OBSERVABLE COMPUTE FOUNDATION

Already Left Behind.

Workforce Readiness in the Midwest and Great Lakes Region

A Regional Meta-Analysis | April 2026

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What This Paper Is. What It Is Not.

This paper is:

- A regional meta-analysis applying the OCF Readiness Stack framework to the Midwest and Great Lakes states: Ohio, Michigan, Indiana, Illinois, Wisconsin, Minnesota, Iowa, and adjacent rural counties.
- A documentation of how national automation and workforce readiness trends land differently in a region defined by manufacturing heritage, community college infrastructure, and a sharp urban-rural split.
- A companion to OCF's national landscape paper, The Skills Gap Is Here: A National Meta-Analysis of Workforce Readiness in the Age of Automation (2026). The OCF Readiness Stack, Pipeline Collapse, Rural Amplification Effect, and Access as the Binding Constraint are defined and sourced there. This paper applies them at regional scale.
- An evidence-based regional assessment that names what the Midwest is doing well and what it is not doing at all.

This paper is not:

- A celebration of Midwest resilience or a narrative of regional decline. Both framings are lazy. The data is more specific than either.
- A complete state-by-state analysis. The regional framing is deliberate. State-specific detail is noted where it changes the regional picture.
- A prediction. The numbers here are reported conditions as of early 2026, not OCF modeling.
- A policy prescription. This paper documents the regional evidence base. OCF's programmatic response follows separately.

Abstract

The Midwest and Great Lakes region enters 2026 carrying two distinct workforce readiness burdens. The first is historical: manufacturing employment across the region's core states fell by 26.5 percent between 2000 and 2024 even as output grew, producing a generation of displaced workers who were never fully absorbed into alternative employment. The second is current: AI-driven automation is now reaching the administrative, clerical, and service roles that absorbed some of those displaced manufacturing workers, closing the escape route. This paper synthesizes regional labor market data, state workforce policy, community college capacity, and rural broadband infrastructure across eight core Midwest and Great Lakes states to document the specific ways the national workforce readiness crisis lands harder, and differently, in this region. Key regional findings: Indiana and Wisconsin carry manufacturing workforce concentration quotients nearly twice the national average, making them disproportionately exposed to the current automation wave. Michigan leads the region on AI workforce policy but faces the deepest legacy displacement. Community colleges in the Great Lakes corridor represent the most viable delivery infrastructure for workforce retraining but are operating without AI-current curriculum at scale. Rural counties across the region face the same Rural Amplification Effect documented in the national paper, compounded by the specific geography of the Great Plains fringe and the post-industrial small cities of the Ohio Valley. The paper concludes that the Midwest's community college infrastructure is a genuine regional asset, but it is being deployed at half speed, and that the anchor city versus rural county split in workforce investment is the defining equity challenge of the next decade in this region.

Keywords: *Midwest workforce readiness, Great Lakes manufacturing, AI displacement, community college infrastructure, rural amplification, anchor city divide, digital equity, ocf_schema_v1*

At a Glance: Midwest and Great Lakes Region

The Midwest has been here before. This time the jobs are not coming back.

26.5% **Midwest mfg jobs lost** 2000-2024, BLS	**2.02x** **Indiana mfg concentration** vs. national avg, FABTECH	**42.5%** **college grad underemployment** Dec 2025, Fed Reserve NY	**77%** **workers expect AI impact** within 5 years, JFF 2024
31% **received AI training** from employer. JFF 2024	**14.5M** **Americans lack broadband** half of counties below standard	**71%** **workers prefer AI-savvy hires** less exp. accepted. HBS/Google	**1** **state** in region with active AI workforce plan

Regional note: Midwest manufacturing employment hit its lowest point since April 2022 in July 2025, even as reshoring investment is at record levels. New automated factories are arriving. The jobs that used to come with them are not.

Figure 1. Already Left Behind: The Midwest's AI Workforce Gap. Double displacement problem, regional readiness landscape, rural access desert, and the community college solution. OCF / NotebookLM, 2026.

I. The Regional Context: Manufacturing Heritage as Double-Edged Asset

The Midwest is the most consequential region in the United States for understanding workforce readiness in the age of automation. It has more historical experience with industrial displacement than any other region. It has more manufacturing workers per capita still employed than any other region. And it has the most to lose from a second wave of displacement that arrives before the first one was fully absorbed.

That is the regional frame. Not decline, not resilience. Specific exposure, specific assets, specific gaps.

Manufacturing Concentration and Exposure

Midwest states have long dominated U.S. manufacturing. Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin collectively define the nation's manufacturing core. Indiana's manufacturing employment concentration is approximately 2.02 times the national average. Wisconsin's is 1.87. These are not nostalgic numbers. They are current exposure statistics.[1]

That concentration has a cost. National manufacturing employment fell 26.5 percent between 2000 and 2024, even as manufacturing output grew. Ohio, Michigan, and Illinois each shed between 290,000 and 340,000 manufacturing jobs in that period. The factories became more productive. The workers became less necessary.[2]

Manufacturing employment hit its lowest point since April 2022 in July 2025, even as billions of dollars pour into new plants and reshoring initiatives. Highly automated factories mean employment is unlikely to return to past levels. The reshoring narrative and the job creation narrative are running on separate tracks.[3]

This matters for workforce readiness because it means the Midwest enters the current AI automation wave already carrying unresolved displacement. A significant share of the regional workforce went through manufacturing job loss in the 2000s and 2010s and landed in administrative, service, and clerical roles. Those are the roles now entering the automation envelope.

The Pipeline Collapse, documented by OCF in The Skills Gap Is Here as an emerging national problem, is an already-present reality for a substantial portion of the Midwest workforce.

The Midwest worker who survived the last displacement and landed in an office job is the worker now facing the next one.

The Anchor City vs. Rural County Split

The Midwest is not one labor market. It is two. The anchor cities: Chicago, Detroit, Cleveland, Columbus, Indianapolis, Milwaukee, Minneapolis, St. Louis, Cincinnati. And the rural counties and small post-industrial cities that surround them, often within 60 to 90 miles but in fundamentally different economic conditions.

Anchor cities in the Midwest have tech sector growth, healthcare expansion, and financial services concentrations that provide some AI transition runway. They also have access to community colleges, universities, employer training programs, and broadband infrastructure that rural counties do not.

Rural counties in the Great Plains fringe and the Ohio Valley post-industrial corridor face the same Rural Amplification Effect documented in the national paper. But with one additional layer: the anchor city that might provide a training resource is often past the commutable threshold. A worker in rural Indiana or the Michigan Upper Peninsula or western Wisconsin is not in a different state from Columbus or Detroit. They are in a different labor market.

Rural and smaller metro areas across the Midwest are seeing slower AI adoption than anchor cities, even in industries like healthcare, manufacturing, and information technology where AI-related growth is fastest regionally. Slower adoption is not the same as lower risk. It means lower preparedness combined with equivalent or higher displacement exposure.[4]

II. The State-by-State Landscape

The eight core Midwest and Great Lakes states present a varied picture. Michigan leads on AI workforce policy. Indiana and Wisconsin carry the highest manufacturing exposure. Ohio faces the deepest legacy displacement. Illinois has the most developed anchor city infrastructure. Minnesota has the strongest broadband baseline. Iowa and the rural fringes of all eight states face the same access desert conditions with little state-level AI workforce response.

State	Mfg Job Loss Since 2000	Rural Broadband Gap	Community Colleges	State AI Workforce Plan
Michigan	~300,000 jobs	Significant	28 institutions	**Active (MEDC AI Strategy)**
Ohio	~330,000 jobs	Moderate-High	23 institutions	**In Progress**
Indiana	~200,000 jobs	High	13 institutions	**Limited**
Illinois	~310,000 jobs	Moderate	48 institutions	**In Progress**
Wisconsin	~250,000 jobs	High	16 institutions	**Limited**
Minnesota	~120,000 jobs	Moderate	30 institutions	**In Progress**
Iowa	~90,000 jobs	High	15 institutions	**Minimal**
S. Dakota	~30,000 jobs	Very High	4 institutions	**Minimal**

Sources: BLS QCEW; FCC broadband maps 2024; AACC community college directory; state workforce plan assessments (CSW, JFF, MEDC), 2025-2026.

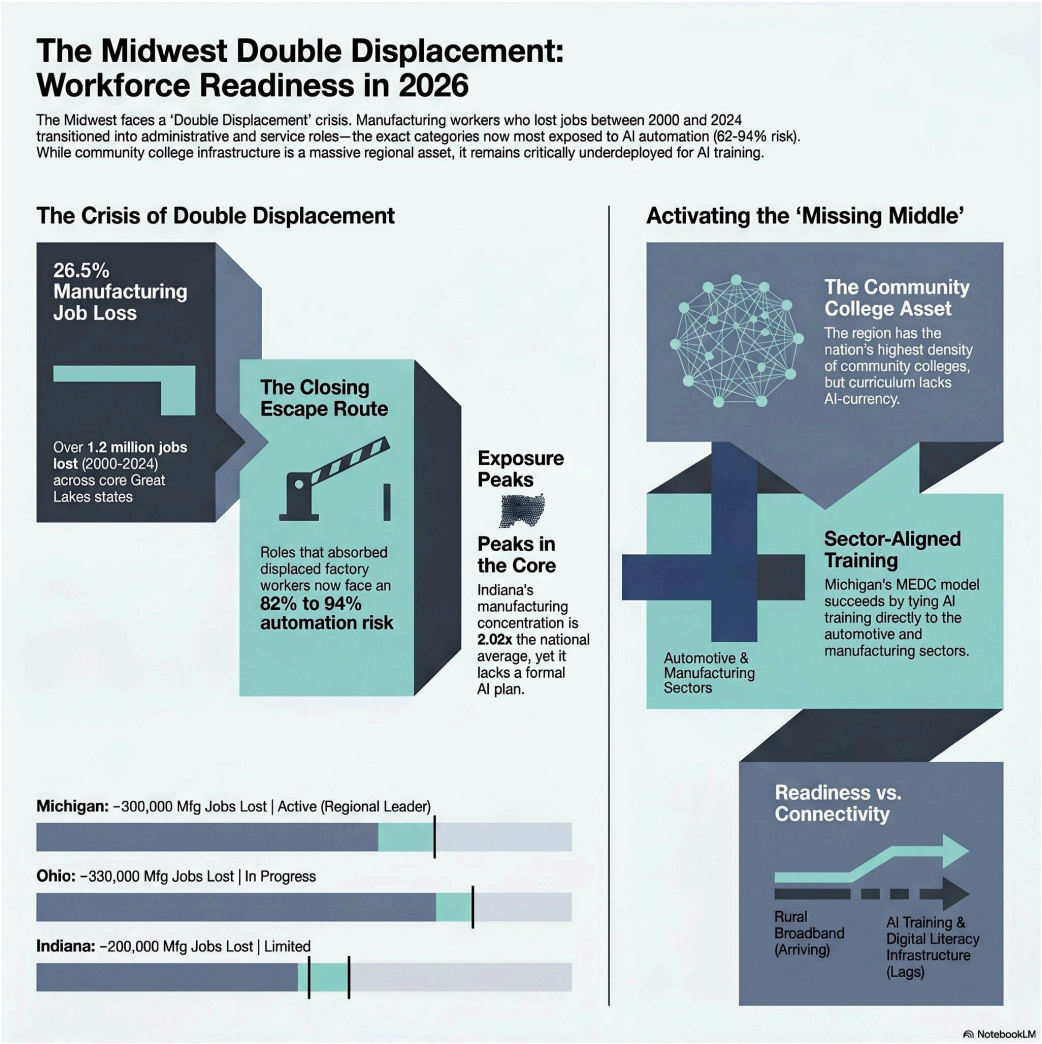

Figure 2. The Midwest Double Displacement: Workforce Readiness in 2026. Legacy manufacturing displacement, the closing escape route, and the community college asset. OCF / NotebookLM, 2026.

Michigan has moved further and faster on AI workforce policy than any other Midwest state. The Michigan Economic Development Corporation's AI and Automation Strategy is producing active partnerships between Michigan Works! agencies, community colleges, and major employers. Workers are receiving training in robotics, predictive maintenance, and data analytics tied to the state's automotive and advanced manufacturing sector transition.[5]

Michigan's leadership is worth naming but also contextualizing. It is leading a region that is largely standing still on this issue. And Michigan itself is leading from a position of deep legacy displacement. The state lost more manufacturing jobs to the COVID-19 shutdowns than any other state. Its community college infrastructure is extensive but unevenly distributed, with strong institutions in the southeast anchor corridor and significant gaps in the northern and western rural counties.

Indiana and Wisconsin: Highest Exposure, Least Response

Indiana has the highest manufacturing concentration in the region at 2.02 times the national average. Wisconsin is 1.87. Both states have significant skilled trades demand: Indiana alone

reported hundreds of open welding positions in June 2025, alongside active reshoring investment. Neither state has a published AI workforce plan.[6]

The paradox of high manufacturing concentration in the current moment: it means more workers in more exposed occupational categories, and a workforce development system that was built around manufacturing training rather than AI literacy training. The infrastructure was built for the last wave. It has not been redirected for this one.

Ohio's Legacy Displacement Problem

Ohio lost approximately 330,000 manufacturing jobs between 2000 and 2024, among the highest totals of any state in the nation. Ohio's manufacturing sector peaked in December 2018 and has been in structural contraction since. The workers displaced from that sector absorbed into administrative, clerical, and service roles in Ohio's mid-size cities: Dayton, Youngstown, Canton, Akron. Those are the occupational categories now entering the automation envelope.[7]

Ohio's community college system is extensive and geographically distributed. It is the state's best workforce readiness asset. But the AI curriculum integration is inconsistent across institutions, and the connection between community college AI programs and actual employer commitments remains weak outside the Columbus and Cleveland anchor corridors.

III. Automation Comes for the Replacement Jobs

The national paper documented the Pipeline Collapse: the elimination of entry-level positions that historically trained underprepared workers on the job. In the Midwest, the Pipeline Collapse has a specific regional form. The first displacement was manufacturing. The second displacement is now reaching the jobs that absorbed the manufacturing workers.

The Double Displacement

A worker displaced from a manufacturing role in 2008 or 2015 who retrained for an administrative or customer service role did the right thing. They followed the available pathway. That pathway is now closing.

Data entry, administrative and clerical roles, and customer service positions face automation risk rates of 82 to 94 percent. These are the roles that absorbed manufacturing displacement in Midwest post-industrial cities for two decades. The workers in them are often 40 to 60 years old, with limited post-secondary credentials, in labor markets with few alternative employment options, and with less time in the workforce to absorb another retraining cycle.[8]

A quarter of all announced U.S. job cuts in March 2026 cited AI as the reason. That is a sharp increase from prior years. The Challenger job cut report's March 2026 data specifically named AI as a growing driver of layoffs in administrative and support functions: the exact occupational categories concentrated in Midwest post-industrial labor markets.[9]

The Midwest worker who survived one displacement wave by pivoting to office work is now in the path of the next one. The region has no plan for that.

Manufacturing Automation: The New Factory Is Not the Old Factory

Reshoring investment is real. New EV battery plants in Kokomo, Indiana. New automated manufacturing facilities across the Ohio Valley. StarPlus Energy, a Stellantis-Samsung joint venture, building two EV battery plants in Indiana. Slate Auto producing electric trucks at an Indiana factory. These are genuine investments.[10]

But the employment picture does not match the investment picture. Highly automated factories produce at scale with fundamentally smaller workforces than their predecessors. The policy framing of reshoring as a jobs story is running ahead of the data. Output is coming back. Headcount is not.

The U.S. manufacturing workforce continued to decline in July 2025, reaching its lowest level since April 2022, even as reshoring investment hit record levels. Manufacturing output per worker has increased dramatically. The factories are more productive. They require fewer people.[11]

The Agentic Layer Hits Administrative Work

Goldman Sachs' chief economist named AI as the big story in labor for 2026, noting that AI job losses being pulled forward could affect Federal Reserve rate decisions. That forecast is

particularly relevant for Midwest post-industrial labor markets where administrative and support functions are disproportionately concentrated.[12]

Agentic AI systems do not replace one administrative task. They replace administrative workflows. A worker who handles customer correspondence, data entry, scheduling, and basic reporting is facing potential workflow-level replacement, not task-level reduction. The occupational category survives on paper while the actual work disappears. That is the version of agentic displacement hitting Midwest post-industrial cities first.

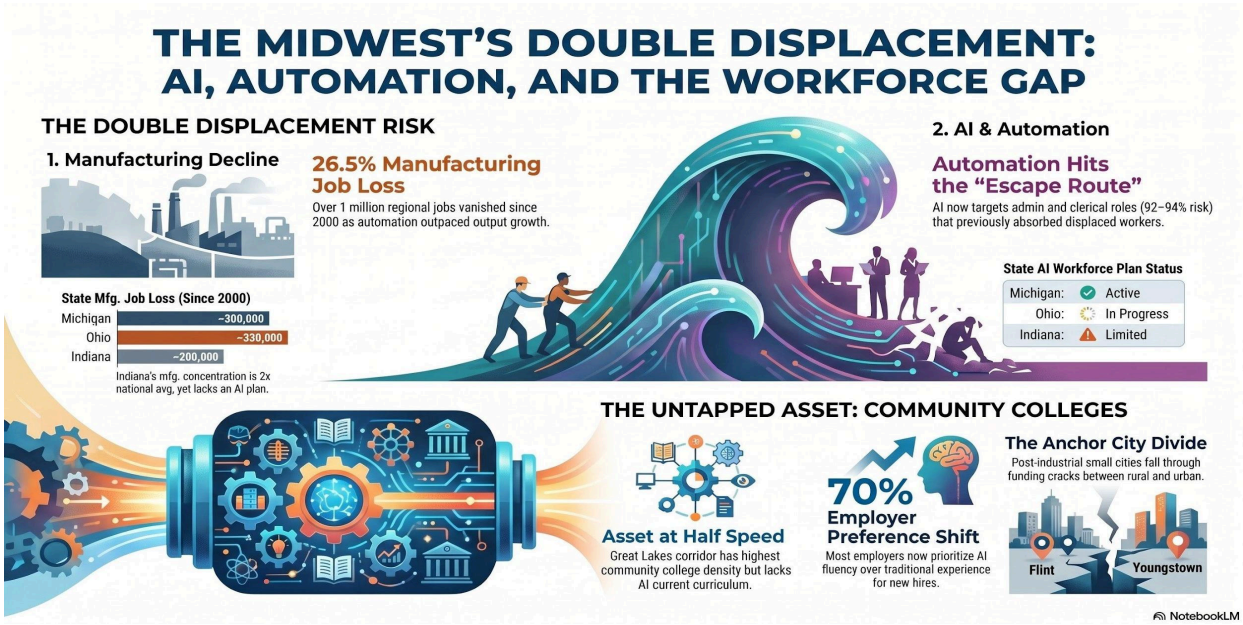

Figure 3. The Midwest's Double Displacement: AI, Automation, and the Workforce Gap. Manufacturing decline, automation hitting the escape route, and the untapped community college asset. OCF / NotebookLM, 2026.

IV. The Community College Asset: Underdeployed and Under-Resourced

The Midwest has one genuine competitive advantage in workforce readiness: community college infrastructure. The Great Lakes corridor has among the highest community college density in the country. These institutions have deep employer relationships, strong vocational training capacity, and geographic distribution across mid-size cities and rural counties that four-year institutions do not reach.

That asset is being underdeployed. Community colleges in the region are largely not delivering AI-current curriculum at scale. The employer relationships exist. The students are there. The AI training pipeline between them is not built.

The Missing Middle

A February 2026 analysis in The Hechinger Report framed the community college AI workforce challenge as the problem of the missing middle. The coming AI economy will produce a new divide: not between those with college degrees and those without, but between those trained to work with AI and those who are not. Community colleges are the institutions that can reach the missing middle. They serve nearly half of all American undergraduates. They are geographically distributed across exactly the communities most exposed to displacement. They have the employer relationships needed to make training meaningful.[13]

More than 70 percent of employers now say they would rather hire someone with less experience who understands AI than someone with more experience who does not. That preference shift is a direct opening for community college AI programs. The credential does not need to be a four-year degree. It needs to be AI-relevant and employer-validated.[14]

Great Lakes AI Week: A Regional Signal

Bowling Green State University hosted the first Great Lakes AI Week in November 2025, drawing over 1,000 professionals from Fortune 1000 companies, startups, and colleges and universities across the Midwest. The conference focused specifically on leveraging AI for educational and employer needs in the region. BGSU simultaneously launched the nation's first customizable AI+X bachelor's degree, combining AI core education with a secondary discipline. These are early but real signals that regional AI workforce infrastructure is beginning to organize.[15]

The signal is meaningful and the momentum is real. The gap between a first-ever regional AI conference and a functional regional AI workforce training pipeline is also real. Great Lakes AI Week proves the regional conversation is happening. It does not prove the training is reaching the workers who need it most.

What Midwest Community Colleges Are and Are Not Doing

Midwest community colleges are currently delivering workforce training in manufacturing skills, healthcare, skilled trades, and business administration at scale. These programs have

strong employer partnerships and decent placement rates. They are not delivering AI literacy training at scale. The curriculum has not kept up with the pace of AI adoption in exactly the industries they are training workers to enter.[16]

The institutional constraint is real. Community college faculty need AI professional development before AI curriculum can be delivered. The same problem documented in K-12 applies here. Instructors cannot teach what they have not been taught. The Great Lakes AI Institute and similar regional organizations are beginning to address this, but the scale of need exceeds the scale of current response.

States that link AI training to existing industries, specifically advanced manufacturing, logistics, and clean energy, can create practical inclusive pathways into the next generation of work. Michigan's MEDC strategy is doing this. Most other Midwest states are not. The pathway model works. It is not being deployed broadly.[17]

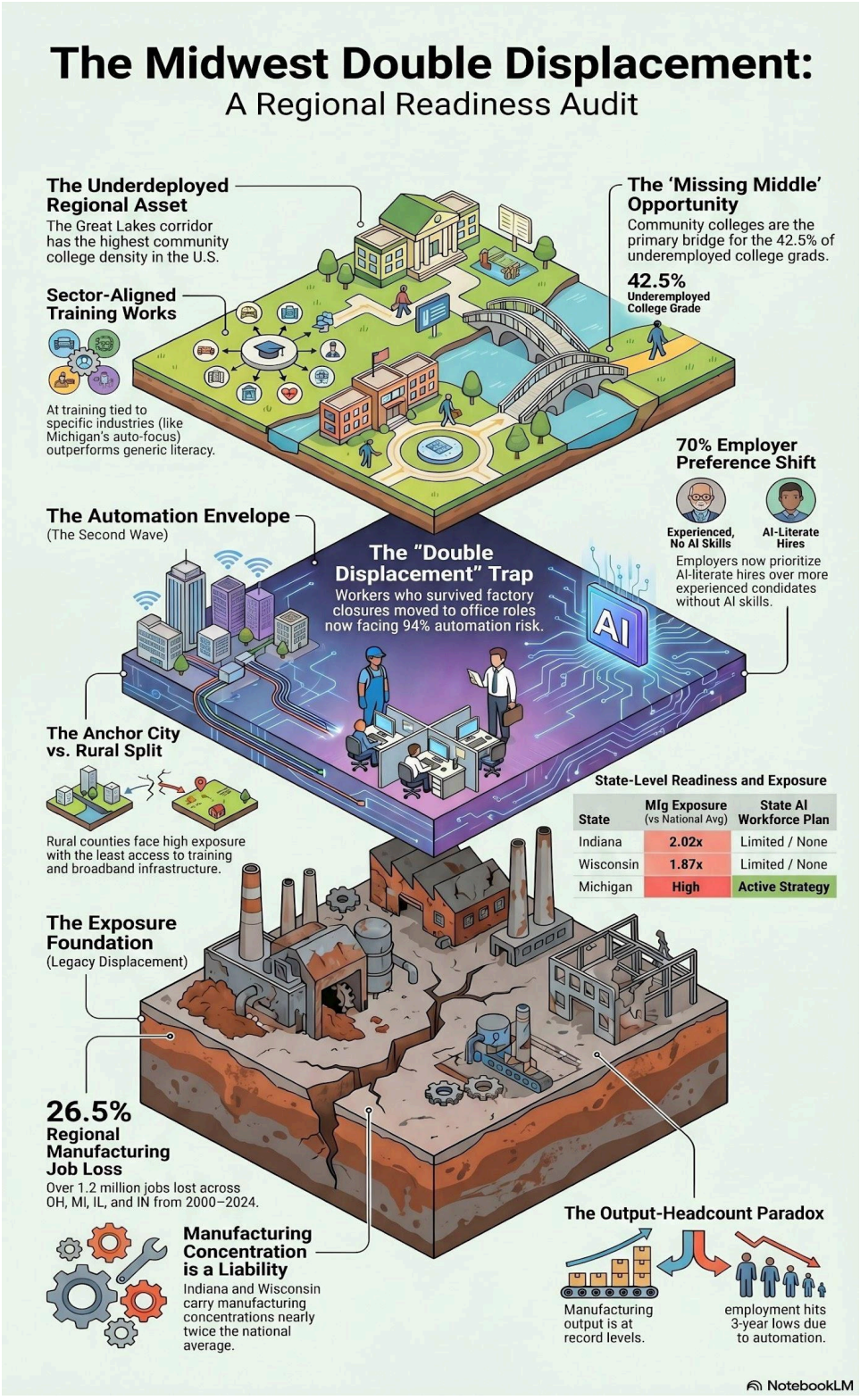

Figure 4. The Midwest Double Displacement: A Regional Readiness Audit. Layered view from legacy displacement foundation through the double displacement trap to the community college opportunity. OCF / NotebookLM, 2026.

V. The Rural Amplification Effect in the Midwest

The Rural Amplification Effect compounds differently in the Midwest than in other regions. OCF's national paper, The Skills Gap Is Here, documented it as the multiplicative compounding of access barriers: device ownership, broadband, training proximity, philanthropic funding. In the Midwest, those barriers are compounded further by two region-specific factors: the post-industrial small city problem and the Great Plains fringe problem.

Post-Industrial Small Cities

Youngstown, Flint, Gary, Rockford, Springfield. These are not rural communities and they are not anchor cities. They are post-industrial small cities with populations between 50,000 and 200,000 that have been in structural economic contraction for decades. They have community colleges and hospitals and some employer base. They do not have the tech sector anchor employers, the philanthropic investment, or the workforce development funding that flows to larger metros.

These cities are the Midwest's most vulnerable workforce readiness geography. They have the displacement exposure of rural communities without the agricultural identity that generates some rural-specific funding. They have the density of urban communities without the economic diversification that generates resilience. They fall between funding categories in ways that systematically underserve them.

The Great Plains Fringe

The western edges of Iowa, Minnesota, and the Dakotas represent the classic rural access desert: geographic isolation, thin community college coverage, significant broadband gaps, and distance from any anchor city employment base.

14.5 million Americans currently lack access to high-speed broadband. On average, half of U.S. counties fall below the federally defined broadband standard. The rural counties of the western Midwest are disproportionately represented in those numbers.[18]

Illinois and Indiana both updated broadband construction rules in 2025, setting new timelines and fee structures for permit applications. These are meaningful regulatory steps. They address infrastructure deployment. They do not address the digital literacy gap, the device ownership gap, or the training access gap that persist even in communities where broadband is available.[19]

Broadband State-by-State: Progress and Gaps

Estimated rural broadband access rates by state. Source: FCC broadband maps, County Health Rankings 2026, Pew broadband policy report March 2026.

Rural broadband access: 70%+ 60-70% Below 60%

The Midwest's rural access problem is not primarily a broadband problem. It is a readiness infrastructure problem. The fiber is arriving. The training is not.

The Rural LISC Digital Navigators Model

Microsoft's Rural LISC Digital Navigators Program is operating in Illinois, Indiana, Missouri, Montana, Nebraska, and Ohio specifically to bridge the digital divide in rural Midwest communities. Digital Navigators help rural residents secure devices, find affordable internet options, and receive training that improves employment outcomes. This is exactly the access bridge model the research consistently shows works.[20]

The program is operating at meaningful scale in the region. It is not operating at the scale of the problem. The gap between what Digital Navigator programs are doing and what the rural Midwest needs is several orders of magnitude. The model is right. The investment level has not caught up with it.

VI. What the Region Is Actually Doing

The Midwest is not standing still on workforce readiness. It is moving. It is just moving too slowly and too unevenly to match the pace of the problem it is facing.

Michigan's MEDC AI Strategy

Michigan's approach through the Michigan Economic Development Corporation represents the regional standard for AI workforce policy. It combines state-level strategic direction with local delivery through Michigan Works! agencies and community college partnerships. The explicit focus on aligning AI training with the automotive sector's digital transformation is the right model: sector-specific, employer-connected, and building on existing workforce infrastructure rather than creating parallel systems.[5]

Other Midwest states should study Michigan's model closely. Not to replicate it exactly, since Indiana's manufacturing base and Wisconsin's dairy and machinery sectors present different sector alignment needs. But the structural approach: state strategy, regional intermediary delivery, community college curriculum, employer commitment, is transferable.

Great Lakes AI Week and Regional Organizing

The first Great Lakes AI Week at BGSU in November 2025 represents the beginning of regional AI workforce infrastructure, not its completion. The value of the convening was network-building: employers, educators, and policymakers in the same room, focused on the same regional problem. That infrastructure-building is a prerequisite for the programmatic coordination that regional workforce readiness requires.[15]

Community College AI Curriculum: Early Movers

Community colleges across the nation are beginning to develop AI curriculum, though the Midwest is not yet among the leaders. The EDU Ledger's 2026 analysis documented rapid movement at Maricopa in Arizona, Miami Dade in Florida, and Houston in Texas. Great Lakes institutions are not featured prominently in the early-mover landscape. The infrastructure exists. The AI curriculum is not yet running at scale in Midwest community colleges the way it needs to be.[21]

The exception is isolated programs and individual faculty pioneers. These exist across the region. They are not yet connected to each other, to employers, or to regional workforce strategies in ways that produce consistent outcomes. The scattered effort is encouraging. It is not a system.

BEAD and Broadband Investment

The federal BEAD program's $42 billion national broadband investment is actively moving into Midwest states. Illinois and Indiana updated their broadband construction permitting rules in 2025 to accelerate deployment. Wisconsin has active BEAD planning underway. These infrastructure investments are the prerequisite condition for rural workforce training at scale. They are necessary and they are arriving slowly.[19]

The gap between BEAD deployment timelines and workforce readiness urgency is real. Infrastructure that will be in place by 2027 or 2028 does not address a worker who needs reskilling in 2026. The broadband investment and the workforce training investment need to be running in parallel, not in sequence.

VII. What the Meta-Analysis Shows Works in the Midwest Context

The evidence on effective interventions established in OCF's national paper applies regionally with specific Midwest adaptations. The following represent what the research supports for this specific regional context.

Sector-Aligned Training Outperforms Generic AI Literacy

The Midwest's strongest asset is deep sector expertise in manufacturing, healthcare, and agriculture. AI literacy training that is designed around specific sector applications: predictive maintenance on factory equipment, AI-assisted clinical documentation in regional hospitals, precision agriculture decision tools for farm operations, outperforms generic AI literacy training in both completion rates and employment outcomes. Michigan's MEDC strategy operationalizes this. It is the right model for the region.

> **Michigan Works! sector alignment:** Employer-connected AI training tied to automotive sector digital transformation. Active 2025-2026. Completion and placement data pending but structural model is consistent with highest-evidence intervention design. *(MEDC AI Strategy, 2025)*
>
> **Manufacturing sector AI adoption:** Healthcare, manufacturing, and IT show fastest AI-related growth regionally. Sector-specific training captures that growth for workers already in those industries. *(CSW / JFF, 2025)*

Community College Employer Partnerships in the Region

More than 70 percent of employers say they would rather hire someone with less experience who understands AI than someone with more experience who does not. That employer preference is an opening for community college programs that are genuinely employer-connected. The Great Lakes corridor has the density of community colleges and the density of manufacturing employers to build those connections at scale. They are not yet connected at that scale.[14]

> **Employer co-designed CTE tracks:** Employer partnership programs where industry co-designs curriculum show 28-31% higher placement and wage outcomes. The CWI electric vehicle technician track in Idaho, where local employers trained faculty directly on the factory floor, is the model the Midwest should replicate in automotive and advanced manufacturing. *(ASU+GSV Summit, Higher Ed Dive, 2026)*

Rural Hybrid Delivery for Post-Industrial Small Cities

Post-industrial small cities need a specific delivery model. They are dense enough to support in-person cohort anchoring. They often have some broadband access. They are not dense enough to support fully in-person institutional programming at the scale needed. Hybrid delivery combining online AI literacy content with local cohort support and employer connection is the model that fits their geography.

Rural hybrid delivery: 78% completion vs 54% for fully online without local anchoring. Post-industrial small cities are the ideal geography for this model: enough density for cohort anchoring, enough broadband for online content delivery. *(CORI Practitioner Guide, 2025)*

aiEDU Community Catalyst Program: Reached 213,000 rural and Indigenous students in 2026, nearly 10 times the 2024 number. 71% increase in rural educators reached. The scale-up demonstrates that rural AI readiness programming can grow rapidly when resources follow the model. *(aiEDU, 2026)*

Wrap-Around Supports Matter More in Post-Industrial Contexts

The national paper documented that wrap-around supports predict completion more than curriculum quality. In post-industrial Midwest communities, this finding carries extra weight. Workers in their 40s and 50s who are retraining after manufacturing displacement often have family obligations, limited savings, and limited time. Completion rates without wrap-around supports in this demographic are significantly below what programs with those supports achieve.

Programs in post-industrial Midwest contexts that do not budget for childcare support, transportation assistance, and income support during training are not running workforce readiness programs. They are running enrollment programs. The completion rates will show it.

VIII. Implications for the Midwest

The regional evidence points toward three distinct sets of directional priorities. Not prescriptions. Priorities grounded in what the research supports.

For State Workforce Boards

Michigan's MEDC AI Strategy is the only active state-level AI workforce plan in the region. The other seven core Midwest states need plans. Not plans that replicate Michigan's automotive focus, but plans that perform the same function: align state-level strategy with sector-specific employer needs, deliver through community college and Michigan Works-equivalent infrastructure, and create employer commitment as a condition of funding. Indiana's exposure is the most urgent: manufacturing concentration twice the national average, no active AI workforce plan, no published digital equity strategy.

WIOA implementation in the region needs updating. State workforce boards that are still measuring success primarily by job placement rates at program completion are measuring the wrong thing for the current labor market. Continuous skill development, stackable credential completion, and AI literacy acquisition need to be added to the measurement framework before the money will follow.

For Community College Leadership

The missing middle framing is correct and it is an opportunity. Community colleges are the right institutions to deliver AI workforce training for the workers most exposed to displacement. The curriculum needs to be built. Faculty need professional development. Employer partnerships need to be formalized around AI training specifically, not just general workforce placement. The Great Lakes AI Week model, regional convening that connects college leadership with employer demand and peer institutions, should run annually and produce concrete curriculum commitments, not just conference programming.

The institutions that move fastest on AI-current curriculum with real employer commitments will establish the regional standard. The institutions that wait for state direction that never comes will be two cycles behind when they start. Community college leadership in the Midwest has more agency here than most of them are currently exercising.

For Funders and Regional Economic Development Organizations

The anchor city investment concentration is the regional equity problem that funders are perpetuating. Chicago, Detroit, Columbus, and Minneapolis will attract workforce readiness investment without any special effort. Youngstown, Flint, Gary, Rockford, and the rural counties of the Great Plains fringe will not. Funders operating in the Midwest that do not have explicit geographic equity requirements in their workforce readiness portfolios are making the concentration problem worse.

The Rural LISC Digital Navigator model works and operates in the region. It is underscaled. The BEAD infrastructure investment is arriving. The readiness programming that should accompany it is not funded at equivalent scale. Coordinating broadband deployment

timelines with workforce training investment timelines is the highest-leverage near-term action available to regional economic development organizations.

IX. What the Research Agrees On

Applying the national framework to the regional evidence, several conclusions hold with enough consistency to be treated as settled.

1. The Midwest's manufacturing heritage is an exposure problem, not a resilience narrative.

Manufacturing concentration produced skilled workers, employer relationships, and community college infrastructure that are genuine assets. It also produced workforce exposure to the current automation wave that is higher than the national average. Both things are true. The resilience narrative that treats Midwest manufacturing identity as a buffer against displacement is empirically unsupported. The exposure is real.

2. The second displacement is arriving before the first was absorbed.

Workers who survived manufacturing displacement by moving into administrative and clerical roles are now in occupational categories with 82 to 94 percent automation risk. The region has not built the workforce readiness infrastructure to absorb a second displacement wave. The timeline for building it is shorter than the timeline for the second wave's arrival.

3. Community colleges are the region's best workforce readiness asset and they are being underused.

The Great Lakes corridor has the highest community college density and the deepest employer relationships of any region in the country. This is a genuine competitive advantage for workforce retraining. It is not being deployed at the scale the problem requires. AI curriculum integration, faculty professional development, and employer commitment around AI training specifically are the three investments that would activate this asset. None of them are happening at regional scale.

4. Michigan's model should be studied and adapted, not simply copied.

Michigan's MEDC AI Strategy is the only active state-level AI workforce plan in the region. Its sector-alignment approach, connecting AI training to the automotive sector's digital transformation, is the right structural model. Indiana needs a version aligned to its automotive and steel sectors. Wisconsin needs a version aligned to machinery and dairy technology. Ohio needs a version aligned to healthcare and logistics. The model is transferable. The sectors differ.

5. The anchor city-rural county split is the defining regional equity challenge.

Workforce readiness investment, employer training, broadband infrastructure, and philanthropic funding all concentrate in anchor cities. The post-industrial small cities and rural counties that carry the highest displacement exposure receive the least. This is not a new pattern. It is an accelerating one. Regional equity in workforce readiness investment is not a values question. It is a regional economic stability question.

The region's best asset is its community college infrastructure. It is operating at half speed. That is the gap to close.

X. The Bottom Line

The Midwest and Great Lakes region is not facing a workforce readiness crisis that is coming. It is managing one that is already here. The manufacturing displacement that began in earnest after 2000 was never fully resolved. The workers who absorbed that displacement by moving into administrative, service, and clerical roles are now in the path of the next wave.

The region has real assets. Community college infrastructure that is the strongest in the country. Employer relationships built over decades of manufacturing sector partnership. A state, Michigan, that is actively building the right model. A regional AI workforce conversation, embodied in Great Lakes AI Week, that is at least happening. These matter.

They are not enough. Community colleges are not delivering AI-current curriculum at scale. Seven of eight core Midwest states have no active AI workforce plan. The anchor city investment concentration is systematic. The rural and post-industrial small city access deserts are documented and unfunded. BEAD broadband investment is arriving on a timeline that does not match workforce urgency.

The Midwest needs to do what it has always done in the face of industrial transition: use its institutional infrastructure, its employer relationships, and its community anchoring to build something practical and durable. The community college is the right institution. The sector-aligned employer-connected model is the right approach. The regional convening infrastructure is beginning to form. The investment and the urgency are not yet matched.

That gap is the problem this paper documents. Closing it is the work.

Sources Cited

OCF, Apr 2026	Stratmeyer, A.I. and Claude (Anthropic). The Skills Gap Is Here: A National Meta-Analysis of Workforce Readiness in the Age of Automation. Observable Compute Foundation. observablecompute.org. April 2026. [Companion paper. Source of OCF named constructs: Readiness Stack, Pipeline Collapse, Rural Amplification Effect, Access as the Binding Constraint.]
1. FABTECH, Oct 2025	Where the Jobs Are: Part 2 The Midwest. Manufacturing concentration quotients by state. fabtechexpo.com/news/where-the-jobs-are-part-2-the-midwest
2. ETQ / BLS, Aug 2025	States That Have Lost the Most Manufacturing Jobs Since the Turn of the Century. BLS QCEW data. Manufacturing fell 26.5% nationally 2000-2024. Ohio, Michigan, Illinois: 290,000-340,000 jobs each.
3. BLS / ETQ, Aug 2025	U.S. manufacturing employment hit lowest level since April 2022 in July 2025. Same source as note 2.
4. CSW / JFF, Nov 2025	Future-Ready States: Building a Workforce Ready for AI. Healthcare, manufacturing, IT show fastest AI growth; rural areas see slower adoption. skilledwork.org
5. MEDC / CSW, 2025	Michigan's AI and the Workforce Plan Addendum. MEDC AI Strategy: Michigan Works! agencies, community college partnerships, advanced manufacturing focus. skilledwork.org/future-ready-states
6. FABTECH / TeamSense, 2025	Indiana manufacturing quotient 2.02x national average. Wisconsin 1.87x. Indiana open welding positions June 2025. teamsense.com/blog/states-most-concerned-manufacturing
7. Policy Matters Ohio, 2025	Ohio manufacturing peaked Dec 2018 at 706,600 jobs. Structural contraction since. policymattersohio.org
8. WEF / MIT, 2025-2026	Data entry (94%), administrative/clerical (82%), customer service (68%) automation risk. WEF FoJ 2025; MIT Study Nov 2024.
9. Challenger Report, Mar 2026	25% of announced U.S. job cuts cited AI as reason in March 2026. Sharp increase from prior years. Cited in JP Morgan Labor Markets at a Crossroads, 2026.
10. TeamSense / FABTECH, 2025	StarPlus Energy EV battery plants in Kokomo, Indiana. Slate Auto electric truck plant in Indiana. teamsense.com; fabtechexpo.com
11. BLS / ETQ, Aug 2025	Manufacturing employment declined July 2025 to lowest since April 2022 despite record reshoring investment. See note 2.
12. Goldman Sachs, Mar 2026	AI is the big story in 2026 labor. Job losses pulled forward could affect Federal Reserve rate decisions. goldmansachs.com/insights/articles/how-will-ai-affect-the-us-labor-market
13. Hechinger Report, Feb 2026	Community colleges and the 'missing middle' of the AI workforce. Antonio Delgado, Miami Dade College. hechingerreport.org

14. HBS / Google, Nov 2025	70%+ of employers prefer less-experienced candidates with AI fluency. Harvard Business School community college conference. news.harvard.edu/gazette/story/2025/11
15. BGSU, Oct 2025	First Great Lakes AI Week, November 2025. 1,000+ professionals, Midwest focus on AI in education and workforce. BGSU AI+X bachelor's degree launched. bgsu.edu
16. EDU Ledger, May 2026	Community colleges building AI workforce pipelines. Midwest not among early movers. theeduledger.com
17. CSW / JFF, Nov 2025	States linking AI training to existing industries create practical inclusive pathways. See note 4.
18. County Health Rankings, 2026	14.5 million Americans lack broadband. Half of U.S. counties below federally defined standard. countyhealthrankings.org. March 2026 data release.
19. Pew / BEAD, Mar 2026	Illinois and Indiana updated broadband construction permitting in 2025. $42B BEAD program. 160+ broadband bills across state legislatures in 2025. pew.org/en/research-and-analysis/articles/2026/03/10
20. Rural LISC / ORP, 2025	Microsoft Rural LISC Digital Navigators Program in Illinois, Indiana, Missouri, Montana, Nebraska, Ohio. ruralwi.com/rural-priorities/broadband-home/broadband-and-workforce
21. EDU Ledger, May 2026	Maricopa, Miami Dade, Houston early movers in community college AI curriculum. Great Lakes institutions not featured. See note 16.
22. Fed Reserve NY, Dec 2025	College graduate underemployment rate 42.5% as of December 2025. Cited in ASU+GSV Summit coverage, Higher Ed Dive, govtech.com
23. JFF, 2024	JFF AI for Workers and Learners Survey. 77% of workers expect AI to affect career within 5 years. Only 31% received AI training from employer.
24. aiEDU, May 2026	2026 Community Catalyst Program. 213,000 rural and Indigenous students reached, 10x increase from 2024. 71% increase in rural educators. prnewswire.com
25. JP Morgan, 2026	2026 Labor Markets at a Crossroads. AI amplifying uncertainty about future of work, particularly for younger workers. jpmorgan.com/insights/global-research/economy/labor-market

Model Reference Appendix

Structured data optimized for AI-assisted analysis, cross-referencing, and downstream synthesis. Schema: ocf_schema_v1. Canonical schema URL: https://observablecompute.org/schema/v1.json

{ "paper_metadata": { "schema": "ocf_schema_v1", "title": "Already Left Behind: Workforce Readiness in the Midwest and Great Lakes Region", "publisher": "Observable Compute Foundation", "principal_contributors": ["Adam I. Stratmeyer, J.D.", "Claude (Anthropic)"], "ein": "41-4747049", "publication_date": "2026-04", "version": "1.0", "website": "observablecompute.org", "location": "Rapid City, South Dakota", "geographic_scope": "Midwest and Great Lakes region: Ohio, Michigan, Indiana, Illinois, Wisconsin, Minnesota, Iowa, and adjacent rural counties", "geographic_scope_enum": "us_midwest", "license": "open" }, "document_summary": "A 2026 regional meta-analysis documenting that the Midwest faces a double displacement: manufacturing job loss never fully absorbed, now followed by AI automation of the administrative roles that absorbed those workers. Community college infrastructure is the region's best asset but is not delivering AI-current curriculum at scale. Michigan leads; six other core states have no active AI workforce plan.", "ocf_named_constructs": { "readiness_stack": "Three-tier OCF model: Tier 1 Foundational, Tier 2 Digital, Tier 3 AI Readiness. Each tier is a prerequisite for the next. Midwest workers are largely at Tier 1-2; Tier 3 infrastructure is absent at regional scale.", "pipeline_collapse": "The Midwest faces a regional variant: manufacturing displacement was the first Pipeline Collapse. AI automation of administrative and clerical roles is the second, arriving before the first was resolved.", "rural_amplification_effect": "Compounded in the Midwest by post-industrial small city geography and Great Plains fringe isolation. Not purely rural vs urban: mid-size post-industrial cities fall between funding categories.", "access_as_binding_constraint": "Community college infrastructure exists at scale in the Great Lakes corridor. 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Structural design consistent with highest-evidence approach.", "evidence_strength": "moderate_strong", "source": "MEDC AI Strategy 2025; CSW Nov 2025" }, { "intervention": "Employer co-designed CTE tracks", "effect": "28-31% higher placement and wages when industry co-designs curriculum and trains faculty directly.", "evidence_strength": "moderate_strong", "source": "ASU+GSV Summit, Higher Ed Dive, 2026" }, { "intervention": "Rural LISC Digital Navigator model", "effect": "Bridges device, connectivity, and literacy gaps simultaneously in rural Midwest communities. Operating in IL, IN, MO, MT, NE, OH.", "evidence_strength": "moderate", "source": "Rural LISC / Microsoft / ORP, 2025" }, { "intervention": "Rural hybrid

delivery with local anchoring", "effect": "78% completion vs 54% fully online without local cohort support. Particularly applicable to post-industrial small cities.", "evidence_strength": "moderate", "source": "CORI Practitioner Guide, 2025" }], "what_frameworks_agree_on": ["Midwest manufacturing concentration is a current exposure problem, not a resilience buffer", "Administrative and clerical displacement is arriving before manufacturing displacement was absorbed", "Community college infrastructure is the region's best workforce readiness asset and is underdeployed", "Michigan's sector-aligned employer-connected model is the correct structural approach for the region", "Anchor city investment concentration is the defining regional equity problem"], "causal_chains": { "midwest_double_displacement": ["Manufacturing displacement 2000-2024: 26.5% job loss while output grew", "Displaced workers absorbed into administrative, clerical, and service roles", "AI automation now reaching those absorptive occupational categories (82-94% risk)", "No regional AI workforce plan in 6 of 8 core states to manage second transition", "Outcome: double displacement without institutional response infrastructure"], "community_college_underdeployment": ["Great Lakes corridor has highest community college density in U.S.", "Deep employer relationships built over manufacturing training decades", "AI curriculum not integrated at scale; faculty lack professional development", "Employer AI training commitments not formalized with community colleges", "Outcome: best regional asset operating at half capacity"], "post_industrial_city_gap": ["Mid-size post-industrial cities: 50,000-200,000 population", "Too dense for rural funding categories; too small for anchor city investment", "Manufacturing displacement concentration above regional average", "Community college present but AI curriculum absent", "Outcome: highest-exposure geography in systematic funding gap"] }, "related_ocf_papers": ["The Skills Gap Is Here: A National Meta-Analysis of Workforce Readiness in the Age of Automation. OCF, April 2026. observablecompute.org"], "state_landscape": { "michigan": { "ai_plan": "active", "institution": "MEDC", "sector_focus": "automotive_advanced_manufacturing" }, "ohio": { "ai_plan": "in_progress", "institution": "state_workforce_board", "sector_focus": "healthcare_logistics" }, "indiana": { "ai_plan": "limited", "institution": "none_identified", "sector_focus": "automotive_steel" }, "illinois": { "ai_plan": "in_progress", "institution": "state_broadband_office", "sector_focus": "finance_logistics" }, "wisconsin": { "ai_plan": "limited", "institution": "none_identified", "sector_focus": "machinery_dairy_tech" }, "minnesota": { "ai_plan": "in_progress", "institution": "state_workforce_board", "sector_focus": "healthcare_tech" }, "iowa": { "ai_plan": "minimal", "institution": "none_identified", "sector_focus": "agriculture_tech" }, "south_dakota": { "ai_plan": "minimal", "institution": "none_identified", "sector_focus": "agriculture_healthcare" } }}

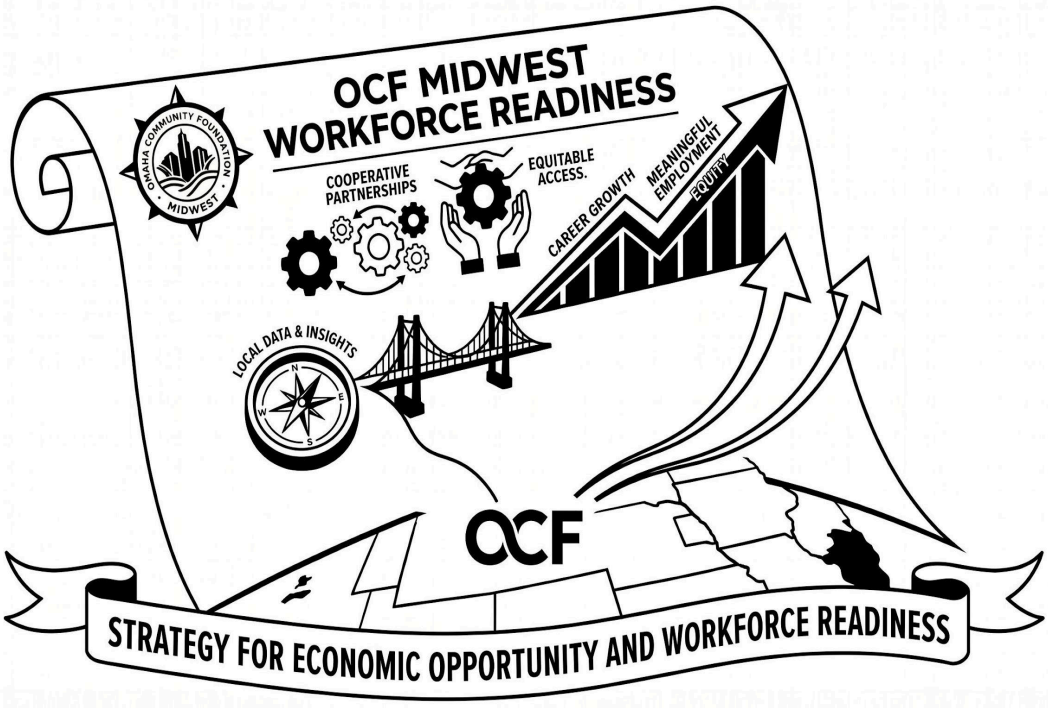

Figure 5. OCF Midwest Workforce Readiness: Strategy for Economic Opportunity and Workforce Readiness. Cooperative partnerships, equitable access, local data, and meaningful employment. OCF / Gemini, 2026.

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