
- Air-Conditioning and Warm Air Heating Equipment and Commercial and Industrial Refrigeration Equipment Manufacturing

- A few strong industry sectors include air and gas compressor manufacturing, all other industrial machinery manufacturing, food product machinery manufacturing, all other industrial machinery manufacturing; overhead traveling crane, hoist, and monorail system manufacturing, etc.

Source: Lightcast 2024.4 Class of Worker, industry cluster definitions by PCRD

Machinery

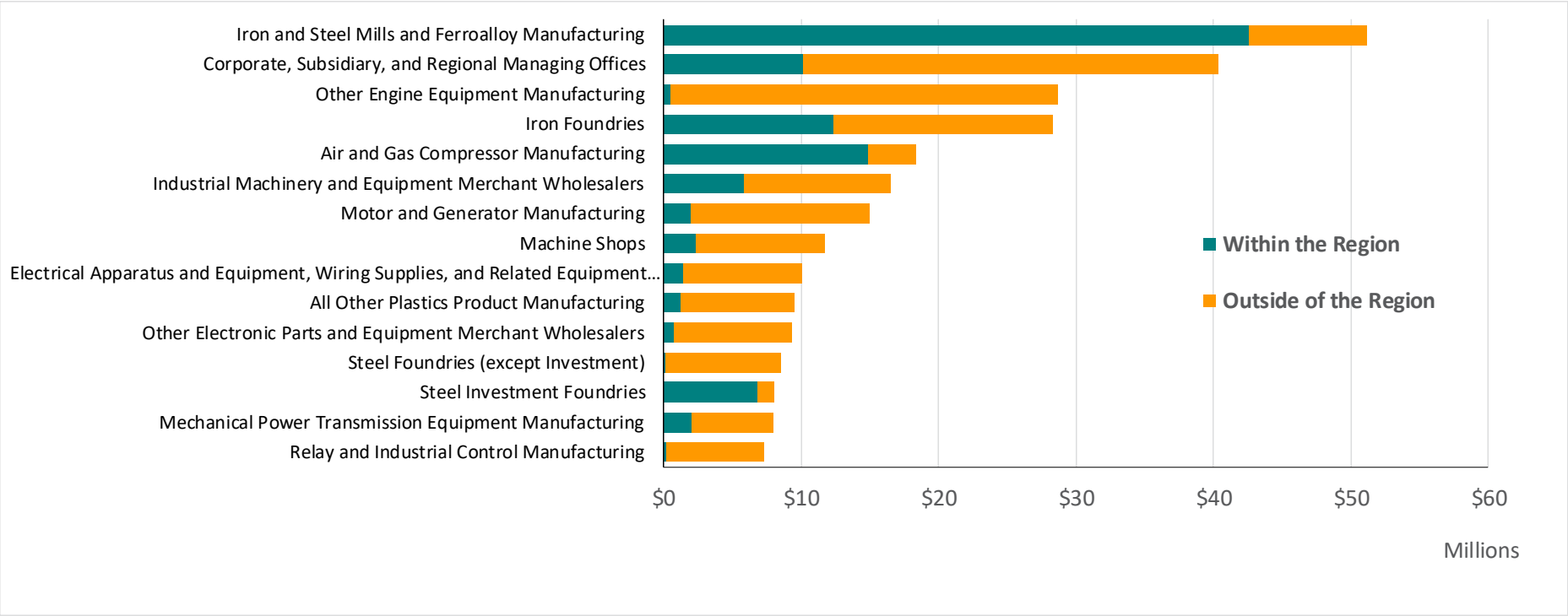
Leakage analysis: Top 15 Industries by Inputs

Industries	Estimated Input ($ Million), 2023	% In-Region	% Out of Region
Iron and Steel Mills and Ferroalloy Manufacturing	$51.1	83.3%	16.7%
Corporate, Subsidiary, and Regional Managing Offices	$40.4	25.2%	74.8%
Other Engine Equipment Manufacturing	$28.7	1.8%	98.2%
Iron Foundries	$28.3	43.7%	56.3%
Air and Gas Compressor Manufacturing	$18.3	80.9%	19.1%
Industrial Machinery and Equipment Merchant Wholesalers	$16.5	35.3%	64.7%
Motor and Generator Manufacturing	$15.0	13.3%	86.7%
Machine Shops	$11.7	19.8%	80.2%
Electrical Apparatus and Equipment, Wiring Supplies, and Related Equipment Merchant Wholesalers	$10.1	13.6%	86.4%
All Other Plastics Product Manufacturing	$9.5	12.7%	87.3%
Other Electronic Parts and Equipment Merchant Wholesalers	$9.4	7.7%	92.3%
Steel Foundries (except Investment)	$8.5	1.7%	98.3%
Steel Investment Foundries	$8.1	85.4%	14.6%
Mechanical Power Transmission Equipment Manufacturing	$7.9	25.7%	74.3%
Relay and Industrial Control Manufacturing	$7.3	3.4%	96.6%

Source: Lightcast 2024.4 Class of Worker, industry cluster definitions by PCRD

Machinery

Leakage analysis 2023



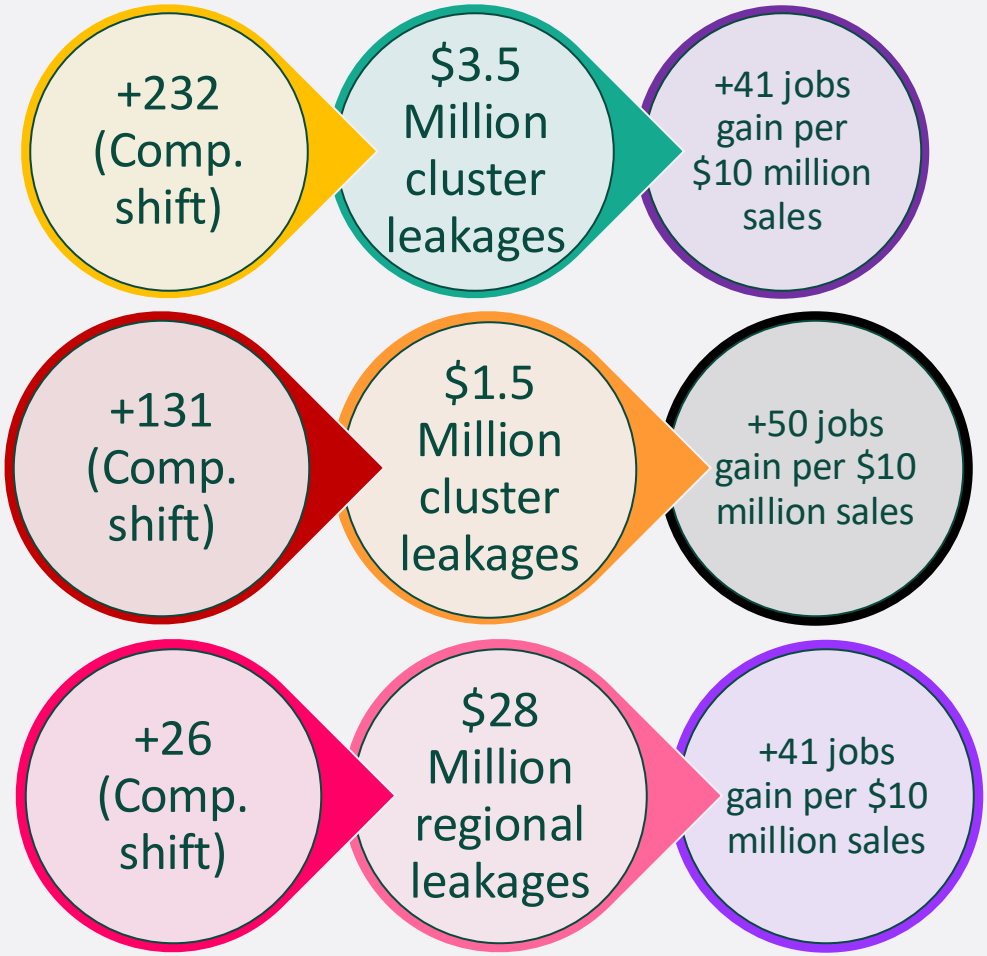
- Corporate, Subsidiary, and Regional Managing Offices had $30 million economic leakage in 2023. Other Engine Equipment Manufacturing had $28 million leakages in 2023. Steel Foundries are imported in almost entirety.

Data Snapshot // NIRPC

Source: Lightcast 2024.4 Class of Worker, industry cluster definitions by PCRD

Machinery

Industry Competitive Shift, Leakages, and Multipliers



Data Snapshot // NIRPC

Source: Lightcast– Q4 2024

Machinery

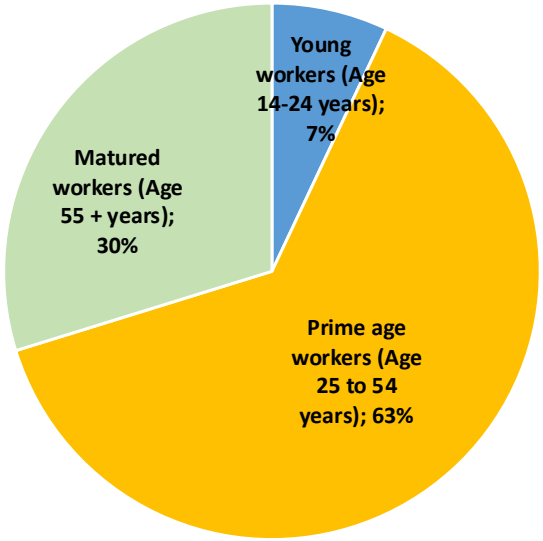
Top occupations

Occupations	Jobs 2023	% Change 2018-2023	% of Total Jobs in Cluster 2023	Median Hour Earnings	Entry level Education	Automation
Miscellaneous Assemblers and Fabricators	632	5%	17.7%	$19.54	High school diploma or equivalent	112.6
Engine and Other Machine Assemblers	190	5%	5.3%	$21.58	High school diploma or equivalent	118.7
Industrial Machinery Mechanics	149	66%	4.2%	$37.37	High school diploma or equivalent	109.8
First-Line Supervisors of Production and Operating Workers	140	16%	3.9%	$31.55	High school diploma or equivalent	88.6
Welders, Cutters, Solderers, and Brazers	123	106%	3.5%	$21.76	High school diploma or equivalent	121.4
Machinists	118	-4%	3.3%	$21.59	High school diploma or equivalent	115.2
Shipping, Receiving, and Inventory Clerks	100	56%	2.8%	$20.64	High school diploma or equivalent	109.1
Mechanical Engineers	93	9%	2.6%	$51.46	Bachelor's degree	83.4
Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	90	-23%	2.5%	$33.77	High school diploma or equivalent	91.5
Laborers and Freight, Stock, and Material Movers, Hand	87	35%	2.4%	$18.00	No formal educational credential	117.2
Industrial Engineers	81	4%	2.3%	$50.76	Bachelor's degree	92
Inspectors, Testers, Sorters, Samplers, and Weighers	80	40%	2.2%	$23.55	High school diploma or equivalent	106.1
Electrical, Electronic, and Electromechanical Assemblers, Except Coil Winders, Tapers, and Finishers	64	-55%	1.8%	$17.70	High school diploma or equivalent	110.9
Computer Numerically Controlled Tool Operators	60	23%	1.7%	$25.87	High school diploma or equivalent	116
Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic	53	23%	1.5%	$17.84	High school diploma or equivalent	115.9

Source: Lightcast 2024.4 Class of Worker, industry cluster definitions by PCRD

Machinery

Worker demographics 2023



- Hispanic workers (10%)
- Black or African-American workers (7%)
- Asian workers (1%)
- White workers (81%)
- American Indian or Alaska Native (0.1%)
- Others (1.1%)

- Male workers (79%)
- Female workers (21%)

- Slightly more than three in ten workers (30%) are matured (aged 55 years or more) workers in NIRPC in this cluster.

Source: Lightcast 2024.4 Class of Worker, industry cluster definitions by PCRD

Section 03

Jobs Postings (Labor demand)

Job Posting

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Machinery Manufacturing Jobs Postings Overview

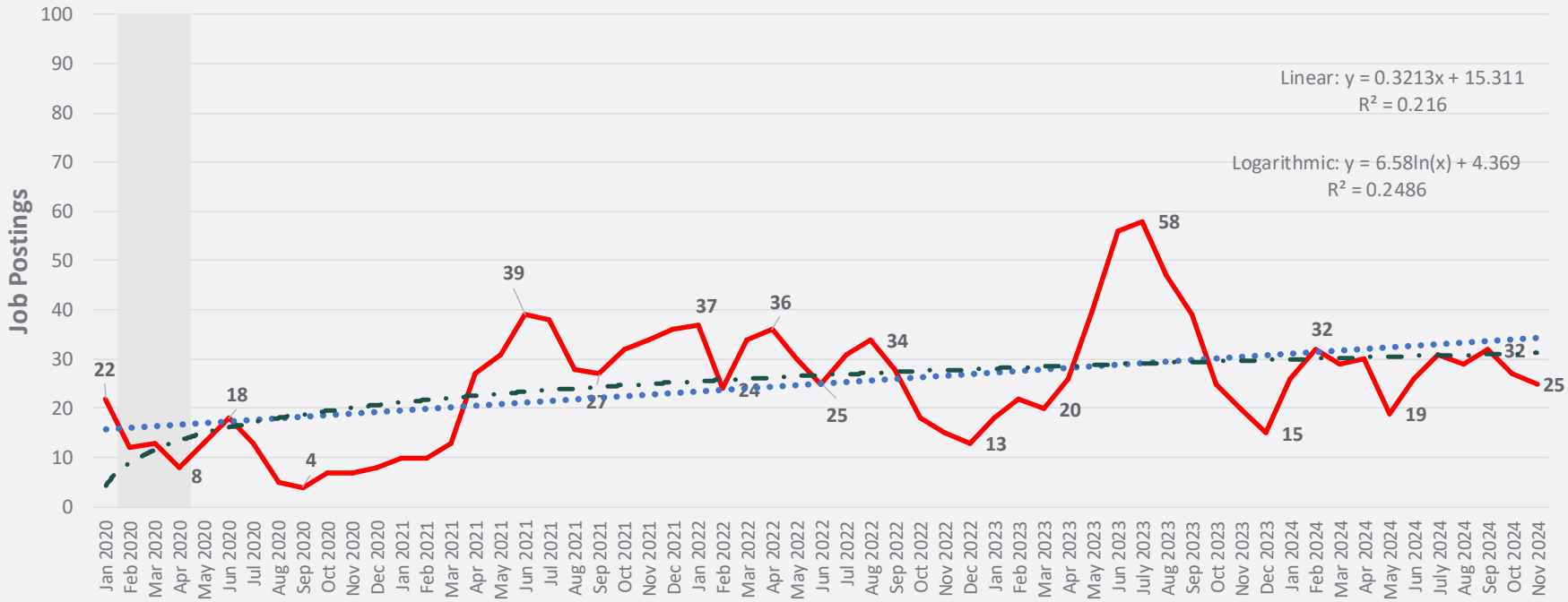
- From January 2020 to November 2024, a total of 2,489 unique jobs postings happened in industries within the Machinery Manufacturing. The average monthly unique jobs postings was 25 per month.
- The median posting duration was 29 days. Posting intensity was 2:1.
- Percent change between **January 2020 and November 2024** was 13**%.**
- 114 employers in Machinery Manufacturing competed for talent during this period.
- Hourly median advertised salary was $21.97 per hour (24% postings included salaries)
- Job postings were advertised in 33 different industries within NIRPC Region. **Conveyor and Conveying Equipment Manufacturing, Air and Gas Compressor Manufacturing**, and **Construction Machinery Manufacturing** had more than 200 unique jobs postings during **January 2020 and November 2024**.
- Top companies in Agribusiness cluster posting jobs include Jervis B. Webb Company, Paladin, Sullair, Gast Manufacturing, and Urschel Laboratories.

Data Snapshot // NIRPC

Source: Lightcast– Q4 2024

Job Posting

Machinery Manufacturing: Job Postings Time Series (Jan 2020 to November 2024)



- Unique jobs postings are not seasonally adjusted and hence may show seasonal effects. Jobs postings are in a recovery mode following the COVID-19 induced recession (February 2020 to April 2020).

Data Snapshot // NIRPC

Source: Lightcast– Q4 2024

Job Posting

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Machinery Manufacturing Latest Unique Jobs Postings

Latest 1-Month Unique Jobs Postings Oct 2024 - Nov 2024

Latest 12-Month Unique Jobs Postings Nov 2023 - Nov 2024

Data Snapshot // NIRPC

Source: Lightcast– Q4 2024

Job Posting

Top companies, industries and job title postings (January 2020 to November 2024)

Top Companies Postings	Top Industries
1. Jervis B. Webb Company	1. Conveyor and Conveying Equipment Manufacturing
2. Paladin	2. Air and Gas Compressor Manufacturing
3. Sullair	3. Construction Machinery Manufacturing
4. Gast Manufacturing	4. All Other Miscellaneous General Purpose Machinery Manufacturing
5. Urschel Laboratories	5. Other Engine Equipment Manufacturing
6. Vanair Manufacturing	6. All Other Industrial Machinery Manufacturing
7. Altra Industrial Motion	7. Measuring, Dispensing, and Other Pumping Equipment Manufacturing
8. Siemens	8. Food Product Machinery Manufacturing
9. Hoist Material Handling	9. Speed Changer, Industrial High-Speed Drive, and Gear Manufacturing
10. SPX	10. Industrial Truck, Tractor, Trailer, and Stacker Machinery Manufacturing
11. Dekker Vacuum Technologies	11. Commercial and Service Industry Machinery Manufacturing
12. Atlas Copco	
13. Mickey's Linen	
14. Altorfer	

- Farmers, farm hand and manual worker jobs advertisements are based on analog and not online services.

Source: Lightcast– Q4 2024

Section 04

Economic Outlook

Outlook

40

U.S. Industry Economic Outlook

- **Forklift and Conveyor Manufacturing** in the U.S. had $39.1 bn revenue with a profit margin of 5.6% in 2024. It is expected to grow in revenues (1.4%) and employees (1.1%) during 2024-2029. Rising interest rates affected the construction and manufacturing industries impacting forklift and conveyor manufacturing industry. Tariff of foreign suppliers can level the playing field for the domestic industry.
- **Air and Gas Compressor Manufacturing** in the U.S. had $8.7 bn revenue with a profit margin of 6% in 2024. This industry is expected to decline in the U.S., during 2024-2029. This industry was impacted by the pandemic and currently it is in a recovery mode. The consumer outlook is to go for environmental friendly products and there is an opportunity for R&D. Air and Gas Compressor Manufacturing in the U.S. is a diverse sector, which include manufacturers of refrigeration and air conditioning, HVAC, motor-vehicle air conditioning, etc.
- **All Other Industrial Machinery Manufacturing** in the U.S. is a diverse sector, which include machinery manufacturers for chemical processing, glass making, placstics working, additive manufacturing, etc.

Source: IBIS

Appendix

Report Contributors

Authors/Editors

Indraneel Kumar, Ph.D.
Ben St. Germain
Annie Cruz-Porter, Ph.D.
Taoyi Sun
Hyewon Shin

Data Analysis

Indraneel Kumar, Ph.D.
Ben St. Germain
Taoyi Sun

Report Design

Tyler Wright

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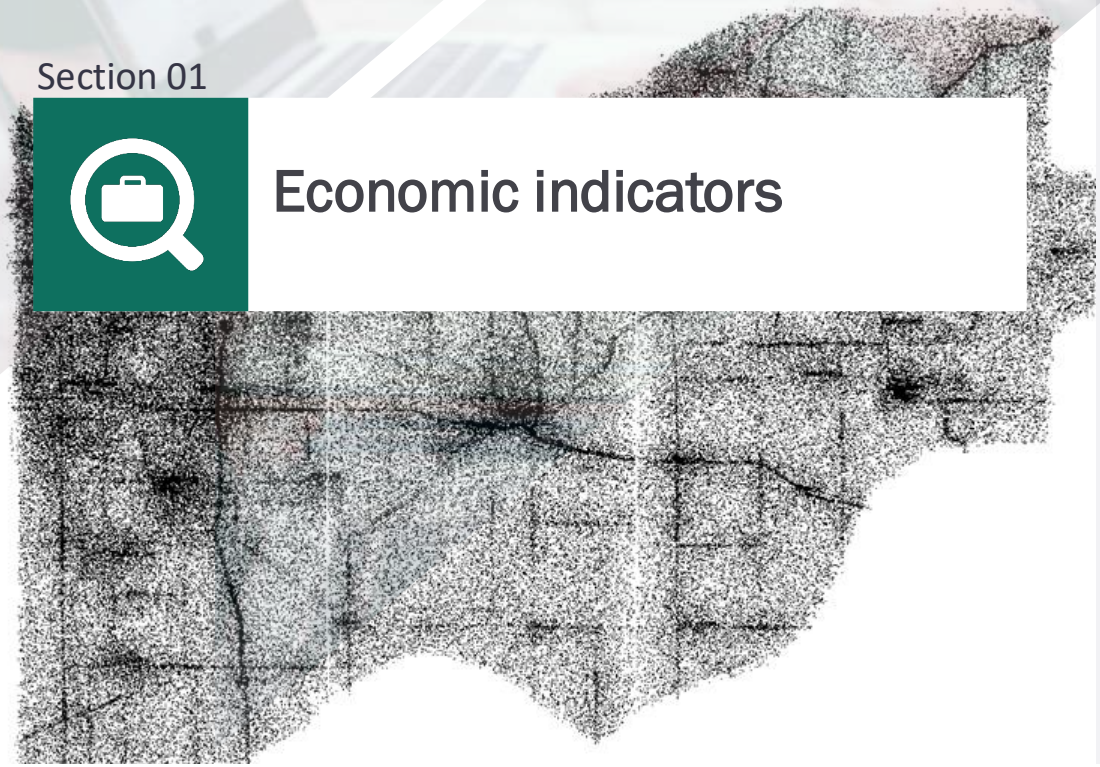
www.pcrd.purdue.edu

Contact Us

1341 Northwestern Avenue
Purdue Schowe House
West Lafayette, IN 47906
765-494-7273
pcrd@purdue.edu

Northwestern Indiana Regional Planning Commission

Primary Metals Cluster Drill-down



Section 01

Economic indicators

Primary Metals

Key Economic Indicators

Economic Indicators	Northwestern Indiana Regional Planning Commission (QCEW, non-QCEW, self-employed and proprietors)
Jobs 2023 (% of total jobs)	**15,876 (4%)**
Job change 2018-2023 (#, %)	**-1,687 (-10%)**
Average total earnings per job 2023	**$136,925**
Cost of Living (COL)	**93.8**
Est. Establishment 2023 (% of total est.)	**32 (0.2%)**
GRP (Gross Regional Product) 2023	**$ 8.0 Billion**
GRP per job 2023 (productivity)	**$503,894**
Total purchases 2023	**$14.5 Billion**
Within region	**48.2%**
Imported from outside of region & state	**51.8%**
Number of sectors in chemicals and chemical-based cluster	**18**

Data Snapshot // NIRPC

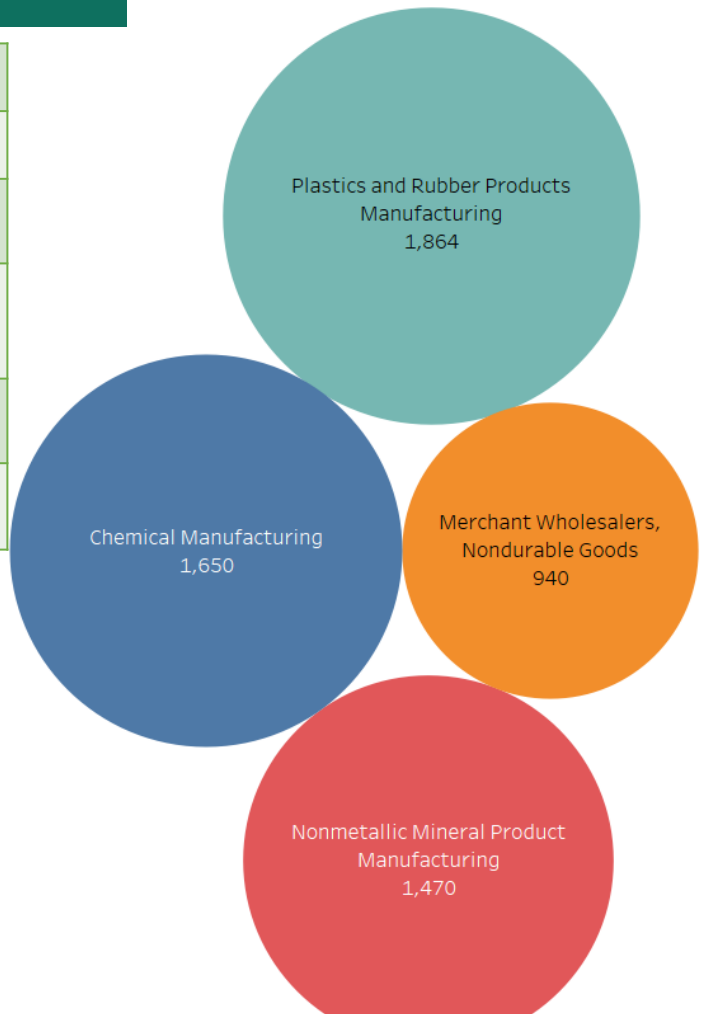
Note: Numbers in parentheses show percent values.

Source: Lightcast– 2024.4 (QCEW + non-QCEW + Self-employed + Proprietorships)

Primary Metals

NAICS-4 digit	Description	Jobs 2023
3311	Iron and Steel Mills and Ferroalloy Mfg.	13,422
3315	Foundries	1,163
3314	Nonferrous Metal (except Aluminum) Production and Processing	556
3312	Steel Product Mfg. from Purchased Steel	465
3313	Alumina and Aluminum Production and Processing	295

3



NAICS 3-digit sectors
- Chemical Manufacturing
- Merchant Wholesalers, Nondurable Goods
- Nonmetallic Mineral Product Manufacturing
- Plastics and Rubber Products Manufacturing

Data Snapshot // NIRPC

Source: Lightcast 2024.4 Class of Worker, industry cluster definitions by PCRD

Section 02

Competitiveness, economic leakages and Workforce

Regional Job Growth:

Three Key Components of the Shift-Share Analysis

Expected Change
The sum of the industrial mix and the national growth effects

Explains how much of the regional industry's growth is explained by the overall growth of the national economy

Share of regional industry growth explained by the growth of the specific industry sector at the national level

Explains how much of the change in a given industry is due to some unique competitive advantage that the region possesses

Note:
The calculations ensure no double counting of job change effects from national to regional levels

Primary Metals

Shift-Share Analysis (Regional Performance) by Top Industry Sectors

Industries	Jobs 2023	National Trend 2018-2023 (A)	Industry Trend 2018-2023 (B)	Cumulative Expected Growth (C=A+B)	Actual Job Growth 2018-2023 (D)	Regional Performance 2018-2023 (D-C)
Iron and Steel Mills and Ferroalloy Manufacturing	13,422	1,305	-1,174	130	-1,531	-1,661
Steel Investment Foundries	1,001	97	-238	-141	-106	↑ 35
Secondary Smelting, Refining, and Alloying of Nonferrous Metal (except Copper and Aluminum)	546	37	-41	-4	124	↑ 128
Rolled Steel Shape Manufacturing	295	43	-5	38	-202	-240
Aluminum Sheet, Plate, and Foil Manufacturing	215	26	4	30	-87	-117
Iron Foundries	142	10	-20	-10	31	↑ 41
Iron and Steel Pipe and Tube Manufacturing from Purchased Steel	103	12	-15	-2	-39	-37
Other Aluminum Rolling, Drawing, and Extruding*	75	1	-1	0	Insf. Data	↑ 68
Steel Wire Drawing*	67	1	-1	0	Insf. Data	↑ 58

* Other Aluminum Rolling, Drawing ad Extruding and Steel Wire Drawing industries appear after 2018 in the region, hence job growth data show “Insf. Data”.

Note: Upward arrow (↑) indicates regional competitiveness.

Source: Lightcast 2024.4 Class of Worker, industry cluster definitions by PCRD

Chemicals

Shift-Share Analysis 2023

Industries that Outperformed

- Steel Investment Foundries
- Secondary Smelting, Refining, and Alloying of Nonferrous Metal (except Copper and Aluminum)
- Iron Foundries
- Other Aluminum Rolling, Drawing, and Extruding*
- Steel Wire Drawing*

Industries that Underperformed

- Iron and Steel Mills and Ferroalloy Manufacturing
- Rolled Steel Shape Manufacturing
- Aluminum Sheet, Plate, and Foil Manufacturing
- Iron and Steel Pipe and Tube Manufacturing from Purchased Steel

- A few strong industry sectors include steel investment foundries with 1000 jobs and secondary smelting, refining, and alloying of nonferrous metals with 500 plus jobs in 2023. Iron foundries also has 140 plus jobs in 2023.

- Secondary smelting, refining, and alloying of nonferrous metals has a large competitive shift value of +128. Both, Steel investment and iron foundries have competitive shift values of +35 and +41, respectively.

Source: Lightcast 2024.4 Class of Worker, industry cluster definitions by PCRD

Primary Metals

Leakage analysis: Top 15 Industries by Inputs

Industries	Estimated Input ($ Million), 2023	% In-Region	% Out of Region
Iron and Steel Mills and Ferroalloy Manufacturing	$2,879.1	97.0%	3.0%
Rail transportation	$479.9	99.5%	0.5%
General Freight Trucking, Long-Distance, Truckload	$478.2	96.8%	3.2%
Gold Ore and Silver Ore Mining	$469.9	0.0%	100.0%
Other Miscellaneous Durable Goods Merchant Wholesalers	$333.7	19.4%	80.6%
Metal Service Centers and Other Metal Merchant Wholesalers	$314.3	81.4%	18.6%
Electric Power Distribution	$281.9	50.8%	49.2%
Plumbing and Heating Equipment and Supplies (Hydronics) Merchant Wholesalers	$275.9	22.1%	77.9%
Nonferrous Metal (except Aluminum) Smelting and Refining	$275.0	0.3%	99.7%
Iron and Steel Pipe and Tube Manufacturing from Purchased Steel	$256.6	13.0%	87.0%
Lumber, Plywood, Millwork, and Wood Panel Merchant Wholesalers	$255.7	14.0%	86.0%
General Freight Trucking, Local	$242.5	71.7%	28.3%
Underground Coal Mining	$239.1	0.0%	100.0%
Copper, Nickel, Lead, and Zinc Mining	$231.8	0.0%	100.0%
Warm Air Heating and Air-Conditioning Equipment and Supplies Merchant Wholesalers	$222.2	15.5%	84.5%

Source: Lightcast 2024.4 Class of Worker, industry cluster definitions by PCRD

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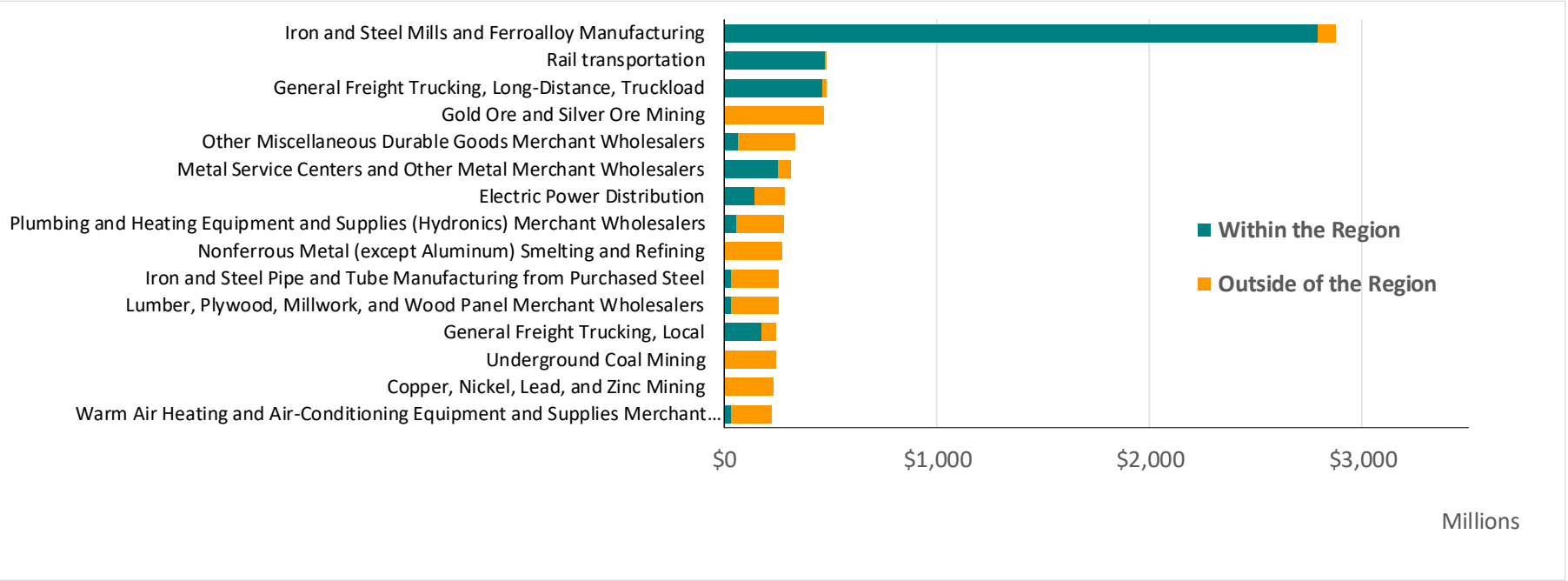
Primary Metals

Leakage analysis 2023



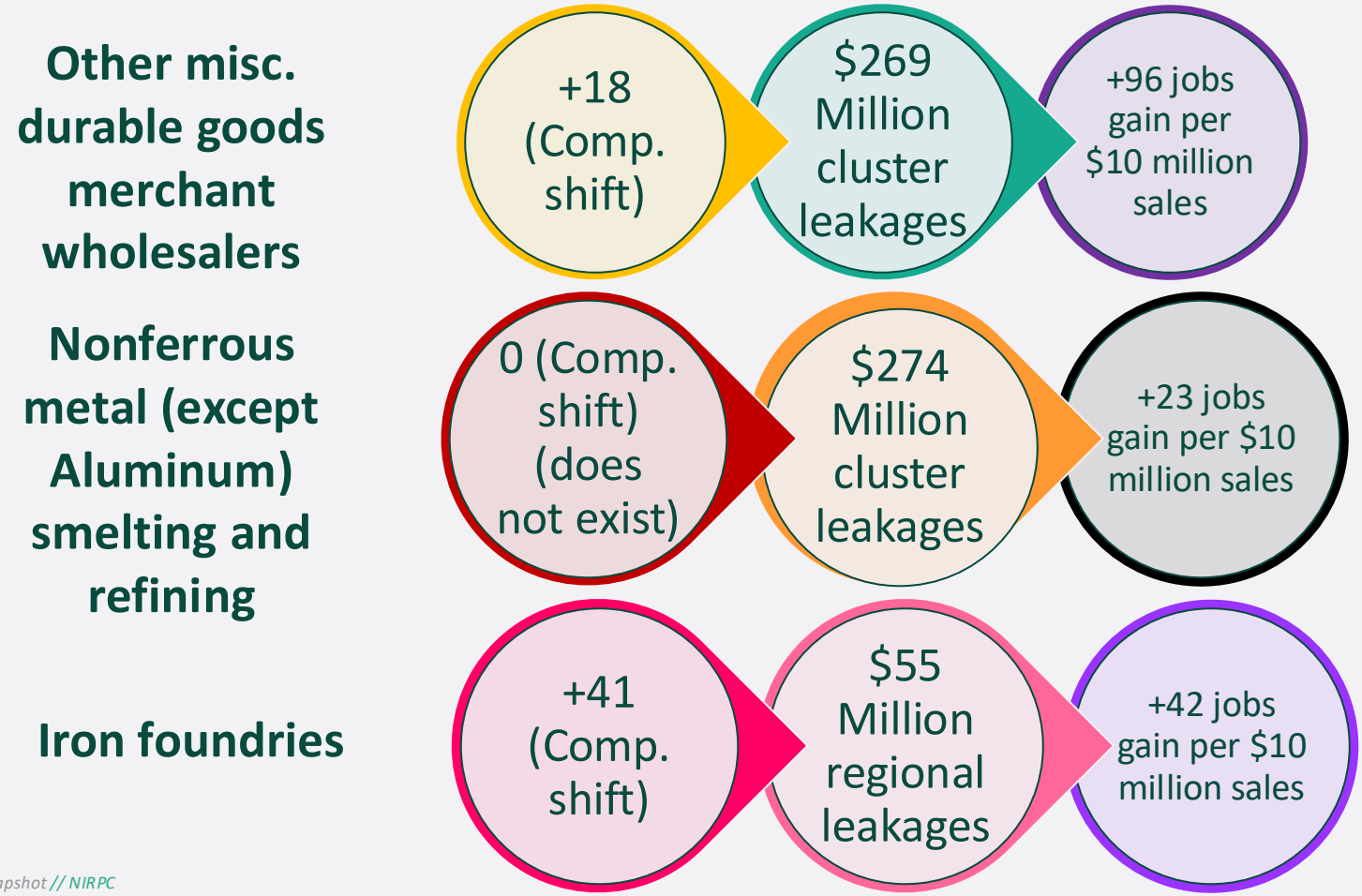
- Gold ore and silver mining had $470 million economic leakage in 2023. Durable goods merchant wholesalers had $269 million leakages in 2023. Nonferrous metal (except Aluminum) smelting and refining had $274 million leakages.

Data Snapshot // NIRPC

Source: Lightcast 2024.4 Class of Worker, industry cluster definitions by PCRD

Primary Metals

Industry Competitive Shift, Leakages, and Multipliers



Data Snapshot // NIRPC

Source: Lightcast– Q4 2024

Primary Metals

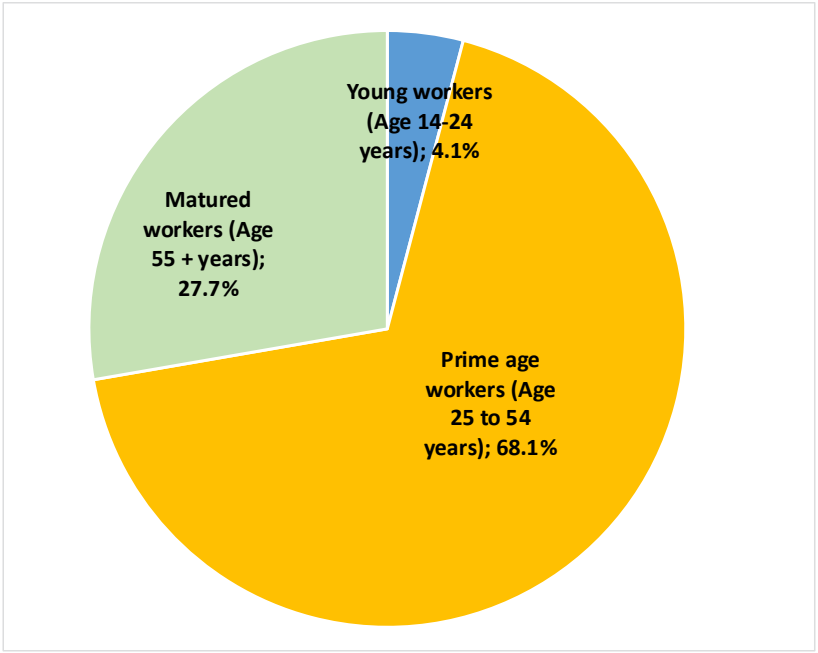
Top occupations

Occupations	Jobs 2023	% Change 2018-2023	% of Total Jobs in Cluster 2023	Median Hour Earnings	Entry level Education	Automation
Metal-Refining Furnace Operators and Tenders	2,521	278%	15.9%	$37.96	High school diploma or equivalent	117.4
Industrial Machinery Mechanics	1,622	29%	10.2%	$37.37	High school diploma or equivalent	109.8
Industrial Truck and Tractor Operators	934	58%	5.9%	$21.54	No formal educational credential	119.5
Laborers and Freight, Stock, and Material Movers, Hand	854	71%	5.4%	$18.00	No formal educational credential	117.2
First-Line Supervisors of Production and Operating Workers	681	-30%	4.3%	$31.55	High school diploma or equivalent	88.6
Rolling Machine Setters, Operators, and Tenders, Metal and Plastic	531	-54%	3.3%	$23.59	High school diploma or equivalent	111.7
Crane and Tower Operators	407	-30%	2.6%	$28.85	High school diploma or equivalent	121.5
Pourers and Casters, Metal	371	133%	2.3%	$26.36	High school diploma or equivalent	121.1
Electricians	343	-10%	2.2%	$38.83	High school diploma or equivalent	110.3
Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic	319	-52%	2.0%	$17.84	High school diploma or equivalent	115.9
Inspectors, Testers, Sorters, Samplers, and Weighers	316	-38%	2.0%	$23.55	High school diploma or equivalent	106.1
Grinding, Lapping, Polishing, and Buffing Machine Tool Setters, Operators, and Tenders, Metal and Plastic	288	-15%	1.8%	$17.58	High school diploma or equivalent	119
First-Line Supervisors of Mechanics, Installers, and Repairers	274	47%	1.7%	$41.87	High school diploma or equivalent	94
Shipping, Receiving, and Inventory Clerks	273	-20%	1.7%	$20.64	High school diploma or equivalent	109.1
Maintenance and Repair Workers, General	253	-43%	1.6%	$21.95	High school diploma or equivalent	109.6

Source: Lightcast 2024.4 Class of Worker, industry cluster definitions by PCRD

Primary Metals

Worker demographics 2023



- Hispanic workers (13%)
- Black or African-American workers (15%)
- Asian workers (1%)
- White workers (70%)
- American Indian or Alaska Native (0.2%)
- Others (1%)

- Male workers (85%)
- Female workers (15%)

- Slightly more than one in four workers (28%) are matured (aged 55 years or more) workers in NIRPC in this cluster. Young workers are only 4.1% of the labor force. Talent pipeline strategies are needed!

Source: Lightcast 2024.4 Class of Worker, industry cluster definitions by PCRD

Section 03

Jobs Postings (Labor demand)

Job Posting

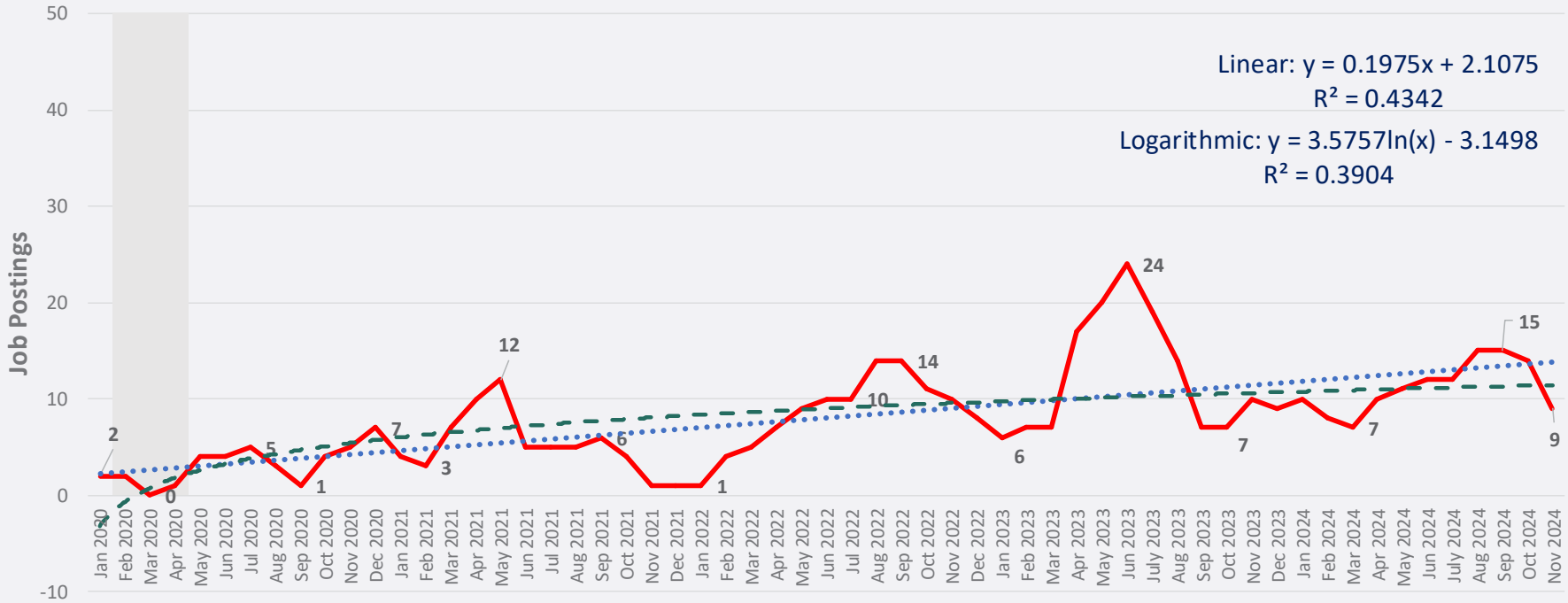
Primary Metal Manufacturing Jobs Postings Overview

- From January 2020 to November 2024, a total of 675 unique jobs postings happened in industries within the Primary Metal Manufacturing. The average monthly unique jobs postings was 8 per month.
- The median posting duration was 24 days. Posting intensity was 2:1.
- Percent change between **January 2020 and November 2024** was **350%.**
- 51 employers in Primary Metal Manufacturing competed for talent during this period.
- Hourly median advertised salary was $25.54 per hour (27% postings included salaries)
- Job postings were advertised in 16 different industries within NIRPC Region. **Iron and Steel Mills and Ferroalloy Manufacturing** and **Iron Foundries** had more than 75 unique jobs postings during **January 2020 and November 2024**.
- Top companies in Primary metals cluster posting jobs include Big River Steel, Amsted Rail, Central Wire, Silgan, and Jupiter Aluminum Corporation.

Source: Lightcast– Q4 2024

Job Posting

Primary Metal Manufacturing: Job Postings Time Series (Jan 2020 to November 2024)



- Unique jobs postings are not seasonally adjusted and hence may show seasonal effects. Jobs postings are in a recovery mode following the COVID-19 induced recession (February 2020 to April 2020).

Data Snapshot // NIRPC

Source: Lightcast– Q4 2024

Job Posting

Primary Metal Manufacturing Latest Unique Jobs Postings

Latest 1-Month Unique Jobs Postings Oct 2024 - Nov 2024

Latest 12-Month Unique Jobs Postings Nov 2023 - Nov 2024

Source: Lightcast– Q4 2024

Job Posting

Top companies, industries and job title postings (January 2020 to November 2024)

Top Companies Postings	Top Industries
1. Big River Steel	1. Iron and Steel Mills and Ferroalloy Manufacturing
2. Amsted Rail	2. Iron Foundries
3. Central Wire	3. Steel Wire Drawing
4. Silgan	4. Aluminum Sheet, Plate, and Foil Manufacturing
5. Jupiter Aluminum Corporation	5. Steel Foundries (except Investment)
6. T&B Tube	6. Iron and Steel Pipe and Tube Manufacturing from Purchased Steel
7. Arconic	7. Alumina Refining and Primary Aluminum Production
8. Tms	8. Other Aluminum Rolling, Drawing, and Extruding
9. Central Steel & Wire Co.	9. Rolled Steel Shape Manufacturing
10. Resco Products	10. Steel Investment Foundries
11. J W Hicks	11. Nonferrous Metal Die-Casting Foundries
12. Feralloy Corp.	
13. Castle Metals	
14. Accurate Castings	

- Farmers, farm hand and manual worker jobs advertisements are based on analog and not online services.

Source: Lightcast– Q4 2024

Section 04

Economic Outlook

Outlook

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U.S. Industry Economic Outlook

- **Iron and Steel Manufacturing** in the U.S. had $140 bn revenue with a profit margin of 7.7% in 2024. The production volumes of iron and steel have been volatile because of pandemic-induced volatility in the construction sector. The revenue and employees are forecast to grow marginally during 2024-2029. Tariff, trade and foreign policies can impact this sector.
- **Ferrous Metal Foundry Products** in the U.S. had $19.7 bn revenue with a profit margin of 7.3% in 2024. This industry has been experiencing a decline in the U.S. because of consolidations and exits. Growth in industrialization, infrastructure development, and foreign demand can expand this industry in the U.S. The life cycle of this industry is in mature category.
- **Nonferrous Metal Refining** in the U.S. had $17.5 bn revenue with a profit margin of 4.5% in 2024. The industry is expected to grow by 1.3% in revenue and 0.5% in employees during 2024-2029. Renewed downstream manufacturing and construction activity will boost demand for refined metals. As production resumes amid the recovery economy, so will demand for primary inputs (IBIS World).

Source: IBIS

Appendix

Report Contributors

Authors/Editors

Indraneel Kumar, Ph.D.
Ben St. Germain
Annie Cruz-Porter, Ph.D.
Taoyi Sun
Hyewon Shin

Data Analysis

Indraneel Kumar, Ph.D.
Ben St. Germain
Taoyi Sun

Report Design

Tyler Wright

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www.pcrd.purdue.edu

Contact Us

1341 Northwestern Avenue
Purdue Schowe House
West Lafayette, IN 47906
765-494-7273
pcrd@purdue.edu

Quantum Cluster Jobs Postings

NAICS	Quantum NAICS Description
541715	Research and Development in the Physical, Engineering, and Life Sciences (except Nanotechnology and Biotechnology)
541714	Research and Development in Biotechnology (except Nanobiotechnology)
541713	Research and Development in Nanotechnology
541330	Engineering Services
334413	Semiconductor and Related Device Manufacturing
541511	Custom Computer Programming Services
513210	Software Publishers
334511	Search, Detection, Navigation, Guidance, Aeronautical, and Nautical System and Instrument Manufacturing
541512	Computer Systems Design Services

Job Posting

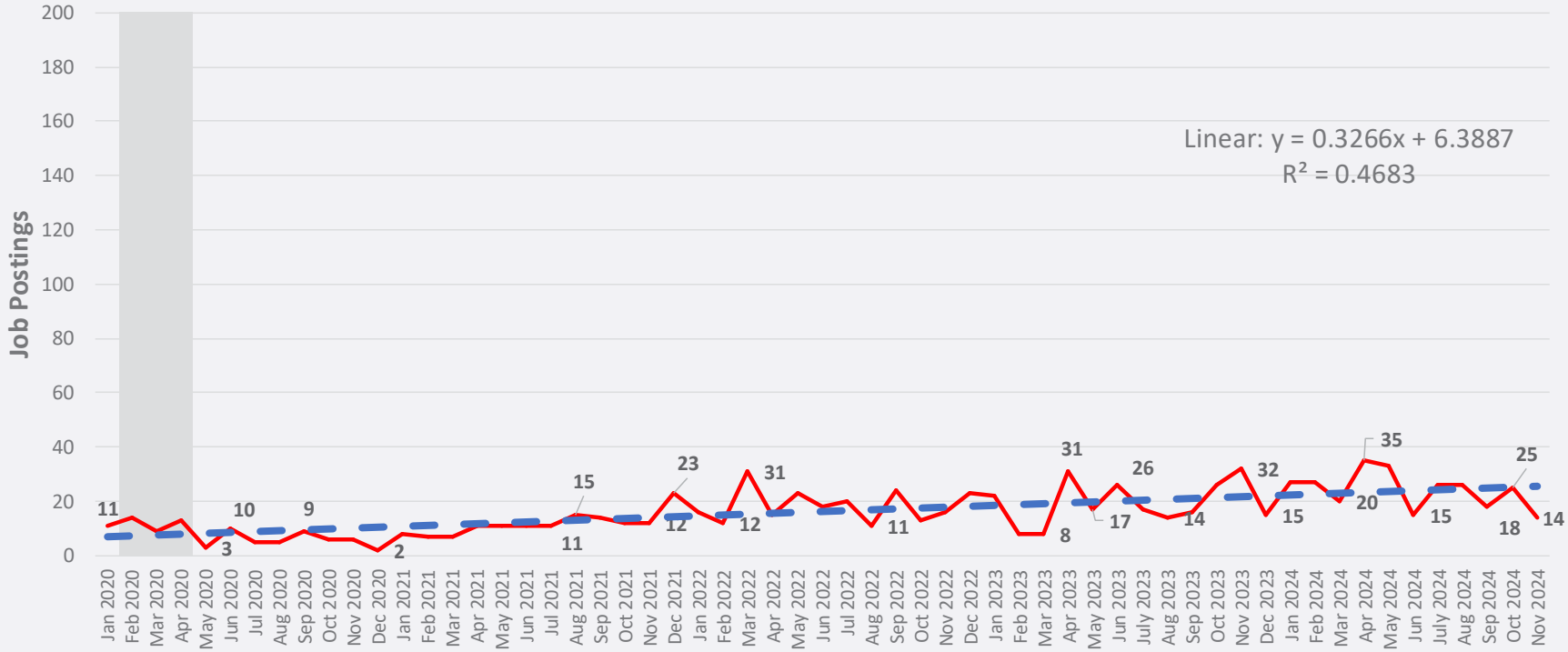
Quantum Industries Jobs Postings Overview

- From January 2020 to November 2024, a total of 4,789 unique jobs postings happened in industries within the Quantum Industries. The average monthly unique jobs postings was 16 per month.
- The median posting duration was 27 days. Posting intensity was 2:1.
- Percent change between **January 2020 and November 2024** was **27%.**
- 523 employers in competed for talent during this period in Quantum-related industries.
- Hourly median advertised salary was $31.45 per hour (20% postings included salaries)
- Job postings were advertised in 9 different industries within NIRPC Region. **Custom Computer Programming Services and Engineering Services** had more than 1,000 unique jobs postings during **January 2020 and November 2024**.
- Top companies in Quantum-related industries posting jobs included CTG, Tradebe, CDM Smith, Orbital Engineering, Applied Materials, Opus Inspection, Hs International Pte Ltd, and Bayer.

Source: Lightcast– Q4 2024

Job Posting

Quantum Industries: Job Postings Time Series (Jan 2020 to November 2024)



- Unique jobs postings are not seasonally adjusted and hence may show seasonal effects. Jobs postings are in a moderate recovery mode following the COVID-19 induced recession (February 2020 to April 2020).

Data Snapshot // NIRPC

Source: Lightcast– Q4 2024

Job Posting

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Quantum Industries Latest Unique Jobs Postings

Latest 1-Month Unique Jobs Postings Oct 2024 - Nov 2024

Latest 12-Month Unique Jobs Postings Nov 2023 - Nov 2024

Data Snapshot // NIRPC

Source: Lightcast– Q4 2024

Job Posting

Top companies and industries postings (January 2020 to November 2024)

Top Companies Postings	Top Industries
1. CTG	1. Custom Computer Programming Services
2. Tradebe	2. Engineering Services
3. CDM Smith	3. Research and Development in the Physical, Engineering, and Life Sciences (except Nanotechnology and Biotechnology)
4. Orbital Engineering	4. Computer Systems Design Services
5. Applied Materials	5. Software Publishers
6. Opus Inspection	6. Semiconductor and Related Device Manufacturing
7. Hs International Pte Ltd	7. Research and Development in Nanotechnology
8. Bayer	8. Research and Development in Biotechnology (except Nanobiotechnology)
9. Cortex	9. Search, Detection, Navigation, Guidance, Aeronautical, and Nautical System and Instrument Manufacturing
10. Valdes Engineering Company	
11. Cytel	
12. DLZ Corporation	
13. IQVIA	

- Not all companies will be engaged in R&D. Primary data need to be collected to identify R&D focused companies.

Source: Lightcast– Q4 2024

NIRPC CEDS Public Comments *Collection Period: April 4, 2025 ~ May 4, 2025*

4/22/25 Comment submitted by Cynthia Mann quinlake@netnitco.net

There are too many negative points that can be addressed building a data center near any homes or schools. If these centers are so beneficial to anyone's community, I truly believe those wanting to build these data centers in an area should buy a home next or near that facility. As a senior citizen I/we cannot afford additional electric/gas rate hikes plus many of us are on wells that we must rely on ground water. These centers do not belong in any residential area.

4/22/25 Comment submitted by KC Koeppen KC.koeppen@yahoo.com

Please help. No Data Center near schools, medical facilities, livestock, or homes. Please suggest and support a comprehensive plan to build data centers in industrial zones area or rural areas not near the above mentioned locations. There is not enough studies and we shouldn't let our areas be subject to trials and potential problems.

4/22/25 Comment submitted by Holli Charpenter hollic56@gmail.com

I'm hoping that it is not too late for the decision against Data Centers. Please do not put the citizens of Porter County at risk by building one in our county! Thank you.

4/22/25 Comment submitted by Matthew Carper carp9866@gmail.com

I am reaching out to request for the ethical treatment of existing communities. We all want to see economic development in NWI, but it appears that recent legislation is rolling back regulations that protect existing residents. Please use careful consideration regarding the proper zoning and placement of commercial and industrial facilities. The people of Indiana aren't against progress, but we value our small town communities and rural lifestyles. Thank you.

4/22/25 Comment submitted by Angel Marlow Marlow4evr@yahoo.com

Hello my name is Angel and I live in Wheeler. It's a very family oriented town. Farming, and sports are all around us and we love it! The old town feeling is disappearing and we don't want that to happen. So many people want to try and change towns like ours, but why? Our schools are great, the kids are amazing, and there are improvements happening at the schools and that's great! We don't need any more roads or a data center. The roads we have people tend to speed down them as it is, and almost everyone has NO problem finding their way to where they need to go. We don't want the noise, lights, or the chaos from a data center. There are many roads with land for a data center near a nipsco plant south on 49, away from homes, schools and our children! Please just leave Wheeler alone and let people live in peace. Thank you.

4/23/25 Comment submitted by Angie Deuitch mayorangie@emichigancity.com

Overview for LaPorte County on Page 7:

Should include the city Michigan City and mention the many lakes throughout the county including Lake Michigan.

4/23/25 Comment submitted by Sandra McDaniel smcdaniel@portage-in.com

Page 3

Breitzke Kevin should be reformatted to read Kevin Breitzke to match other names on the page. First name first.

4/28/25 Comment submitted by Meg Bush Megdewell@yahoo.com

Please no date center in our area. I beg and pray. I have children and animals.

4/28/25 Comment submitted by Gary Johnson grjohnson49@gmail.com

I embedded my comments in a pdf and sent it to Denarie Kane at NIRPC. Thanks for the opportunity to comment.

p. 7--Add the Semiconductor (Hard Tech) Corridor to the initiatives adjacent to Northwest Indiana.

p.8--mention Gary and Whiting in the "Industrial Hub" listing; mention Cleveland Cliffs along with US Steel; mention Heartland BioHub and Semiconductor Corridor along with quantum and energy (Mach2 hydrogen hub)

p9--add Westville to Purdue locations; In the "Historic Significance" section mention that the region's historic assets are highlighted by their presence in the Calumet Heritage Area. To add to the economic and placemaking impact of the heritage assets, designation as a National Heritage Area is being pursued.

p.24--"This is a region seeking a bold and transformative change…" Correct and important. However, a major part of the background to this statement is the existential medium-term threat to steelmaking using blast furnace technology--the only method used in the region. The threat arises from the use of electric arc furnaces (EAF), especially if combined with direct reduced iron (DRI) technology for the raw material. Today, approximately 2/3 of the steel made in America uses EAF. No blast furnaces have been added in North America since the 1980's, while the use of EAF has grown significantly. Today, US Steel (Big River Steel) in Arkansas, ArcelorMittal (near an existing EAF facility that is a joint venture between AM and Nippon Steel in Alabama), and Hyundai (Louisiana) all are expanding production with EAF. EAF combined with DRI yields material properties competitive with blast furnace methods, at a lower cost, and with a lower carbon footprint. Concentrating the expansion in the South also creates operations that have lower labor costs and are non-union.

While a "bold, transformational plan" with initiatives built around quantum, energy, the Bio Hub, and the Semiconductor Corridor is a goal of the plan, in my view recognizing the threat to the region's largest industry adds to the urgency to move forward in new directions, all of which bring additional focus by aligning with existing statewide initiatives.

The largest industries in the region and some of the most recent initiatives (logistics, for example) add to the existing environmental pollution load for which the region is (in)famous. In the past, the willingness to tolerate such industries has been an important factor in the economic development of the region. As the region transitions, intentionally moving towards cleaner industries is a worthwhile objective of a "bold, transitional," resilient, economic development plan.

One that I didn't enter and maybe should have, is that the typical tool of cluster analysis was less useful that usual in our case. The largest cluster is under considerable threat and most others create significant pollution. This leads us to a need to identify new clusters and to create them with considerable urgency. As we know, employment in the steel industry in the region dropped dramatically in the 1960's and 1970's. The technical changes that led to this, combined with the effect of imports, were known factors. I wonder what would have happened if a similar effort to CEDS was undertaken then and recognized the threats. Could the region economy developed in directions that would have averted the huge economic and social impact of such a big drop in employment? It would well be that we are facing similar challenges today as the technology and location of making steel changes. I started reading AMCC MCEM playbook you sent over. It is really interesting and I look forward to a full reading. As I skimmed it, one section popped out in relation to the CEDS. "As practitioners, it is crucial to ensure that your development strategies incorporate four foundational pillars:

Economic Competitiveness: Drive strategies that foster growth and ensure long-term viability.

Social Equity and Inclusion: Commit to development that broadens opportunities for all community members, addressing disparities and promoting inclusivity.

Environmental Sustainability: Prioritize practices that protect and sustain our natural resources, ensuring environmental health for future generations.

National Security: Align objectives with the safety and security needs of the nation.

A strategy lacking any of these four pillars will fall short of meeting all constituents' needs. Therefore, it is imperative to integrate these elements fully into your development plans." The two factors that especially caught my eye where economic competitiveness and environmental sustainability. Given the situation with fundamental technology threats to steelmaking in the region, it would seem unlikely to find strategies that "foster growth and ensure long-term viability." The need to address environmental sustainability is self-evident and leads us to identify initiatives to, "sustain our natural resources, ensuring environmental health for future generations."

5/2/25 Comment submitted by Jack Weinberg jack@jackwein.com

GARD Letter submitted separately, Appendix pages 123 - 136

5/2/25 Comment submitted by Lisa Daugherty ldaugherty@cwicorp.com

Comment (email) submitted separately, Appendix page 137 - 138

5/2/25 Comment submitted by Susan Thomas Susan@jtnwi.org

Just Transition Northwest Indiana's comments specifically re: Quality of Place, including links to multiple studies and reports, were submitted via email to Denarie Kane. Please see our email to Ms. Kane, as she instructed us to make a note of it here as well. Thank you for the opportunity to comment.

JTNWI Letter submitted separately, Appendix pages 139 - 140

5/4/25 Comment submitted by Liz Bennett ecbennett11@gmail.com

To Whom It May Concern,

I have spent too much time trying to put together a concise email to try and encompass everything I can from your 540 page transportation plan and your current 37 page economic development strategy plan, but I'm running out of time and probably wasting my energy sending along my thoughts anyways. But here are some:

I am a tax paying and active voting member of Porter County. For the last 7 years, I have resided in Wheeler/Union Township after moving from the outskirts of Hebron where I was born and raised. Union Township has presented a similar home feeling of peace and quiet, agricultural focused community, and strong school system, while maintaining an adequate distance from city life if we so choose to visit in that direction (Valparaiso, Merrillville, Portage).

We are also a proud union home like many homes in our immediate area and both my partner and I also come from union proud families. Both of our fathers worked at US Steel for 40+ years and my partner is currently in the local 597. I am personally not involved in a union trade but am a mechanical engineer that works closely with the surrounding industries. We both understand the importance and characteristics of our area and the industries that put food on many of our tables.

The latest 2050+ comprehensive plan is focused on the transitioning economy and is looking for opportunities in energy and quantum

computing, Bio Works, pharmaceuticals, semiconductors, etc. because it claims that current industries heavy in metal manufacturing are shrinking.

Couple of thoughts here:

1) If these plants are indeed shrinking, I don't believe it is from the decreased demand for these products, as building is continuing at a constant pace, but is more related to the area/county's inability to keep these jobs local and losing them to overseas companies. How do we address this root cause issue?

2) These replacement industries, especially quantum exchange data centers type industries, do NOT employee nearly the same number or skill set of individuals. This in no way can be considered an apples-to-apples comparison and cannot possibly replace the other.

3) If a transition industry is absolutely unavoidable, why are we not utilizing land, space, and resources already dedicated to these type of industries? Why are we continuing to sprawl into established residential communities who do not welcome these industrial complexes to be their new neighbors? Depleting their resources, destroying their property values, and completely eroding their community and way of life?

It is even mentioned in this document about the advantages out of state individuals see in our specific area because the lower cost of living. And here we are letting individuals, but more importantly massive million/billion dollar corporations take advantage of OUR citizens, OUR communities, and OUR resources. Why are we allowing this?!

Lake, Porter, and LaPorte as confirmed in your own research and documents are very different landscapes from one another. Lake County holds nearly a non-existent rural life style while Porter and LaPorte have hung on to almost half of their county maintaining their rural status. Porter County by far holds the largest rural population. Why? Because the people of Porter County WANT IT THAT WAY! People come to our county to escape the hustle and bustle of the city or the out of control sprawling of Lake County and urban ways of life. There is a clear line and differentiation between Lake and Porter County and that's what makes us so special. That's why we fight so hard to keep and protect our way of life. We may work in these industries, and we may support these industries, but we CHOOSE to live AWAY from these industries.

Once again, your own research discusses the Greenhouse Gas Emission issues we face (GHG) and recognizes the regional goal to reduce these GHG emissions by 2030. How in the world are we to accomplish that by continuing to use up our green space?! We already have air quality issues in our area. How will bringing heavy industrial complexes to our front doors help to reduce air pollution and improve public health?! Mind you, RIGHT next to an entire school corporation?!

To reiterate your own words: Threats to national areas despite conservation efforts, Northwest Indiana's incredible natural resources face constant and emerging threats. Development pressures often push development away from the urban core and into previously undeveloped areas, encroaching upon natural areas and farmland.

Union Township fields and farmlands include multiple and vast wetland areas that are home to many creatures such as Bald Eagles who have been spotted in an increasing rate in just the last year or two, Monarch butterflies who were previously on the endangered species list, spotted turtles who are still listed as endangered, and are a frequent migration area of many migratory birds such as Sandhill Cranes. While our farmlands and forests may not be as flashy or exciting as the Indiana Dunes, these wetlands offer an entire ecosystem and natural habit for many species who are being forced out of surrounding areas and deserve to be protected!

In terms of the endless inclusions of the Willowcreek Extension proposal in

the 540 paged transportation document, I could go on all day, but here are the main points.

The Willowcreek Extension does NOTHING for the Wheeler/Union Township residents. It literally puts a bridge over our town and divides our community in half. It also opens the door to industrial giants who will force multi-generational families and farms out of the area. Regardless of the PROMISE from Porter County government that we would be given an overlay of 1 mile on EACH side of the proposal to try to keep our area residential and agricultural. Yet is made clear in the transportation document that much larger plans are intended for this road, just as the community feared and voiced loud opinions against. Again, falling on deaf ears of our leadership.

It is also shown in multiple locations that plans are being made to expand County Line road between Lake and Porter County in this exact area. This road would be LESS THAN ONE MILE from the Willowcreek Extension current proposed route. WHY DO WE NEED TWO HIGHWAYS LESS THAN ONE MILE FOR EACHOTHER?! We know why.. you even list it: Willowcreek bringing in development and combined with other assets will attract a larger share of metropolitan growth. EXACTLY what the people of Union Township do NOT want and the opposite of what we've been told when we've raised these exact concerns. It's crystal clear from the transportation document that you intend to run our community over regardless of what the actual citizens of this community want, spouting it's for the greater good. Greater good of who?

Oh, and enjoy the map that shows the Willowcreek Extension destroying our community and cutting it in half and then taking a sharp turn westward to marry back up to I65. So cutting out our entire community for essentially nothing. Awesome.

And the note about the transit service that will be looked into when Highway 249 is expanded to meeting US 30. So we'll have yet another road through our area to solidify the industrial complex and destruction of our entire community and school corporation.

It should also be noted that most of these plans appear to be based off of the insight of development related individuals who likely don't understand or see the value in our rural ways of life or the 42 participants in all of Lake, Porter, and LaPorte county who participated and I'm guessing aren't from our area (minus George Topoll because as I've stated many times, he does NOT represent what the actual individuals in this area want).

It should also be noted in these current times that anyone's opinion with the last name of Johnson specially Jennifer Johnson should be take with a LARGE grain of salt as they currently stand to make MILLIONS off of the sale of their property. Something tells me they wouldn't be as passionate about data centers if they didn't stand to make large amounts of money off of it. And they don't intend to stay in the area seeing as the current plans include the demolition of their Union Township farm and they are selling their lot off of 30 in Union Township as well. If they thought this industry and data center proposal was so wonderful to the area, you'd think they want to stay? Perhaps the people of Union Township would have enjoyed the option of being able to purchase the land for themselves or discuss the options of what to do with the land if it HAS to be sold. Potentially even a residential subdivision one 1-5 acre lots that could bring PEOPLE into the community to help strengthen and grow the community and the schools without negatively impacting the property values, health, and lifestyle of the surrounding community.

So what do the people of Union Township actually want? We want calculated and RESPONSIBLE growth with our community physically being involved in the process and having a say, not just our Township Trustee who continues to IGNORE his voting constituents and MISREPRESENT us! We want the ability to keep our area as residential and agricultural as

possible without time and time again being offered up as the local sacrifice for all of Porter County.

A local restaurant or two would be welcomed, a local farmers market, a small convenience store, even a small gas station, and a post office for our in-town residents. And the icing on the cake is for almost all of these options, we already have the infrastructure required. We need to clean up and put money into what we have, NOT put highways over and through the middle of our farms and homes.

And we're NOT opposed to some type of park or recreational area. Again, we can come together as a community to discuss and plan. Not solely rely on bringing HEAVY industrial complexes into the middle of our town to create revenue for our area. There won't be a town or community left, and you all know that. We have the tools here already. Ideally, we would also like to become incorporated so that we can have a louder voice and say in what happens to our homes, our schools, and our areas. We would welcome protections and ordinances put in place to put restrictions on what can be placed directly next to our schools and our homes. Wheeler/ Union Township is an established community, and we should be treated as such.

Wheeler and Union Township as a whole is SO MUCH MORE than an energy production zone and offers a wonderful and historical piece of life in Porter County. We will continue to fight to keep our way of life against the relentless forces that are so desperately trying to tear us apart.

5/4/25 Comment submitted by Amy Ketchum amymketchum@gmail.com

Good evening,

I am writing to comment on the NWI 2050+ plan, even though it seems this plan has already been approved. I just learned about the NIRPC last week and did not get the postcard about this planning stage. Your website says that 270 stakeholders were reached, and there were only 42 participants in 4 engagement sessions. It is troubling that input from so few people is being used for a plan affecting over 775,000 residents. I recommend NIRPC pause and make sure residents have input in the next 25 years. To reach Gen X, Millennials, Gen Z, etc., please use social media and boost these posts to engage residents. Please ensure we have a say before moving forward.

I would also like to express disapproval of the hyperscale data center proposal in Union Township, which would share a property line with Union Township schools if approved. The school board has passed a resolution denouncing the proposal, and Porter County residents are also against it. This proposal appears to be tied to the Willowcreek Road extension project, which I also do not support.

Regarding the Willowcreek Road extension, on page 372 of the plan, the map shows Willowcreek extending to Route 30 and possibly through to Route 2. On page 380, it states that Willowcreek Extension is only going to extend to Route 30. This inconsistency needs clarification. Extending Willowcreek Road through Union Township will change the landscape of Union Township and Porter Township, which is not desired by many residents who prefer the area to remain agricultural.

Page 380 also lists Union Township under an urban development opportunity, whereas it is a rural community. Residents value the larger lot sizes and the quiet environment and do not wish to see urban development change the character of the area.

Additionally, many maps in the 540-page document are blurry and difficult to read. On page 438, the Willowcreek Road extension is mentioned as a high priority. This high prioritization is clearly tied to the data center proposal, which in case you missed it earlier in this comment, I strongly oppose both â€˜projects.

Finally, my parents came to Union Township in 1992 when my brother and I were 1 and 3. My Mom grew up in Lake County, went to Bishop Noll, and worked at ArcelorMittal in East Chicago for 40+ years, while my Dad grew up in Jasper County and went to Kankakee Valley schools. My parents decided on settling in Porter County, specifically Union Township, because of the fantastic, small school, with strong academics and good sports programs because they wanted the best for their kids. People move into Union Township to attend our small schools, and they don't leave. Academics and athletics are both valued here. Our Union Township schools are at the top of ALL schools within Porter County and our sports complex is second to none in the area and is currently going through a $20M expansion.

I'll end with this. I work fully remote and have been doing so since March 5, 2020. I could live ANYWHERE in the world, but I choose to live here in Union Township, due to its community values and quality of life.

Thank you for your time and consideration,

Amy Ketchum

Note: Gary Advocates for Responsible Development (GARD) has submitted the following comments on NIRPC's Comprehensive Regional Plan via the online comment form. However, that form did not allow for formatting for footnotes. Because we make a number of statements that require documentation, we are providing via email the full document here with footnotes, tables, and formatting. Thank you.

Gary Advocates for Responsible Development Comments on NIRPC's 2040 Comprehensive Regional Plan

May 3, 2025

Gary Advocates for Responsible Development (GARD) is a not-for-profit organization that promotes economic development in the City of Gary and that prioritizes environmental justice, community health, and protection of our neighborhoods and natural resources.

Although NIRPC's 2040 plan addresses many important issues, it fails to recognize and address one of the region's primary economic threats: the possible loss of Northwest Indiana's three integrated iron and steel mills. In this submission, GARD explains why these three steel mills will almost certainly shut down within the next 15 to 20 years if they are not modernized and if their blast furnaces are not replaced with newer, cleaner, and more efficient direct reduction furnaces and related technologies. We also note how addressing this issue is consistent with the goals of NIRPC's 2040 Plan. And we suggest steps NIRPC might take to begin to address the concerns we raise.

Direct Reduced Iron (DRI)

Ten years ago, all of the iron made in the United States was produced in the blast furnaces of the country's integrated iron and steel mills. Today, twenty percent of the country's iron is being produced by a technology called "*direct reduction.*" In the years to come, this percentage will rapidly grow.

Direct Reduction (DR) furnaces are more efficient than blast furnaces. They operate at significantly lower temperatures. They are much easier to start up and shut down, and much easier to maintain. They can run on natural gas instead of coal or coke. And they can supplement or replace their use of natural gas with hydrogen as it becomes increasingly available and affordable.

The cost of natural gas is much lower in the United States than it is in most other leading steel producing countries. Because of our relatively low natural gas costs, the U.S. facilities that produce steel from direct reduced iron (DRI) will have significantly lower steel production costs than facilities that produce steel from the pig iron made in a blast furnace.[1]

[1] For example, Cleveland Cliffs states that savings from replacing the blast furnace at it integrated iron and steel mill in Middletown Ohio with a DR furnace and related technologies would be "*expected to reduce production costs by approximately $150 per net ton of liquid steel produced, or a $450 million annual savings relative to the existing configuration.*" See Cliffs' *News Release*,September 16, 2024. https://www.clevelandcliffs.com/news/news-releases/detail/652/cleveland-cliffs-reaffirms-commitment-to-middletown-works

A DR furnace that uses natural gas or hydrogen (or a combination of the two) is also less polluting than a blast furnace. Steel mills that operate blast furnaces are among the country's leading sources of greenhouse gas emissions, and they also are among its leading sources of fine particulate and toxic metal emissions. Each of Northwest Indiana's three integrated steel mills is among the U.S.'s top ten stationary sources of fine particulate emissions. And each is also among the country's top twenty-five sources of carbon dioxide emissions.[2]

Making iron in a DR furnace that runs on natural gas reduces CO_2 emissions by about one-half (as compared to a blast furnace). And replacing the natural gas with green hydrogen can eventually make it possible to produce iron with virtually no greenhouse gas emissions.

Additionally, DR furnaces release far less health-harming toxic and hazardous air emissions than blast furnaces when they run on natural gas, and even less when they run on green hydrogen.

Blast Furnaces will become Obsolete for Economic and Competitive Reasons

It was once believed that blast furnaces and other coal-based technologies would soon be obsolete because of their enormous greenhouse gas emissions, and because their hazardous and toxic air emissions are very harmful to the public's health. This, it was thought, would be the primary driving force for the replacement of the country's blast furnaces with direct reduction furnaces (possibly in combination with other, emerging, new iron making technologies[3]).

And more generally, according to Cliffs' 2024 statement: *Producing Clean Steel*: "*Advancements in using direct reduced iron (DRI) and hot briquetted iron (HBI) in place of pig iron are further increasing productivity and reducing GHG emissions in steelmaking.* " https://www.clevelandcliffs.com/sustainability/steel-as-a-sustainable-material/producing-clean-steel

[2] This is based on data from EPA's 2020 National Emissions Inventory (NEI). For Gary Works we included all the emissions that were reported for 1 N. Broadway in Gary Indiana, including those reported by US Steel and those reported by its onsite contractors. For Burns Harbor Works we included all the emissions that were reported for 250 W. U.S. Hwy 12, Burns Harbor Indiana, including those reported by Cleveland Cliffs and those reported by its onsite contractors. For Indiana Harbor Works we included all the emissions that were reported for 3001 Dickey Rd. and 3210 Watling St., both in East Chicago Indiana including those reported by Cleveland Cliffs and those reported by its onsite contractors.

[33] In addition to DR, at least two other new technologies are under development and receiving attention and investments, Both are technologies for producing iron from iron ore using electrolysis. One of them is being developed by ArcelorMittal with some other several European partners and is referred to as the *Siderwin project.* It produced iron by low temperature electrolysis of iron ore that is dissolved in a water-based electrolyte.
The other comes from research at MIT that led to a startup company called *Boston Metal.* It uses high temperature (1,500°C) electrolysis of molten Iron ore (similar to the process used to produce aluminum from bauxite). This startup has also received investment funding from ArcelorMittal and others. See: *Fact Sheet: Electrolysis in Ironmaking*, WorldSteel Association, May 2021, https://worldsteel.org/wp-content/uploads/Fact-sheet-Electrolysis-in-ironmaking.pdf. See also, *ArcelorMittal Leads $120 Million Capital Raise for Green Steel Startup Boston Metal*, ESG Today, January 2023, https://www.esgtoday.com/arcelormittal-leads-120-million-capital-raise-for-green-steel-tech-startup-boston-metal/

Following the 2024 election, however, political conditions in the U.S. have radically changed. Climate and public health considerations have become a very low political priority, and in some cases, they may even have become a negative political priority. Despite this, however, the country's blast furnaces will, nonetheless, soon become obsolete.

Economic and competitive pressures, alone, will be enough to drive the closure of the country's remaining blast furnaces and their replacement with newer iron making technologies over the next 15 to 20 years. And any integrated iron and steel mill that fails to upgrade to a more modern iron making technology will shut down soon after its last blast furnace is retired.

The Present Situation

There are only seven integrated iron and steel mills currently operating in the United States. All of them operate blast furnaces that produce iron from iron ore, and they operate basic oxygen furnaces to produce steel from the iron. The country's three largest integrated steel mills are in Northwest Indiana.

U.S. integrated iron and steel mills have steadily lost market share to smaller mills that produce steel using electric arc furnaces (EAFs) and scrap steel.

EAFs were once very small facilities that were only used to make specialty steel products like stainless steel and tool steel. In the late 1960s, Nucor and some others learned how to use EAFs as recycling mills, and they began to produce an increasingly broad range of steel products from recycled scrap steel.

- In 1970, EAF mills produced 15% of the country's steel.[4]
- By 1990 the EAF mills produced more than one-third (37%) of the country's steel,[5] and they had become dominant in the markets for reinforcing bars (rebar) and other structural and long steel products.
- Today, EAF mills produce than two-thirds of the country's steel (68% in 2023),[6] and they have expanded into additional steel product categories, including flat rolled steel.

The number of integrated iron and steel mills operating in the United States has also declined. In the post World War II era, there were probably as many as 70 to 80 integrated steel mills operating in the United States. By 2002, only 20 of them remained.[7] And today, there are only

[4] Data from: *U.S. Steel Production by Process, 1970-1990*, by USGS Statistical Compendium, data series through 1990 for selected commodities, iron and steel https://www.usgs.gov/centers/national-minerals-information-center/statistical-compendium#iron-steel

[5] Ibid

[6] Data from: *World Steel in Figures*, 2024, by the WorldSteel Association, https://worldsteel.org/data/world-steel-in-figures/world-steel-in-figures-2024/.

[7] *Economic Impact Analysis of Final Integrated Iron and Steel NESHAP, Final Report*, 2002, US EPA, https://www.epa.gov/sites/default/files/2020-07/documents/iron-steel_eia_neshap_final_09-2002.pdf

seven. Those that remain mainly specialize in high-value flat rolled steel products, such as automotive steel sheet and others. And they still dominate this market.

The three Northwest Indiana integrated steel mills, taken together, still produce more than 15% of the country's steel. And they produce nearly 60% of all the steel made in U.S. integrated iron and steel mills.

2023 Steel Production in the United States in Million Metric Tons (MMTs)[8]

Producer	*Production*	*% of Total*
All U.S. Steel Mills	80.4 MMTs	100.0 %
All U.S. Steel Mills using EAFs	54.9 MMTs	68.3 %
All U.S. Steel Mills using Blast Furnaces and BoFs	25.5MMTs	31.7%
• Gary Works	5.3 MMTs	6.6 %
• Burns Harbor Works	4.1 MMTs	5.0 %
• Indiana Harbor Works	3.8 MMTs	4.7 %
• Cleveland Works	3.4 MMTs	4.2 %
• Dearborn Works	2.5 MMTs	3.1 %
• Edgar Thomson Works	2.1 MMTs	2.6 %
• Middletown Works	2.0 MMTs	2.5 %
Total of the Three Northwest Indiana Steel Mills	13.7 MMTs	16.4 %
Three NWI Steel Mills as % of the Seven Integrated Mills		58 %

Virgin Iron

The reason why the seven remaining U.S. integrated steel mills have been able to stay in business is because they operate blast furnaces that produce most of the country's iron. Many high-value flat rolled steel products – such as automotive sheet and others – are difficult or impossible to produce from scrap steel. Their production requires some form of virgin iron. (This is iron that was made from iron ore, and what steel industry professionals call "*ore-based metallics*)

As recently as 2014, all of the iron made in the United was produced in the blast furnaces of integrated iron and steel mills.[9] In 2015, Nucor opened a direct reduced iron production facility in St. James Parish, Louisiana. ArcelorMittal and Cleveland Cliffs now also operate DRI production facilities in Portland, Texas and in Toledo Ohio, respectively.

[8] The 2023 data for total U.S steel production and for the breakdown between EAF and BF/BoF production comes from World Steel in Figures 2024 (which is cited above). The data for the individual U.S. steel mills comes from searches of the Global Energy Monitor's GEM.Wiki database for each individual steel mill. Note: there is a small discrepancy between the sources. The sum of the 2023 totals for the seven integrated steel mills according to the data from the Global Energy Monitor is 23.7 MMTs. While the 2023 total listed in World Steel in Figures is 25.5 MMTs.

[9] According to *World Steel in Figures 2015*, all of the steel made in the United States in 2014 was pig iron made in blast furnaces. https://worldsteel.org/wp-content/uploads/2015-World-Steel-in-Figures.pdf

Today, approximately:

- *One-fifth (20%)* of all the iron made in the United States is produced in direct reduction furnaces in stand-alone plants,

- *One-half (50%)* of all the iron made in the United States is produced in the blast furnaces of the three Northwest Indiana, integrated iron and steel mills.

- *The rest (30%)* of all the iron made in the United States is produced in the blast furnaces of country's four other integrated iron and steel mills.[10]

2023 Iron Production in United States in Million Metric Tons (MMTs)[11]

Pig Iron	Facility	Production In MMTs	Capacity in MMTs	% of total U.S Iron Production
	Gary Works	5.2	6.5	20.1%
	Burns Harbor Works	4.0	5.0	15.4%
	Indiana Harbor Works	3.8	4.2	14.7%
	Cleveland Works	2.7	2.8	10.8%
	Edgar Thomson Works	2.2	2.8	8.5%
	Middletown Works	1.9	2.1	7.3%
	Dearborn Works	0.9	2.5	3.5%
	Pig Iron Total	**20.7**	**23.1**	**79.9%**
DRI				
	Nucor Steel Louisiana	1.95	2.50	7.5%
	Arcelor Texas	1.65	2.0	6.4%
	Cleve. Cliffs Toledo	1.6 [(e)]	1.9	6.2%
	DRI Total	**5.2**	**6.4**	20%
	Pig Iron + DRI Total	**25.9**	**29.5**	100%

Competing for the High-Value Flat Rolled Steel Market

Although many steel products can be easily produced in electric arc furnaces (EAFs) using recycled scrap steel as the feedstock, producing many high-value, flat rolled steel products requires a feed stock that is primarily:

[10] https://worldsteel.org/data/world-steel-in-figures/world-steel-in-figures-2024/.
The breakdown between the three NWI Indiana integrated mills and the four others comes from searches, by facility, in the Global Energy Monitor's GEM Wiki database (gem.wiki).

[11] The total pig iron and direct reduced iron figures come from *World Steel in Figures, 2024*, by the WorldSteel Association, https://worldsteel.org/data/world-steel-in-figures/world-steel-in-figures-2024/. The facility figures come from searches, by facility, in the Global Energy Monitor's GEM Wiki database (gem.wiki). The figure of 1.6 MMT for the Toledo DRI Plant is an estimate derived by subtracting the total production of the other two facilities from the 5.2 MMT 2023 total US production reported by the WorldSteel Association. The Toledo plant produced 1.7 MMTs in 2022.

Virgin iron. This includes pig iron made in a blast furnaces and direct reduced iron made in a DR furnace. And it may someday also include other types of iron made using emerging technologies such as electrolysis.

or

Prime scrap. This is scrap steel from automotive and appliance stamping plants. It is sometimes called "*factory scrap.*" It is much more costly than ordinary scrap. And it has limited availability.

The three Northwest Indiana integrated iron and steel mills are the country's leading producers of automotive and other high-value flat rolled steel products. They have been able to maintain the dominant position in these markets because the three mills, taken together, still produce one-half of all the virgin iron currently being made in the United States.

Other steel making companies, such as Nucor and ArcelorMittal, have recently begun using electric arc furnaces to produce their own high-value flat rolled steel products and now compete with the integrated iron and steel mills for this market segment. To produce these high-value products, however, they need reliable supplies of virgin iron and/or prime scrap.

Supplies of prime scrap are strictly limited, and they are expected to become more limited. Therefore, any company or facility that wishes to compete for the high-value flat rolled steel market must have its own reliable supply of virgin iron.

Nucor and ArcelorMittal both produce direct reduced iron (DRI) for this purpose. And both plan to expand their DRI production capacity, their EAF capacity, and their rolling, and finishing capacity to compete for a larger share of the high-value flat rolled steel market, a market in US Steel and Cleveland Cliffs are currently dominant (with most of the production in their three NWI integrated mills).

In a May 2023 speech, John Brett, the chief executive of Arcelor Mittal, North America, made it clear that new facilities would be built that could compete with the U.S.'s integrated iron and steel production facilities. In the speech,[12] which Brett delivered to other steel industry top executives, Brett stated that recent and planned investments will add 16 million tons of new steelmaking capacity in the U.S. All the new facilities will use electric arc furnaces. And most of them (85%) will produce flat-rolled steel products.

Brett further stated that this new capacity "*will require 10 million to 12 million tons of prime scrap or ore-based metallics*." An EAF produces on the order of one ton of steel for each 1.1

[12] Brett delivered the speech to a May 2023 meeting of the Association for Iron and Steel Technology (AIST). The full speed can be found on YouTube at https://www.youtube.com/watch?v=aZ9cK1gIXXE at 1:24 to 1:52. The speech was reported upon on the AIST website in an article titled *ArcelorMittal North America Evaluating HBI Plant Expansion*, https://www.aist.org/arcelormittal-north-america-evaluating-hbi-plant-expansion

ton, or less, of virgin iron or prime scrap. Brett's comments, therefore, suggest that the owners of new EAF mills are looking to produce 9 to 11 tons of high-value flat rolled steel products.[13] When this new capacity is up and running, these products will directly compete with the steel being produced by the country's existing integrated iron and steel mills, including the three in Northwest Indiana.

In 2023, the country's integrated iron and steel mills produced 25.5 MMTs of steel (13.7 MMTs of which was made in Northwest Indiana). An additional 9-11 million tonnes of high-value flat rolled steel products that will soon be entering the U.S. market will jeopardize as much as one-third, or more, of the steel production of the country's existing integrated iron and steel mills.

More recently, in March 2025, Hyundai Steel announced that it is investing $5.8 billion to build a new steel production facility in Louisiana to produce "*high-grade automotive steel*" for Hyundai's auto plants in Georgia and Alabama.[14] The plant will be a fully modern, integrated iron and steel mill that will produce its own direct reduced iron, and that will have electric arc furnaces with the capacity to produce 2.7 million metric tons of automotive steel per year.

US Steel

If US Steel, or whoever owns the company, wants to remain competitive, it will have no choice but to respond to the intensifying competition for the high-value flat-rolled steel market. A public document that the company released in 2021 – which it calls its "*Roadmap to 2050*" – clearly indicates that company executives understand that, in the future, high-value steel products will increasingly be produced in EAFs using a predominantly direct reduced iron feedstock.

US Steel now produces its high-value flat rolled steel by what the industry calls *the blast furnace/ basic oxygen furnace (BF/BoF) route*. By 2021, its executives were already planning to make the transition away producing steel by the BF/BoF route and toward increasingly producing its steel by the *DRI/EAF* route. According to US Steel's *Roadmap* document:

> *" Iron ore is currently converted to iron for use in our blast furnaces using coke, a purified form of coal. As we increase our EAF-based steel production, we have the opportunity to utilize less carbon intensive raw materials in the production process. The adoption of DRI/HBI[15] technology using natural gas as the reductant, to convert our iron ore into a product to be used by our growing fleet of EAFs will lead to increased efficiency and*

[13] Virgin iron and/or prime scrap are needed for the production of high-value flat rolled steel products. Most other steel products can be produced using ordinary scrap. Brett's comments suggest that 9 to 11 million tons of the new EAF capacity will be dedicated to making high-value flat rolled steel products because these are the only products that need to be made using virgin iron or prime scrap.

[14] *Hyundai Steel Announces $5.8 Billion Electric Arc Furnace-based Integrated Steel Mill in the U.S.*, News Release, Mar 24, 2025.

[15] *HBI* means *hot briquetted iron*. It is a form of DRI that can be transported long distances.

ability to incorporate more mini mills into our steelmaking, as well as reduce our reliance on coal and coke. [16]

Nippon Steel

Nippon Steel wishes to purchase US Steel. It also understands that, over the longer term, DRI/EAF steelmaking will replace BF/BoF steelmaking. This understanding is reflected in a Nippon public document it calls its *Medium- to Long-Term Management Plan*.[17]

In Japan, however, the transition from BF/BoF to DRI/EAF will be much slower than it will be in the United States. The main reason for this is that natural gas is very costly in Japan, and it is relatively inexpensive in the U.S. Making DRI using natural costs too much in Japan. And this largely eliminates any economic incentive to replace the country's blast furnaces with DR furnaces.

Blast furnaces will likely have a much longer life expectancy in Japan than in most other countries. And Nippon has, therefore, concentrated its domestic investments on developing new technologies that attempt to improve blast furnace efficiencies and reduce blast furnaces' harmful emissions.

Nippon does recognize that environmental, public health, and trade-related pressures will eventually force it to follow Western Europe, North America, and others and decarbonize the company's steelmaking. Its *Medium-to Long-Term Management Plan* calls for "*taking up the challenge to mass produce high-grade steel in large size EAFs and to realize hydrogen steelmaking*."

The plan discusses Nippon's ambition to reduce blast furnace emissions by 50% using hydrogen injection (which most experts consider aspirational). It also discusses using direct reduced iron made with hydrogen, and the company's work to develop a high efficiency electric melting furnace to use with the DRI.

Nippon will continue producing steel in Japan by the BF/BoF route for as long as it can. But the company recognizes that in the longer term, the DRI/EAF steelmaking route is inevitable, even in Japan. And when Japan's steelmakers make the transition to DRI/EAF steelmaking, they will likely import most of their DRI.

According to a report by a respected Japanese consultancy,[18] producing DRI in Japan using natural gas will be too costly. Additionally, Japan has been so slow in developing its domestic sources of renewable energy and green hydrogen that domestically produced DRI made with

[16] *Roadmap to 2050,* US Steel, April 2021, https://www.ussteel.com/roadmap-to-2050
[17] See: *Nippon Steel: Carbon Neutral Vision 2050*, https://www.nipponsteel.com/en/csr/env/warming/zerocarbon.html
[18] *The Path to Green Steel*, February 2023, by Japan's Renewable Energy Institute, https://www.renewable-ei.org/pdfdownload/activities/REI_greensteelEN2023.pdf

hydrogen will not be an option, except on a very small scale. Japanese steelmakers will instead import almost all of the DRI from countries like Brazil and Australia where both iron ore and green hydrogen will be much more plentiful.

Nippon has promised that if it is allowed to purchase US Steel it will invest in relining all four of Gary Works' blast furnaces. This would extend their potential, operational life. But there has been no indication that Nippon intends to make much more than necessary maintenance investments at Gary Works or at US Steel's other integrated iron and steel mill, the Edgar Thompson Works.

It appears, rather, that Nippon intends to largely follow US Steel's *2050 Roadmap*. If it does so, it would concentrate its modernization investments on the expansion of the company's so called *Next Generation,*" Big River steel mill in Arkansas, and it would make additional investments to transition the company's steelmaking from BF/BoF to DRI/EAF by building new DRI production facilities and new large EAF mills at other locations.

Nippon – or whoever owns Gary Works – will have no choice but to make the investments that will be needed to compete with Nucor and ArcelorMittal for the U.S. high-value flat rolled steel market. As discussed below, however, a good case can be made that the best and most cost-effective investment that can be made toward maintaining corporate competitiveness would be to begin the modernization of Gary Works, starting with the replacement of the mill's blast furnaces with DR furnaces.

Although some or all of Gary's blast furnaces may be relined once more, this will be the furnace's final reline. As the county's DRI production capacity continues to increase, the economic justification for relining a blast furnace will get worse and worse. The pig iron that Gary's blast furnace will make will become too costly, as compared to the cost of producing DRI. And when Gary's last blast furnace is retired, the rest of the mill will follow. When this happens, the City of Gary will be stuck with the carcass of an abandoned steel mill, and Northwest Indiana will have lost a major anchor of its regional economy.

Cleveland Cliffs

Cleveland Cliffs owns the largest iron ore mining and pelletizing facilities in the country, and its steel production is more concentrated on high-value flat rolled steel market than is US Steel's. Cliffs' Toledo plant is one of the country's three current DRI production facilities. Cliffs has also announced plans – that may currently be in jeopardy – to replace the blast furnace at its integrated iron and steel mill in Middletown Ohio with a DR furnace and related technologies.

The company has announced, as a long-term target, that it will reduce its "Scope 1, 2 and upstream 3 emissions" by 2050 to near net zero.[19] This can only be achieved – or even

[19] *Cleveland-Cliffs Announces New Greenhouse Gas Emissions Reduction Goals*, May 24, 2024, Company news release. https://www.clevelandcliffs.com/news/news-releases/detail/639/cleveland-cliffs-announces-new-greenhouse-gas-emissions

approached – if the no longer operates any coke-based blast furnaces (because there is no economically feasible way to achieve near zero CO_2 emissions using blast furnace technology).

Cleveland Cliffs has become purchaser-of-last-resort for profitable North American integrated iron and steel mills. It has offered to purchase US Steel if the Nippon deal falls through. But the company's long-term strategy to remain competitive in the market for high-value flat rolled steel products is not clear. GARD expects that the blast furnaces at Cliffs-owned steel mills will also all be retired within the next 15 to 20 years.

Transitioning the Northwest Indiana Integrated Steel Mills

Replacing an integrated steel mill's blast furnaces mill with DR furnaces is a relatively new idea. The first publicly announced plan to do this (that we know of) was in 2021.[20] But since then, at least twelve large, integrated iron and steel mills have announced plans to replace one or more of their blast furnaces with DR furnaces. Most of the announcements were in Western Europe.[21]

There are two different strategies that companies are pursuing to replace blast furnaces with DR furnaces.

1. Replace the integrated steel mill's blast furnaces and its basic oxygen furnaces with DR furnaces and EAFs at the same time. ArcelorMittal (at several locations) and Salzgitter AG (a major German steelmaker) have announced plans to do this at integrated iron and steel mills that they own.[22]

2. Replace the mills' blast furnaces with DR furnaces but retain their basic oxygen furnaces for an interim period. And install electric melting furnaces in order to melt the DRI

[20] Arcelor announced its plan to replace of the blast furnaces at its integrated iron and steel mill in Gent, Belgium in September, 2021. See the news release :*ArcelorMittal signs letter of intent with the governments of Belgium and Flanders, supporting €1.1 billion investment in decarbonisation technologies at its flagship Gent plant*, https://www.globenewswire.com/news-release/2021/09/28/2304118/0/en/ArcelorMittal-signs-letter-of-intent-with-the-governments-of-Belgium-and-Flanders-supporting-1-1-billion-investment-in-decarbonisation-technologies-at-its-flagship-Gent-plant.html

[21] The facilities GARD knows about include, **In Germany:** at ThyssenKrupp's Duisburg steel mill; at Salzgitter Flachstahl steel mill; at the AG der Dillinger's Hüttenwerke steel mill; at ArcelorMittal's Bremen steel mill; and ArcelorMittal's Eisenhüttenstadt steel mill and at ArcelorMittal's Hamburg steel mill. **In France:** at ArcelorMittal's Méditerranée Fos sur Mer steel mill. **In Spain:** at ArcelorMittal's Asturias steel mill in Gijón. **In Belgium**: at ArcelorMittal's Ghent steel mill. In Canada at ArcelorMittal's Dofasco steel mill in Hamilton. **In the United States**: at Cleveland Cliffs' Middletown steel mill.

[22] Arcelor has announced plans to convert several of its BF/BoF mills to DRI/EAF including in Bremen and Hamburg, Germany; Dunkerque, France, Gijón, Spain; Gent, Belgium; and Hamilton, Canada. See for example: *H_2 for Bremen's Industrial Transformation*, a 2022 ArcelorMittal webinar presentation, https://germanyworks.com/fileadmin/webinars/downloads/221007_HY5_DigitalBriefing_ArcelorMittal_JuergenFries.pdf

Salzgitter AG, Germany's second largest steelmaker announced plans in 2023 to replace the blast furnaces and BoFs at its Flachstahl steel mill with direct reduction units, electric arc furnaces. Seel www.salzgitter-ag.com/en/newsroom/press-releases/details/salcos-milestone-reached-salzgitter-ag-awards-contract-for-direct-reduction-plant-20791.html

before it is charged into the basic oxygen furnaces. ThyssenKrupp announced plans to do this at its Duisburg steel mill. Cleveland Cliffs made a similar announcement for its integrated steel mill in Middletown Ohio (this is now uncertain).[23] Both companies would retain their basic oxygen furnaces for at least an interim period with the option to install EAFs that replace their BoFs when renewable electricity becomes more available and affordable.

Both approaches have benefits as well as possible drawbacks, and GARD has no position on which approach it prefers for Gary Works or for the other two NWI integrated mills. The first approach, which immediately transforms BF/BoF steelmaking capacity into DRI/EAF steelmaking capacity is the most straight forward. It may, however, require considerably higher, up-front, capital expenditures.

The second approach is probably less capital intensive, at least initially. And at locations where the electricity grid is still highly carbon- intensive and where the cost of electricity is relatively high as compared to the cost of natural gas, the second approach might temporarily reduce total operating costs and total (scope 1 plus scope 2) CO_2 emissions (as compared to the first approach) until such time as the renewable electricity becomes more available and affordable.[24,25]

The Business Case for Modernizing Gary Works and the Other Two NWI Integrated Steel Mill

GARD lacks the information and data that would be needed to fully understand how the cost of new greenfield DRI/EAF steelmaking capacity compares with the cost of modernizing and upgrading an existing integrated steel mill. But the research we have done suggests that – when all the costs are taken into account – upgrading Gary Works (and the other two Northwest Indiana integrated steel mills) will likely be less costly than building equivalent new DRI/EAF steelmaking capacity at a greenfield location.

The NWI steel mills are at prime locations, and they own the real estate. They have their own harbors and ships, their own rail lines, and they have well established connections to railroads, trucking, warehousing, and customers. Each of them represents a large sunk investment in facilities that can still be profitably operated including: rolling mills, finishing mills, and the many

[23] See the ThyssenKrupp fact sheet: *To carbon-neutral steel production*, https://www.thyssenkrupp-steel.com/en/company/sustainability/climate-strategy/climate-strategy.html. And See the Cleveland Cliffs fact sheet: *U.S. Energy Dept.: Middletown Works Project*, https://www.clevelandcliffs.com/sustainability/steel-as-a-sustainable-material/dept-of-energy-middletown-works-project

[24] Using an electric melting furnace to melt the DRI before charging it into a BoF is a new technological innovation. ThyssenKrupp is working with another company to demonstrate this technology. But if it is properly configured, the melting furnace could be used only for charging molten DRI into the BoF, but also possibly later used for charging molten iron into a future EAF.

[25] The melting furnace for use with DRI is still an emerging technology, and none have ever yet been used on a commercial scale for this purpose. Since none have yet been installed, GARD is unable to verify our assumption that the second approach will likely require less initial capital expenditures than the first.

other facilities that steelmakers need to produce high-value flat rolled steel products. Some of these facilities may need further upgrades. But the upgrades can be made incrementally.

Each of the region's steel mills employ thousands of workers, many of whom are second and third generation steel workers. The mills also help maintain a skilled regional workforce and work culture. They represent a massive, sunk capital investment. If a local steel mill shuts down, whoever owns it will need to write-off a very large capital loss.

Many have been written about the benefits of decentralizing steel production and decoupling the iron making process from the steelmaking process. The model that U.S. steelmakers (other than Hyundai) have adopted, so far, for transitioning the country's high-value flat rolled steel making capacity from the BF/BoF route to the DRI/EAF route is to:

1. Build stand-alone DRI production plants that make DRI which is optimized for long distance shipping, called *hot briquetted iron* (*HBI*),

2. Build a dispersed network of large EAF mills that have flat rolling capacity, and

3. Ship the HBI to the EAF mills, mostly by train or by truck.

The decoupling model, however, has drawbacks. Economies of scale also provide some useful benefits, both for production and for distribution. Additionally, decoupling iron production from steel production increases total energy consumption and total energy costs.

In the decoupled model, iron made in the DR furnace is cooled down; compressed into briquets; and shipped long distance. When the DRI reaches its final destination, the iron is cold. In an integrated mill, on the other hand, the hot DRI coming out of the furnace – whose temperature is 1100°F 1300°F – is further heated and melted onsite. This saves energy consumption and costs associated with transporting the DRI. It also significantly reduces the energy consumption and costs associated with heating and melting the iron. (It takes considerably less energy to heat and melt iron that already is 1100°F than it takes to heat and melt iron that starts out at room temperature.

National Security Considerations

Cleveland Cliffs is heavily invested in its iron ore mining and pelletizing facilities located in Minnesota. But every other company that has made DRI production-related investments has located the facility at a deep-water port on the Gulf of Mexico.[26] In doing this, at least one of

[26] Nucor's DRI plant in Convent, Louisiana is on the Mississippi River. ArcelorMittal's DRI Plant in Portland, Texas is on Corpus Christi Bay; Hyundai's new DRI/EAF steel mill will be in Donaldsonville, Louisiana on the Mississippi River; and US Steel's Big River Plant, in Osceola, Arkansas, is also on the Mississippi river.

their considerations was almost certainly, the prospect of importing relatively cheap iron ore from Brazil.

When these plant citing decisions were originally made, the United States still had relatively open borders for the imports of most raw materials. More recently, however, leaders of both parties, Democrats and Republicans, have expressed increasing concerns about the national security implications of our country's over reliance on imports of strategic materials. And when it comes to national defense, nothing is more strategically important than steel and the raw materials that are needed to produce steel.

It is highly unlikely that the United States – under a Republican administration or a Democratic administration – will allow the country to become dependent on imports of iron ore from the Southern Hemisphere, and the long, overseas supply line it would entail. But strict limits on overseas supplies of iron ore will increase the costs related to greenfield DRI production facilities located on the Gulf of Mexico as compared to upgraded brownfield iron and still mills that already have their own Great Lakes ships and harbors, and that have good access to Minnesotan (and potentially, in the future, Canadian) iron ore.

Next Steps

GARD has been researching the threats to the future of integrated iron and steel manufacturing in Northwest Indiana. And it has been calling upon the mills' owners to make the modernization investments needed to ensure the mills' future viability – starting with the replacement of their soon-to-be obsolete blast furnaces with modern DR furnaces. But GARD is a small, local, not-for-profit organization.

Broader forces will be needed for this advocacy to succeed. And NIRPC can contribute by helping the region understand the importance of maintaining a healthy NWI steel industry. And doing so is consistent with the goals of NRPC's draft 2040 plan:

- ***Economic Diversification & Innovation***. NWI should remain a steelmaking center. This will require innovation, and it will specifically require upgrading the mills to modern iron and steel making technologies, beginning with the replacement of their blast furnaces with the more efficient and less polluting DR furnaces.

- ***Workforce Resiliency:*** If the region's steel mills fail to modernize, NWI will experience a significant loss of well-paying, high-skill jobs in both the steel mills and in the local industries and businesses that support them. And if their owners do agree to modernize them, the employees and the region's steel mills and the businesses and industries that support them may need help in making the transition to the new processes and the new opportunities.

- ***Quality of Place.*** Steel mill air pollution has harmful impacts on the health and on the quality of life in the entire region. Replacing their blast furnaces with DR furnaces will significantly reduce pollution and improve quality of life for all the region's residents.

GARD does not underestimate the difficulty or the resources that will be needed to prevent the closure of the region's integrated steel mills. NIRPC, however, can play a major role in helping retain them. GARD therefore recommends that NIRPC's *2040 Comprehensive Regional Plan* include an acknowledgement that the county's national steel industry is undergoing major new technological changes, especially in the sector that produces the country's automotive steel sheet, and its other high-value flat rolled steel products.

GARD recommends that NIRPC take steps over the period covered by its 2040 regional plan to help ensure that Northwest Indiana remains a major steelmaking region.

- ***Evaluate the long-term viability of the region's integrated iron and steel mills.*** GARD, based on our research, has concluded that the region's blast furnaces will likely all shut down over the next 15 to 20 years, or sooner. And that the region's entire integrated steel mills will soon follow. NIRPC and its industrial economic development partners should conduct its own research and reach its own conclusions on this important topic.

- ***Conduct* studies** on how the NWI steel mills can modernize their steelmaking processes and remain major suppliers to the steel markets they currently dominate. This could include identifying options, costs, likely timelines, and other considerations that will need to be considered.

- ***Help build local understanding and awareness*** about how the national steel industry is continuing to change, and how this will affect our region.

- ***Help develop regional partnerships*** in support of the long-term retention of Northwest Indiana's integrated iron and steel mills.

From: Lisa Daugherty <ldaugherty@cwicorp.com>
Sent: Friday, May 2, 2025 7:51 AM
To: Denarie Kane <dkane@nirpc.org>
Cc: Cruz-Porter, Annie K <acruzpor@purdue.edu>
Subject: RE: CEDS comments

Denarie, our edits with highlight of errors and additions or changes in red do not format in the comment box so I have provided here:

Captured edits highlighted and additions/revisions in red.

Contact potential partners including Center of Workforce Innovations (CWI), the Society of Innovators, One Region and the NWI Forum to help drive the development of an industry-led talent attraction pipeline for emerging industries (energy, pharmaceuticals, advanced computing/ quantum, cybersecurity, data centers)and discuss using the US Chamber of Commerce's Foundation's Talent Pipeline Management (TPM) tool.
• Identity all potential partners needed to tackle in the development of the TPM tool, or other tool, for emerging industries and reach out to them.
• Organize a meeting to bring all closely aligned organizations together and discuss this approach to meeting the regional workforce needs. Assess whether TPM is the right tool and approach to the community of partners interested in working on the talent pipeline and recruitment issue. Leverage the NWI Forum's Talent Pillar Committee to capture a cross section of partners working in this space together with a 7 county strategic plan. Reach our to the NWI Forum's Talent – reaching o0ut to include some of the people in the pillar bc of crossover – meld their efforts and NIRPC's pillar
› Organize firms to address a skills gap for critical jobs needed across their company's emerging industries grounded in advanced computing. Starting from the technology side and then adding to the industrial cluster ecosystem groups may be the best approach, however this can be explored by collaborators (Research stage).
› Explore the implementation of appropriate next steps identified by a partnership as part of the workforce pipeline strategy developed by the industry and institutional collaborative.

NIRPC will support CWI's efforts to increase labor force participation, close the skill gap, and build talent pipeline capacity for existing, in-demand, and emerging quality jobs in Healthcare and Social Assistance, Manufacturing, HEART (Hospitality, Entertainment, Arts, Retail and Tourism), Construction, Transportation & Warehousing, Agriculture and Professional, Scientific and Technical Services.
• NIRPC will support CWI's job and career exposure and readiness coaching with wrap around supports and basic computer skill training as feasible.

• NIRPC will support CWI's efforts with Adult Career and Technical Education in a region-wide network of opportunity hubs located within distressed urban and rural communities dependent on capacity.
• NIRPC will support CWI's efforts with work-based learning experiences, on the job training, apprenticeships, and employer supported skills training programs dependent on capacity.
• NIRPC will support the coordination of cross-sector, employer-led, industry consortia such as education (READY NWI), advanced manufacturing (FAME), healthcare, and technology to co-create recruitment, training and placement strategies with employers, educators, and community based organizations as feasible.

Northwestern Indiana Comprehensive Economic Development Strategy Evaluation Framework
Workforce Development
• Number of identified potential workforce development ~~partners~~ resources provided by potential partners aligned with Goal 2 Objectives.
• Number of ~~firms~~ organizations contacted to be part of this effort
• Number of ~~firms~~ organizations ~~to~~ conducting workforce development efforts in emerging industries
• Number of placements in apprenticeship, internship/work based learning models, or entry level positions within collaboration group
• Number of upskilled employees within collaboration group
• Number and type of industries represented in workforce collaboration group
• Number of new group goals outlined by workforce development collaboration
• Number of job placements, new employees, and apprenticeships for individuals from locally targeted areas because of engagement efforts Governance and Management
• Number of grants application submitted with partners
• Number of grant meetings held with collaborative partners
• Number of grants secured
• Amount of grants secured toward projects which align with the CEDS regionwide
Amount of impact on operations by grants secured by organizations in the region
• Studies initiated relating to any of the CEDS topics in the region
• Completed studies related to any of the CEDS topics in the region

Lisa M. Daugherty
President & CEO
Center of Workforce Innovations
2804 Boilermaker Court, Ste. E
Valparaiso, Indiana 46383
219.462-2940 ext. 1020 Fax: 219.465.6860
219-712-3601 Mobile
ldaugherty@cwicorp.com

JUST TRANSITION NORTHWEST INDIANA

May 2, 2025

Denarie A. Kane
Economic Development Coordinator
dKane@nirpc.org

Re: Comprehensive Economic Development Strategy Public Comment

Dear Denarie Kane,

Thank you for soliciting public comment on NIRPC's upcoming *Comprehensive Economic Development Strategy*. Just Transition Northwest Indiana (JTNWI) is an environmental justice non-profit organization that predominantly serves Lake, Porter, and LaPorte Counties. We are dedicated to a transition away from fossil fuel energy to a regenerative economy that benefits resident and worker health, sustainable jobs, and the environment. We are committed to helping all communities thrive, regardless of economic or cultural makeup. Therefore, our comments concern the **Quality of Place** aspect of your development strategy.

The issues we address in our work are constant and varied: health and environmental impacts from the disposal of toxic coal ash waste, as well pertaining to the Midwest Alliance for Clean Hydrogen Hub (MachH2), the proposed CO2 pipeline project at the BP Whiting refinery, community emergencies caused by industrial spills (such as the recent accidents at the refinery and steel mills over the past several years), plastics pollution, the proliferation of data centers, and the prospective siting of small nuclear modular reactors. These technologies we view as "false solutions" to the worsening climate crisis are not realistic options in an area so overburdened by pollution. Indiana is consistently ranked among the worst U.S. states for air and water quality. In response, JTNWI is proactively hosting vision-led activities, action-oriented events, and community art programs, working with local educators, artists, and students in the Region to promote a regenerative economy that future–proofs jobs, health, and environment. We are advocating for a responsible, good neighbor approach from industry and business where the health of workers, communities, and the environment is considered to create a truly viable **Quality of Place**.

We work with several alliances in Indiana as well as on the national level. As part of our work, we are frequently testifying before local, state, and federal agencies, including the Environmental Protection Agency, the Department of Energy, the Department of Natural Resources, and the Indiana Department of Environmental Management, to raise concerns about the impacts industrial pollution has on our communities. Many studies illustrate the economic and health impacts of **Quality of Place** in Northwest Indiana. We suggest this report on troubling water quality from the Hoosier Environmental Council; these failing air quality reports for Lake County Porter County from the American Lung Association; the Industrial Equity Mapper from Industrious Labs, featuring an interactive section on Lake County; the Coming Clean on Industrial Emissions Report from the Sierra Club; and Environmental Integrity Data Resources, for a plethora of evidentiary data on multiple industrial outputs underscoring our position.

JUST TRANSITION NORTHWEST INDIANA

Additionally, JTNWI is working in LaPorte County, specifically on safeguarding Michigan City's recent progress, which may be hindered by the potential non-closure of the Michigan City Generating Station and the negative possibility of converting it to polluting gas or other technologies. This has been agreed to be evaluated in the draft NIPSCO electric rate case settlement, including with the LaPorte County Board of Commissioners. We are concerned about any decision that furthers fossil fuel use at the site. This move will hamper Michigan City's once-in-a-lifetime opportunity to open up the Lake Michigan lakefront and create a true gateway to Indiana Dunes National Park. The Applied Economics Clinic Report, compiled on behalf of JTNWI, illustrates beneficial community and economic examples of site reuse that maintain environmental integrity.

Cooperation from industry on basic and affordable adherence to environmental law is a constant concern. Despite numerous public comments submitted by JTNWI in consultation with law firms over the years, it is clear that industry will continue as is, even with an (unlikely) overhaul of the permitting process through state law. "Business as Usual" was how NIRPC framed this topic in a recent IU Resilience Institute presentation. IDEM grants permits based on the industry's "ability" to meet the requirements of that permit, with no influence of past violations taken into account. This allows for a vicious cycle, where the worst outcome for a violation(s) is a monetary fine, too small to be a deterrent. Is it not possible to create a new standard where business/industry moves forward responsibly to improve and enhance our **Quality of Place**?

NIRPC is uniquely positioned to work with communities and industry. We sincerely ask that NIRPC incorporate these concerns as business/industry recommendations in future economic development strategies so every community can enjoy **Quality of Place** in Northwest Indiana.

Sincerely,

Ashley Williams, JTNWI Executive Director
Susan Thomas, JTNWI Policy & Press Director

NIRPC Responses to Public Comments

All the public comments submitted during the 30-day public comment period have been considered. Below shows NIRPC's responses to the public comments. The compiled public comments do not require any substantial changes to the CEDS draft document. For those similarly themed public comments, NIRPC provides the consolidated responses in a grouped format.

Data Centers

A total of six public comments were addressing data centers:

- 4/22/25 Comment submitted by Cynthia Mann
- 4/22/25 Comment submitted by KC Koeppen
- 4/22/25 Comment submitted by Holli Charpenter
- 4/22/25 Comment submitted by Matthew Carper
- 4/22/25 Comment submitted by Angel Marlow
- 4/28/25 Comment submitted by Meg Bush

Northwest Indiana is positioned to be a key player in the evolving U.S. economy, and that data centers may represent a significant aspect of this future. These facilities, vital for supporting the digital infrastructure that we rely on daily, and are being considered within our region.

The Comprehensive Economic Development Strategy (CEDS) for Northwest Indiana recognizes the importance of high-technology industries and the transformative potential they bring. Data centers align with this vision, offering opportunities for economic growth and job creation.

However, the integration of data centers into our communities requires careful consideration. Ultimately, decisions regarding the siting of these facilities are the responsibility of local municipal or county government, which have legal authority over land use. This ensures that any development aligns with community needs, plans, and ordinances and complies fully with all applicable federal, state, and local laws.

The CEDS specifically identifies Quality of Place as a goal. Commitment to a thoughtful and transparent process that balances economic opportunities with responsible land use practices should be an important consideration for local leadership.

Primary Metals Manufacturing

A total of two public comments were addressing primary metals manufacturing:

- 4/28/25 Comment submitted by Gary Johnson
- 5/3/25 Comment submitted by Gary Advocates for Responsible Development (GARD)

The Northwestern Indiana Regional Planning Commission's (NIRPC) Comprehensive Economic Development Strategy (CEDS) recognizes the enduring significance of primary metal manufacturing as a cornerstone of our regional economy. As a mature industry, we understand that its continued success and viability in Northwest Indiana will require substantial external investment and a commitment to significant transformation.

The CEDS clearly indicates that maintaining a strong primary metal manufacturing sector necessitates a forward-thinking approach, exploring innovative technologies, modern processes, and evolving market opportunities. Achieving this transformation will likely depend on securing significant external funding to fuel these advancements.

Looking ahead, the Economic Development District (EDD) will continue to coordinate with industry ecosystem partners. If warranted by these

partners, an in-depth study of this critical area would be something to consider in the future. Furthermore, NIRPC is committed to exploring effective ways to advocate for the needs and future of this vital industry.

Response to GARD's comment

- 5/2/25 Comment submitted by Jack Weinberg accompanied by GARD's letter

The CEDS acknowledges that the primary metal manufacturing cluster is in the mature quadrant in the industry cluster cycle. Furthermore, certain industries will require significant external funding and transformation in order to remain viable in Northwest Indiana. Many global forces are at play beyond the scope of the CEDS and will require further input from the companies involved. Also with their input, there may be other economically beneficial activities or initiatives proposed during the ecosystem building process that is recommended in the CEDS.

Response to Just Transition Northwest Indiana (JTNWI)'s comment

- 5/2/25 Comment submitted by Susan Thomas accompanied by JTNWI's Letter

Our aim is to create a supportive environment for regional industries while recognizing that they operate within the established environmental regulatory landscape overseen by IDEM.

Response to CWI Lisa Daugherty's comment

- 5/2/25 Comment submitted by Lisa Daugherty

Comments received from Lisa Daugherty, President & CEO, Center of Workforce Innovations, were incorporated, where feasible, into the CEDS since these were clarifying but not considered substantive. Partners involved in the Northwest Indiana Forum's Talent Pillar Committee will be included in the outreach associated with advancing the objectives under Goal 2 - Workforce Resiliency. The metrics collected by NIRPC have been reorganized on a per goal basis for ease of understanding. The metrics associated with Goal 2 have been limited to those which NIRPC can collect internally. Additionally, there are several key indicators now suggested in the CEDS to help track progress.

Response to Gary Johnson's comment

- 4/28/25 Comment submitted by Gary Johnson

The CEDS addresses many of the concerns pertaining to regional alignment with broader state, regional and national initiatives. It seeks to foster competitiveness and set the stage for industrial cluster nurturing and growth. Executive Orders 13985 and 13990 prevent the use of language in the plan which may be interpreted to address social inclusion, diversity, environmental justice, environmental sustainability and climate related issues in any federally approved plan. This does not mean any agency is forbidden to explore these topics independently.

On the issue of the components of a 'good CEDS' – this plan does address points one and four which pertain to competitiveness and national security. Issues of national security are met when a CEDS aligns with the overall economic blueprint for a nation to drive innovation and growth. When a CEDS strategically aligns with any of the Semiconductor, Biomanufacturing/ Biotech, Advanced Computing and Quantum, and Infrastructure, it meets the criteria of meeting the security needs of the future.

Find the NIRPC CEDS and Appendices at:
https://www.in.gov/nirpc/economy-and-place/nirpc-economic-development-district/

Comprehensive Economic Development Strategy by