Indy FastTrack

2014

A market-based, results-driven plan to increase private investment in four underutilized regional land assets that were vacated as a result of the severe destabilization of the automotive industry.

Executive Summary

City of Indianapolis
Division of Planning
200 E. Washington Street, Suite 1821
www.indy.gov

This report was created by AECOM in coordination with and for the City of Indianapolis.
This report was prepared by the City of Indianapolis using Federal funds under award 06-87-05775 from the Economic Development Administration, U.S. Department of Commerce. The statements, findings, conclusions, and recommendations are those of the author(s) and do not necessarily reflect the views of the Economic Development Administration or the U.S. Department of Commerce.

Indianapolis
Gregory A. Ballard, Mayor

GUIDON DESIGN

AECOM

The Need For A Deliberate Approach

On the surface, Indy FastTrack ends as it began, with the with the basic question of reuse for 4 automotive sites, confirming the need for a proactive and deliberate strategy to unlock the value of these sites to support future higher-wage employment opportunities. At the same time however, FastTrack has also focused attention on fundamental strategic concerns that now face Marion County and Central Indiana:

- The FastTrack sites represent less than 5 years of industrial land absorption in Marion County based on past trends. So while these sites are strategic, their reuse does not materially resolve the limited supply of larger "shovel-ready" development sites in Marion County to support future job creation. To address this issue, Indianapolis needs an organized strategy to assemble, clean, package, and prepare strategic sites, including brownfields as well as blighted areas appropriate for land use change.

- The FastTrack sites are seen in a larger context defined by concern about the competitive position of Marion County, still recovering from the loss of 18,800 manufacturing jobs since 2003, and singularly dependent on the Pharmaceutical sector, which currently sustains an estimated 15% of county-wide output. These salient trends reinforce the need for strategies to grow and diversify the county economy, linked with regionally-defined clusters in concert with a coordinated business retention and expansion strategy.

- While Central Indiana is now exiting the Great Recession in better shape than its Midwestern peers, the analysis still reinforces a fundamental mismatch between the Region's clear aspirations as a top US metro area, and the reality that Central Indiana has lost ground economically compared to the top 30 metros in gross domestic product and exports per-capita since 2000.

The end of the Great Recession now provides Indianapolis with the opportunity to take advantage of what is a unique moment in time. While many cities remain focused on a return to the status quo, it is increasingly apparent that the US economy has in fact undergone fundamental changes; metropolitan areas that respond and move forward deliberately will be best positioned to compete as the economy recovers.

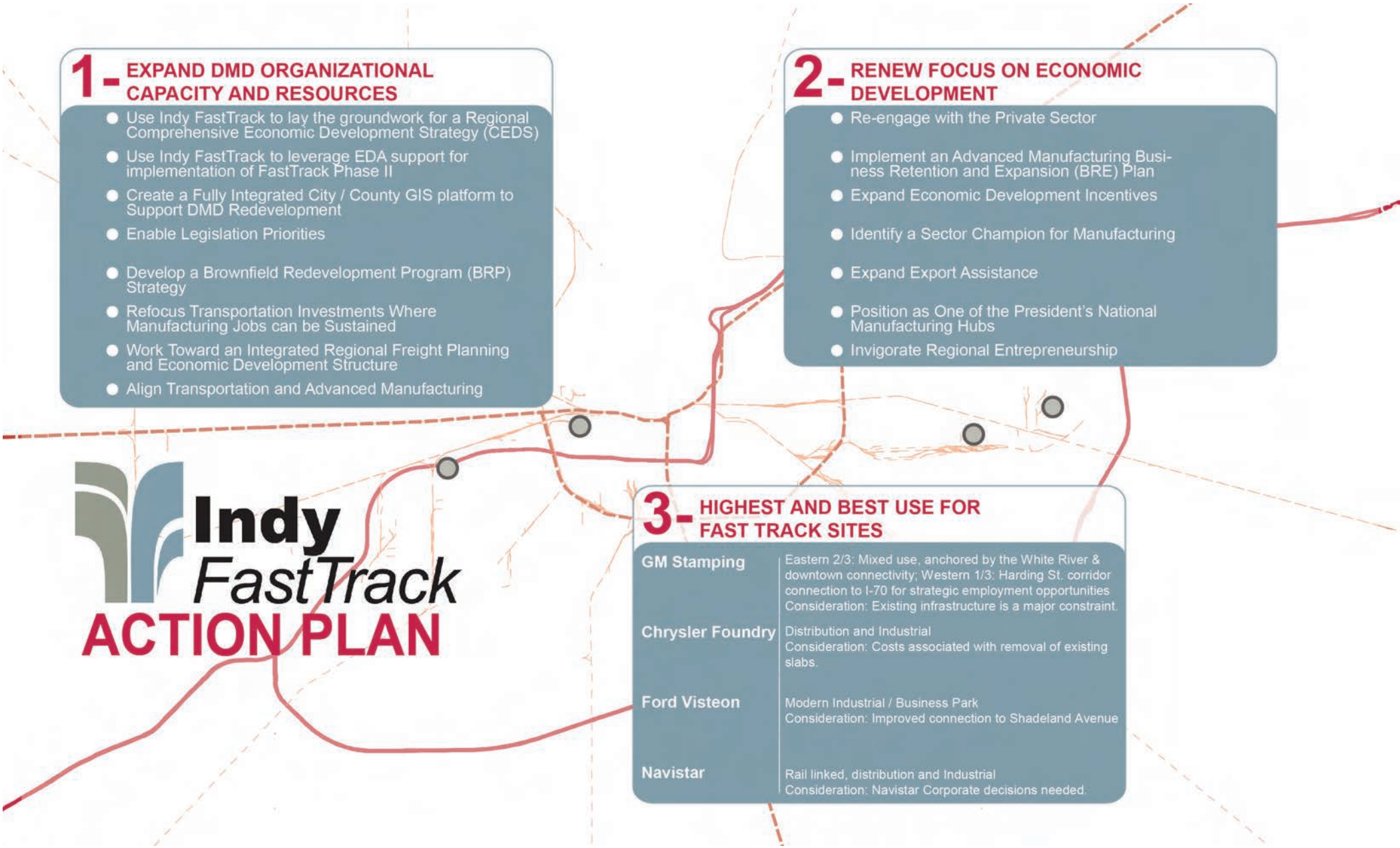
For Indianapolis, FastTrack demonstrates that the path to economic development can only be achieved through deliberate steps:

- Enable DMD to serve as the redevelopment authority for Indianapolis and Marion County, with a strategic focus on redevelopment, including land assembly and brownfield redevelopment, and an organizational structure that is truly interdisciplinary.

- Integrate transportation and land use planning with economic development and infrastructure re-investment priorities

- Emphasize business retention and expansion, anchored by targeted clusters and sector champions, with a clear focus on understanding the needs of local companies.

- Confirm the role of workforce development in supporting a business retention and expansion strategy.



1- EXPAND DMD ORGANIZATIONAL CAPACITY AND RESOURCES

- Use Indy FastTrack to lay the groundwork for a Regional Comprehensive Economic Development Strategy (CEDS)
- Use Indy FastTrack to leverage EDA support for implementation of FastTrack Phase II
- Create a Fully Integrated City / County GIS platform to Support DMD Redevelopment
- Enable Legislation Priorities
- Develop a Brownfield Redevelopment Program (BRP) Strategy
- Refocus Transportation Investments Where Manufacturing Jobs can be Sustained
- Work Toward an Integrated Regional Freight Planning and Economic Development Structure
- Align Transportation and Advanced Manufacturing

2- RENEW FOCUS ON ECONOMIC DEVELOPMENT

- Re-engage with the Private Sector
- Implement an Advanced Manufacturing Business Retention and Expansion (BRE) Plan
- Expand Economic Development Incentives
- Identify a Sector Champion for Manufacturing
- Expand Export Assistance
- Position as One of the President's National Manufacturing Hubs
- Invigorate Regional Entrepreneurship

Indy FastTrack ACTION PLAN

3- HIGHEST AND BEST USE FOR FAST TRACK SITES

GM Stamping	Eastern 2/3: Mixed use, anchored by the White River & downtown connectivity; Western 1/3: Harding St. corridor connection to I-70 for strategic employment opportunities Consideration: Existing infrastructure is a major constraint.
Chrysler Foundry	Distribution and Industrial Consideration: Costs associated with removal of existing slabs.
Ford Visteon	Modern Industrial / Business Park Consideration: Improved connection to Shadeland Avenue
Navistar	Rail linked, distribution and Industrial Consideration: Navistar Corporate decisions needed.

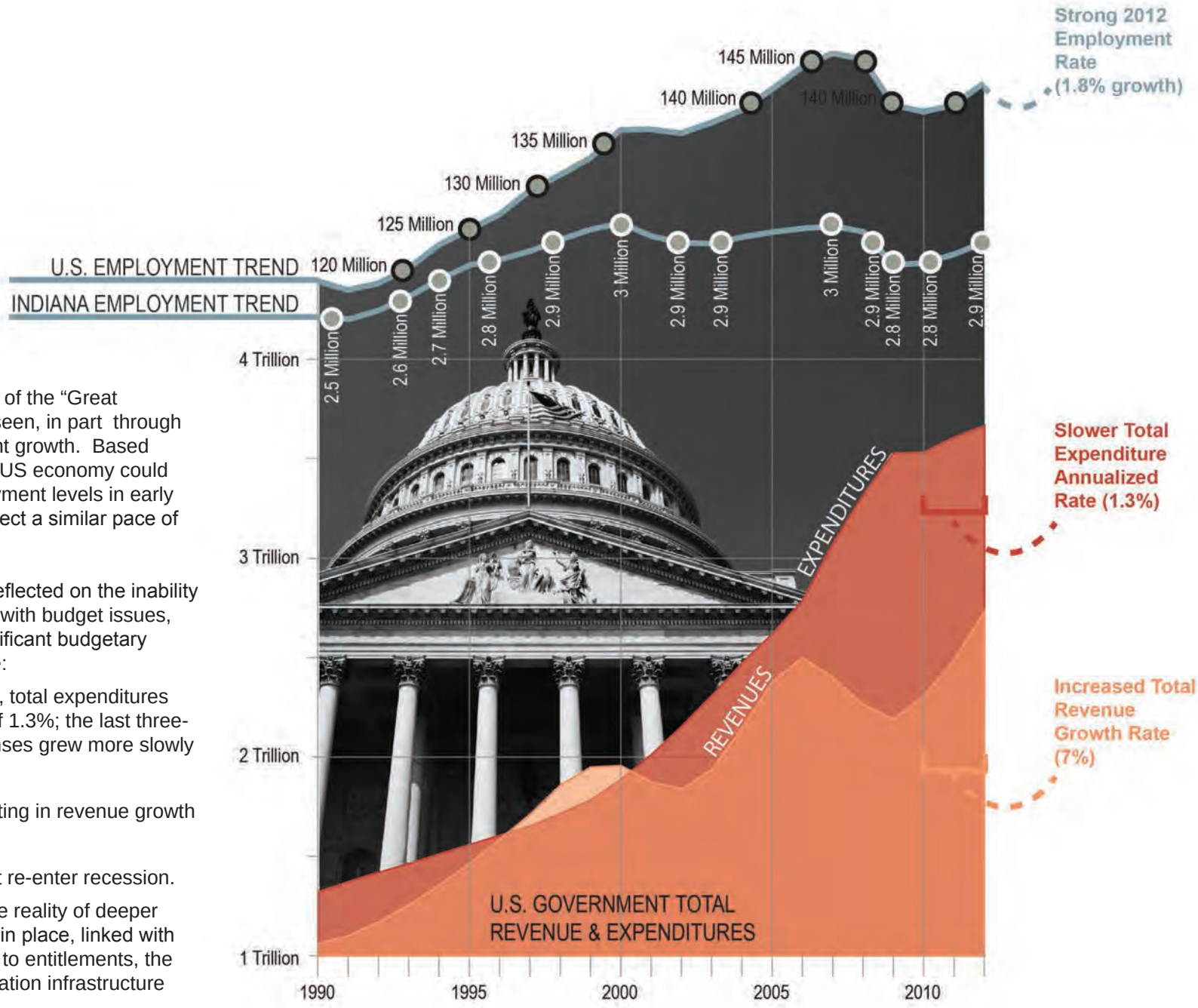
RECOVERY

Across the country, impacts of the “Great Recession” continue to be seen, in part through continually slow employment growth. Based on current growth rates the US economy could reach pre-recession employment levels in early 2014; trends for Indiana reflect a similar pace of recovery.

While media reports have reflected on the inability of the US Congress to deal with budget issues, research suggests that significant budgetary decisions were in fact made:

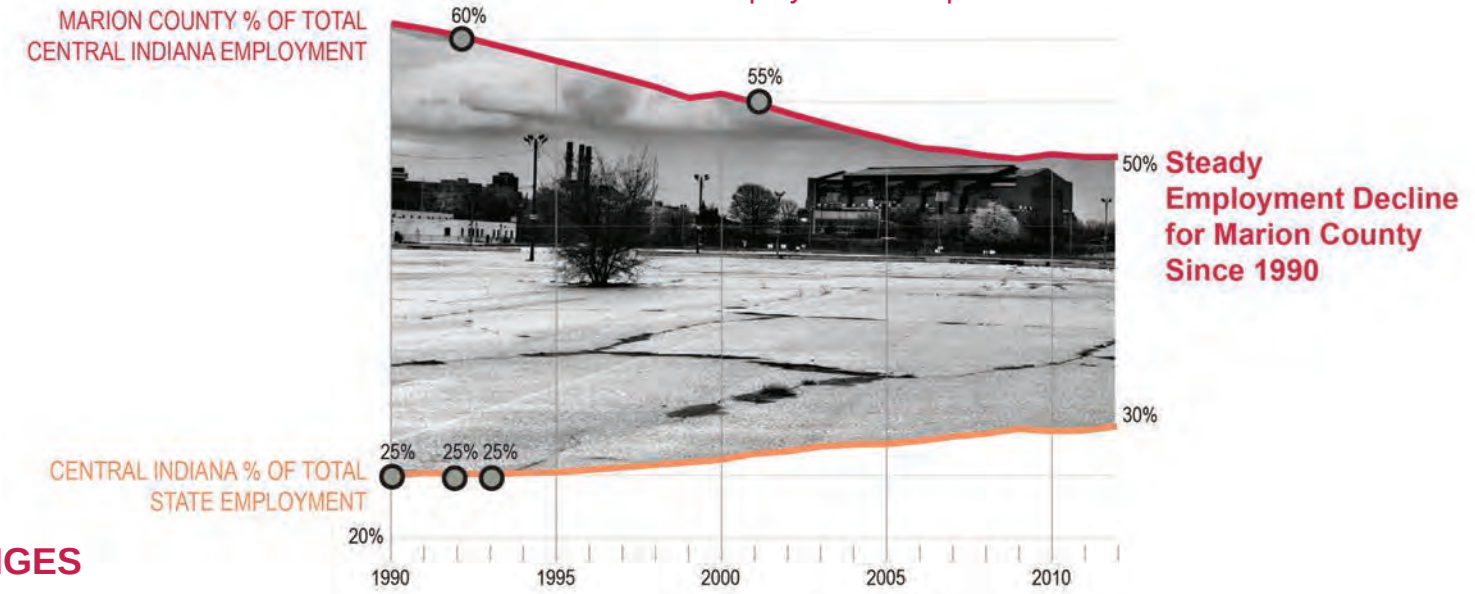
- Between 2010 and 2012, total expenditures grew at an annual rate of 1.3%; the last three-year period where expenses grew more slowly was in the 1950’s.
- Taxes were raised, resulting in revenue growth of about 7% since 2010.
- The US economy did not re-enter recession.

The chart also reinforces the reality of deeper fiscal challenges remaining in place, linked with apparent need for solutions to entitlements, the national debt, and transportation infrastructure funding.



US Government Total Revenue and Expenditures 3-Year Moving Average, Millions of US Dollars with US Employment Trend, Noted Years. Data Sources: The White House, STATS Indiana

Percent Share of Total Employment Comparisons



Percent of Total Employment Comparisons, Central Indiana and State. Data Source: STATS Indiana.

STRUCTURAL CHALLENGES

While the "Great Recession" has impacted Central Indiana, it is clear that Marion County has endured deeper structural changes. From an employment standpoint, Marion County has seen its share of Central Indiana employment decrease steadily since 1990, falling from about 60% to about 50%. At the same time, Central Indiana has seen its share of total statewide employment increase over the same period.

Clearly, Central Indiana has undergone structural change, best expressed through evaluation of per capita gross domestic product data. Central Indiana has tended to play "above its weight" in economic terms, as reflected in a ranking of 23rd in per capita GDP (2012). Of concern is the reality that Central Indiana has not kept pace economically in per capita GDP terms with the top 30 metropolitan areas since 2001, falling from 17th to 23rd since 2001. Put another way, per capita GDP for the top 30 MSA's increased at an annualized rate of 1% between 2001 and 2012; for greater Indianapolis, the comparable annual growth rate was 0.3%, reinforcing the notion of falling behind economically.

Per Capita GDP Comparisons and MSA Per Capita GDP Ranking

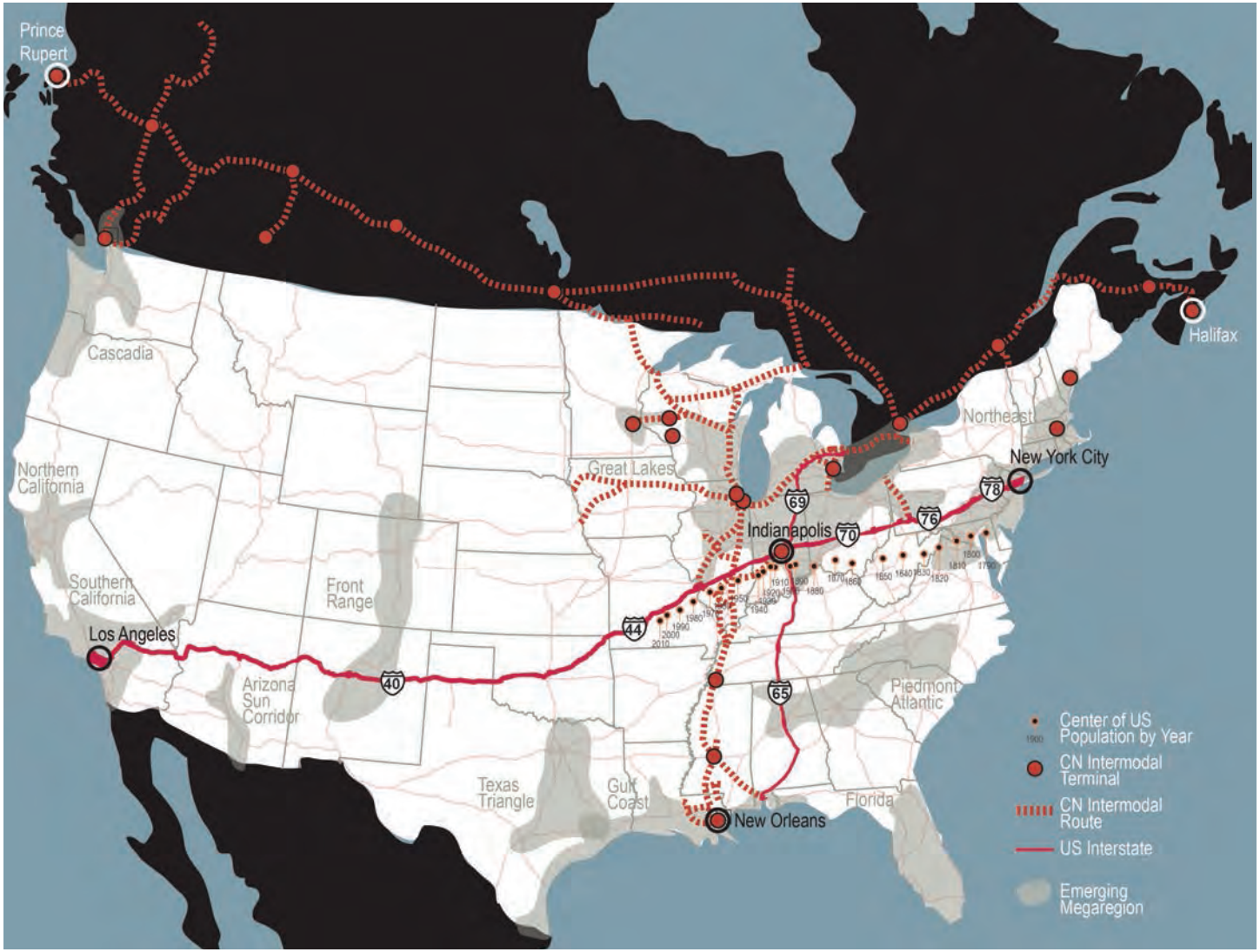
Per Capita GDP Comparisons (2001-2012) with Indianapolis MSA Per Capita GDP Ranking. Data Source: BEA

STRATEGIC POSITION

The strategic position of Central Indiana and Marion County can be viewed in four ways:

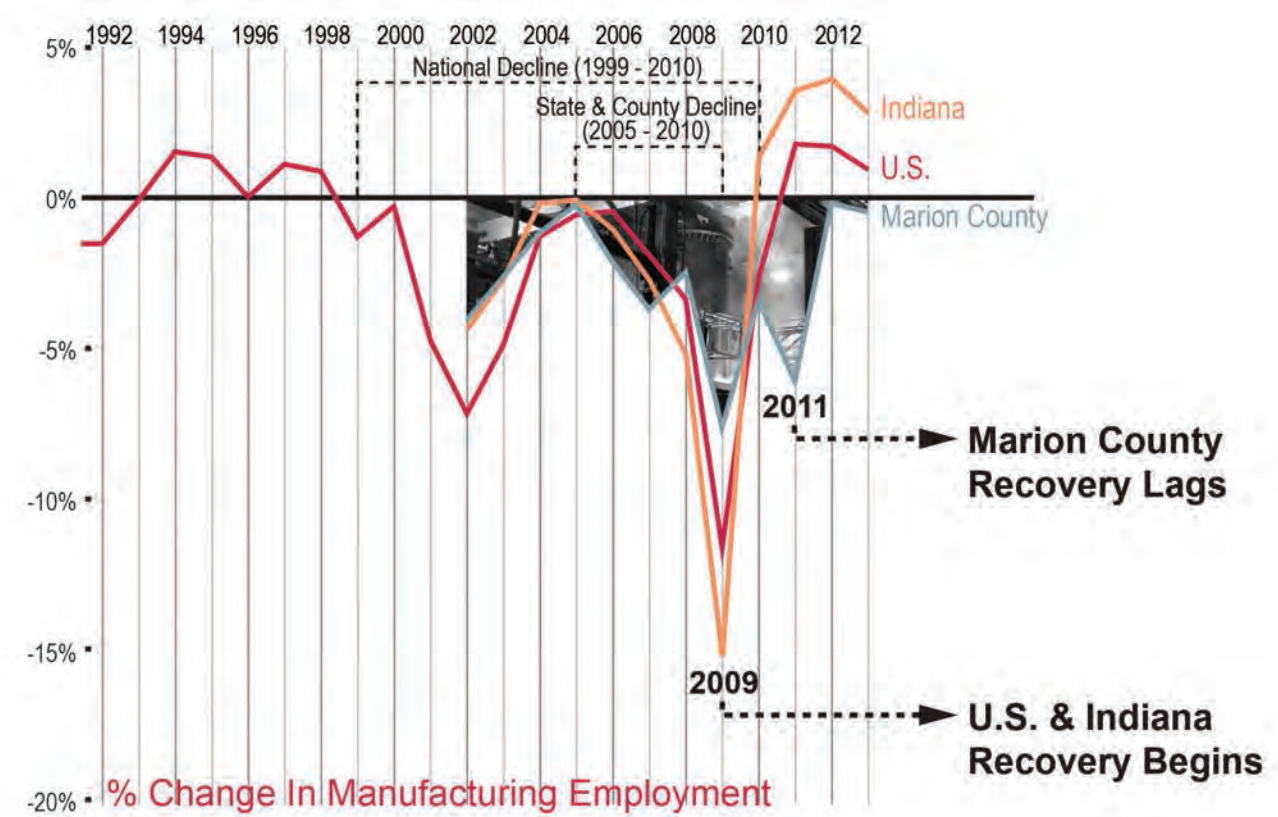
- Within the defined Midwestern "Megaregion" (as defined by America 2050.org).
- I-70 is the shortest and least-tolled interstate route between LA and NY, two of the largest deep water ports in the US, which attract significant expedited truck traffic.
- The I-65 / I-69 corridor continues to be the primary corridor for the auto industry.
- The Indiana Railroad intermodal partnership with Canadian National (CN) to move containers directly into Marion County. CN system intermodal volumes have grown from 1.5 million to 1.7 million containers between 2010 to 2012, (9% annual growth).

For Central Indiana, understanding connectivity to freight corridors, and evaluating opportunities to add value to freight that is currently just passing through are important. That the current center of US population is south and west of Indianapolis (not north toward Chicago) reinforces the clear need to better understand supply chain connections, and work more closely with manufacturers and their third party logistics providers (3PL's), many of whom are increasingly being asked to add value to what they are distributing.



US Mega-regions, US Interstates, and Canadian National Intermodal Routes and Terminals. Data Sources: Canadian National, America2050.org, US Census

Top Metropolitan areas, Per Capita Exports (USD) 2005 - 2012. Data Source: BEA



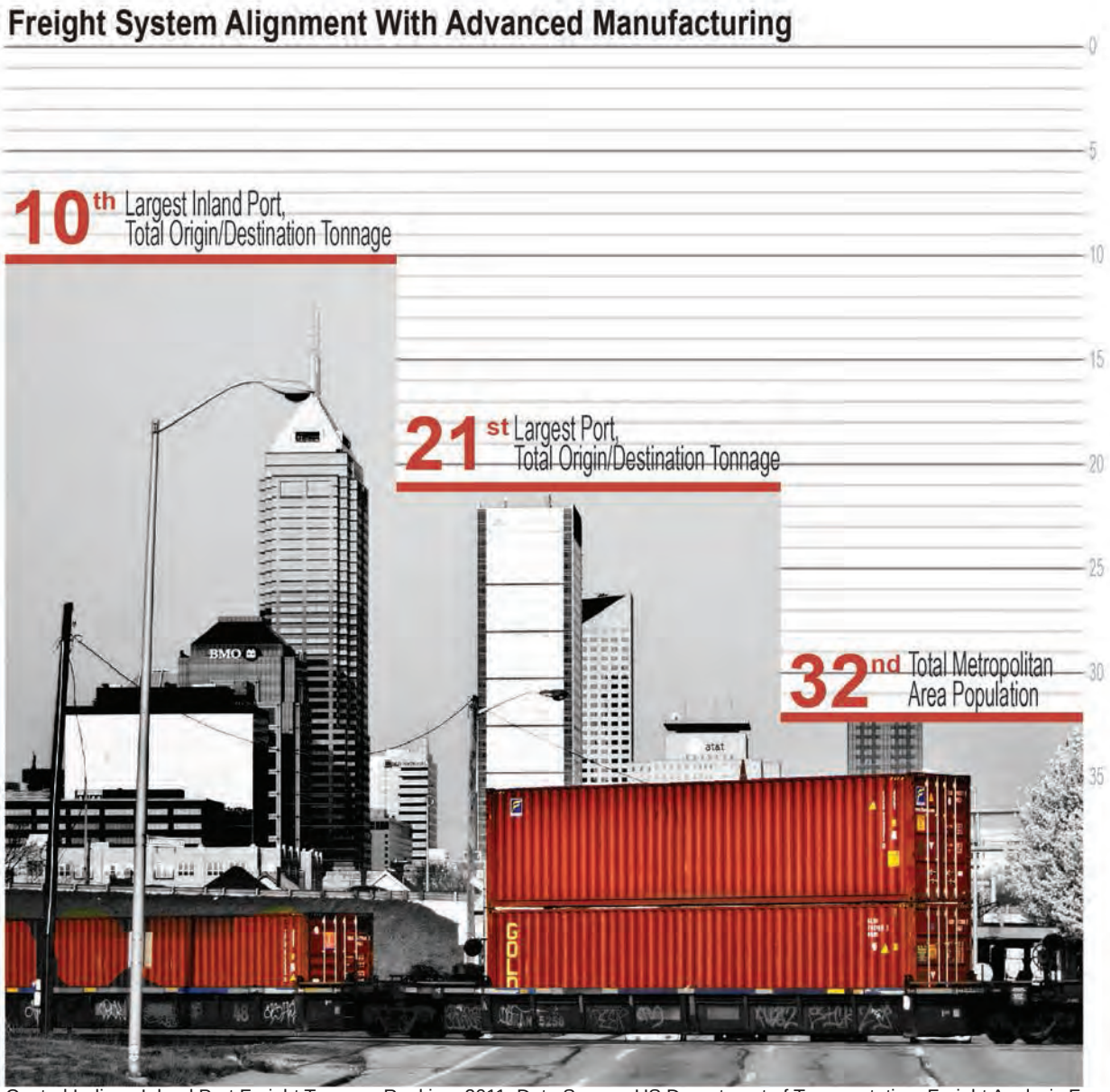
Percent Change, US Manufacturing Employment with Percent Change, Manufacturing Employment in Marion County & Indiana. Data Source: STATS Indiana, Bureau of Labor Statistics

ADVANCED MANUFACTURING RECOVERY

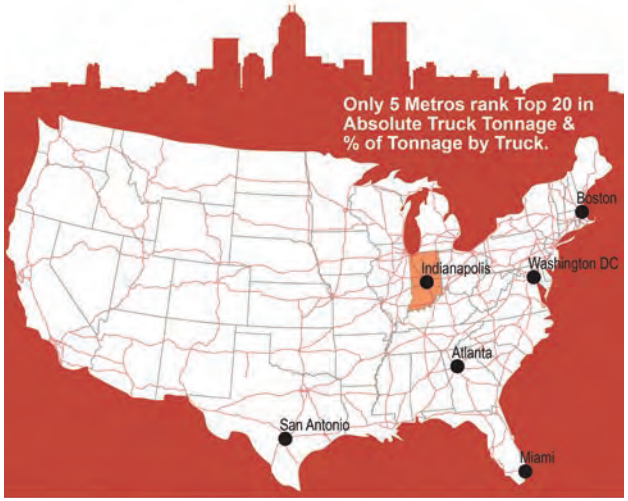
Well before the Great Recession began, both US and Midwestern manufacturing activity had already been impacted. US manufacturing began to experience steady decreases in employment beginning in 1999, which continued through 2010. A not-dissimilar pattern unfolded across Indiana and Marion County, with steady declines in manufacturing. For 2009, the "peak" year of the recession, Indiana was particularly impacted, with a 15% decrease in employment, compared to 12% nationally and about 7% in Marion County.

While manufacturing employment has begun to recover nationally (linked in part with ideas like "reshoring"), the trajectory of improvement is from a 40-year low in employment. As such, deliberate strategies are needed to accelerate the recovery. Federal policy has been supportive, with a clear focus on advanced manufacturing, emphasizing industry sectors that can sustain greater research and development spending and emphasize workers with experience in Science, Technology, Engineering, and Math (STEM) fields.

Nationally, responses have focused on strategies to expand export opportunities for local companies, and better align supply chains with industrial land use and transportation infrastructure. On the economic development side, strategies have focused on the need for focused business retention and expansion, anchored by a workforce development system which is a full partner in the effort.



Central Indiana Inland Port Freight Tonnage Ranking, 2011. Data Source: US Department of Transportation, Freight Analysis Framework



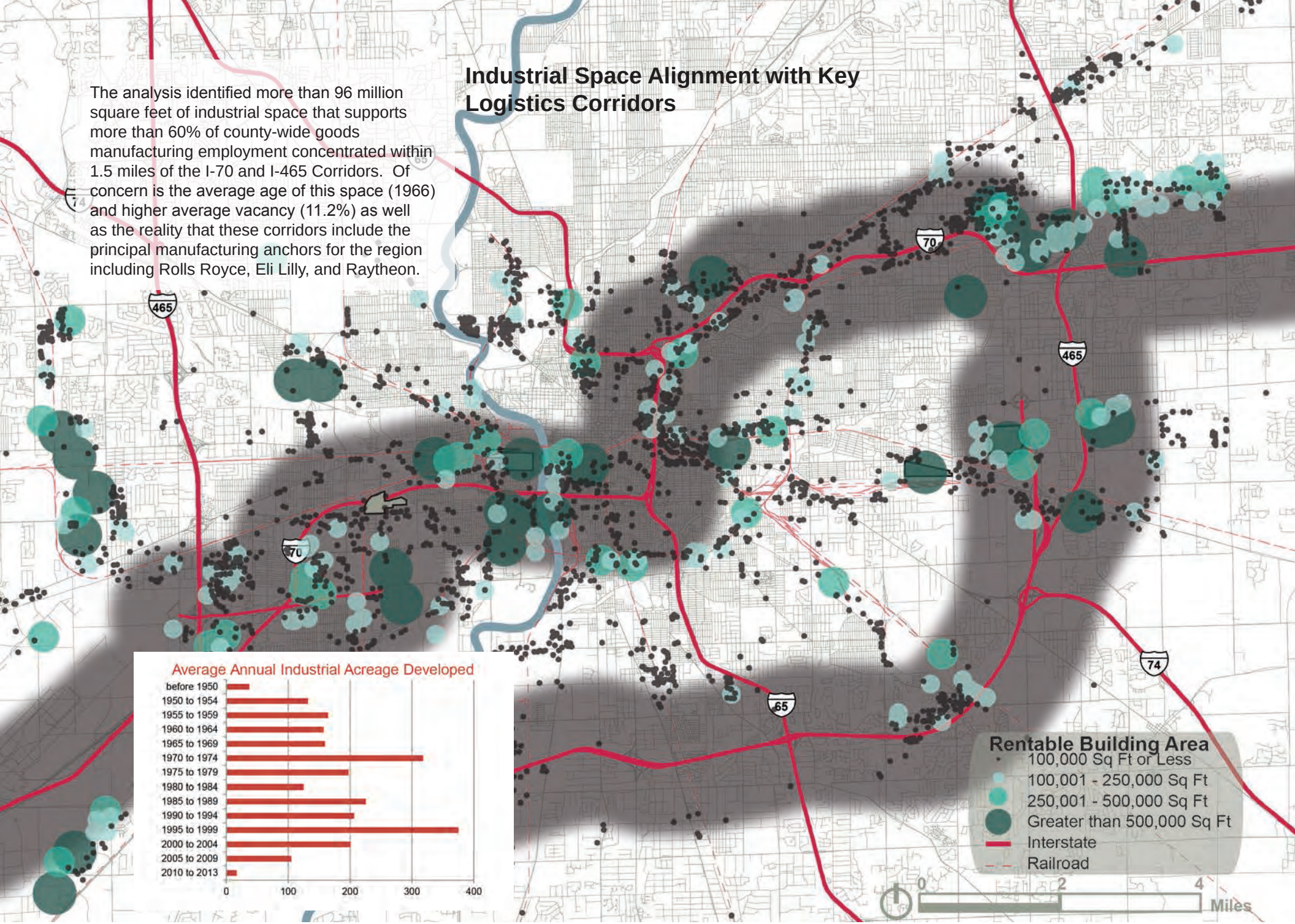
In 2011, Central Indiana was ranked as the 10th largest inland port in terms of origin-destination tonnage, with the financial resources of the 32nd largest metro area. With clear expectations for further growth in truck-borne freight volumes, there is concern that Indianapolis, Marion County and Central Indiana are not organized to effectively manage an array of resulting congestion and air quality issues and implement solutions that require cooperation across political boundaries.

This situation is not unique to Indianapolis. In most larger cities, there is a clear distinction between transportation planning, which is managed by the regional MPO and state DOT's, and economic development, which is managed through other local organizations.

Ultimately, AECOM experience suggests that if cities and regions cannot benefit from freight movement, they must instead focus on ways to mitigate impacts. In simple terms, if value cannot be added locally, then measures need to be taken to move goods more quickly through the region.

Industrial Space Alignment with Key Logistics Corridors

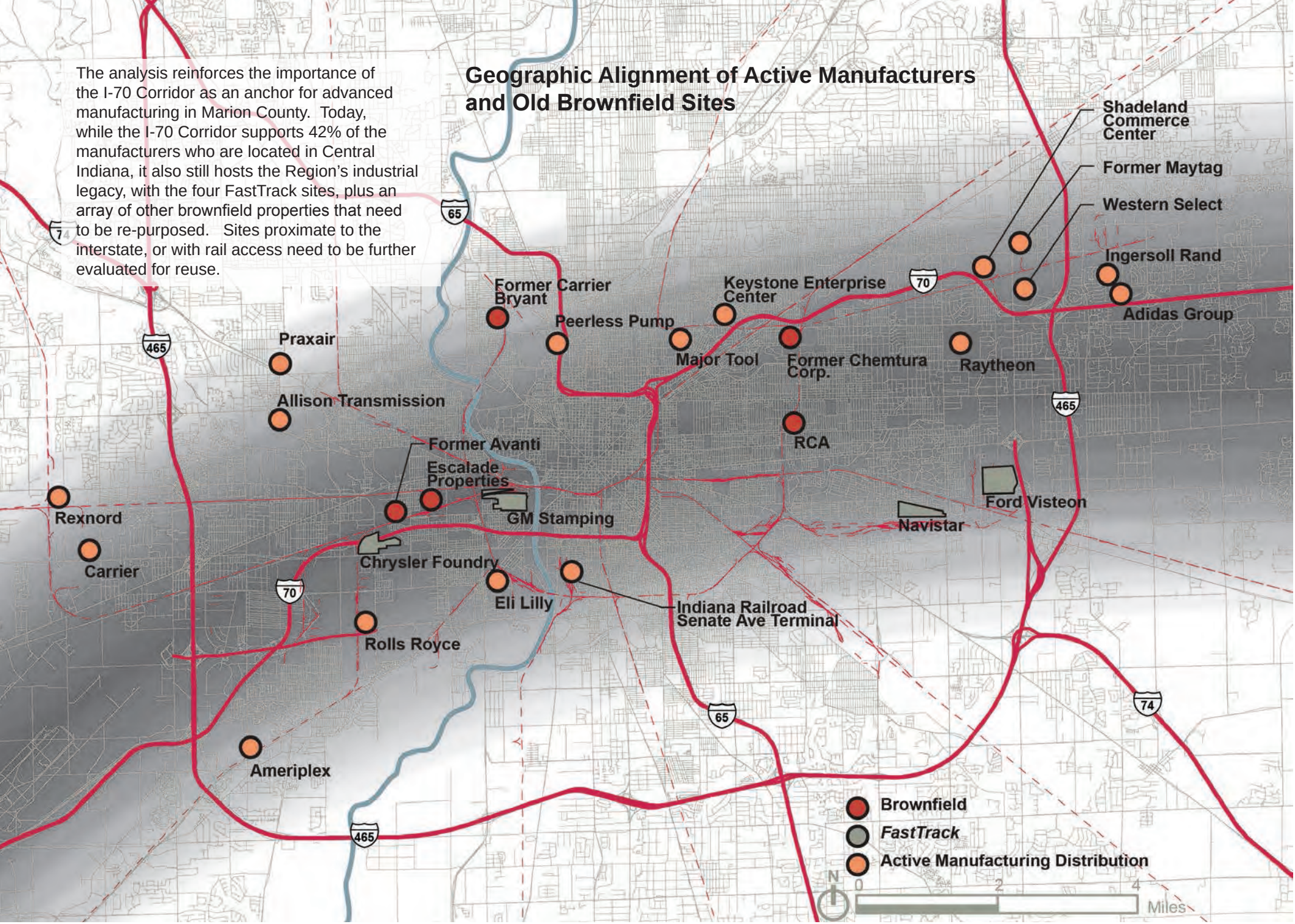
The analysis identified more than 96 million square feet of industrial space that supports more than 60% of county-wide goods manufacturing employment concentrated within 1.5 miles of the I-70 and I-465 Corridors. Of concern is the average age of this space (1966) and higher average vacancy (11.2%) as well as the reality that these corridors include the principal manufacturing anchors for the region including Rolls Royce, Eli Lilly, and Raytheon.



Data Source: CoStar

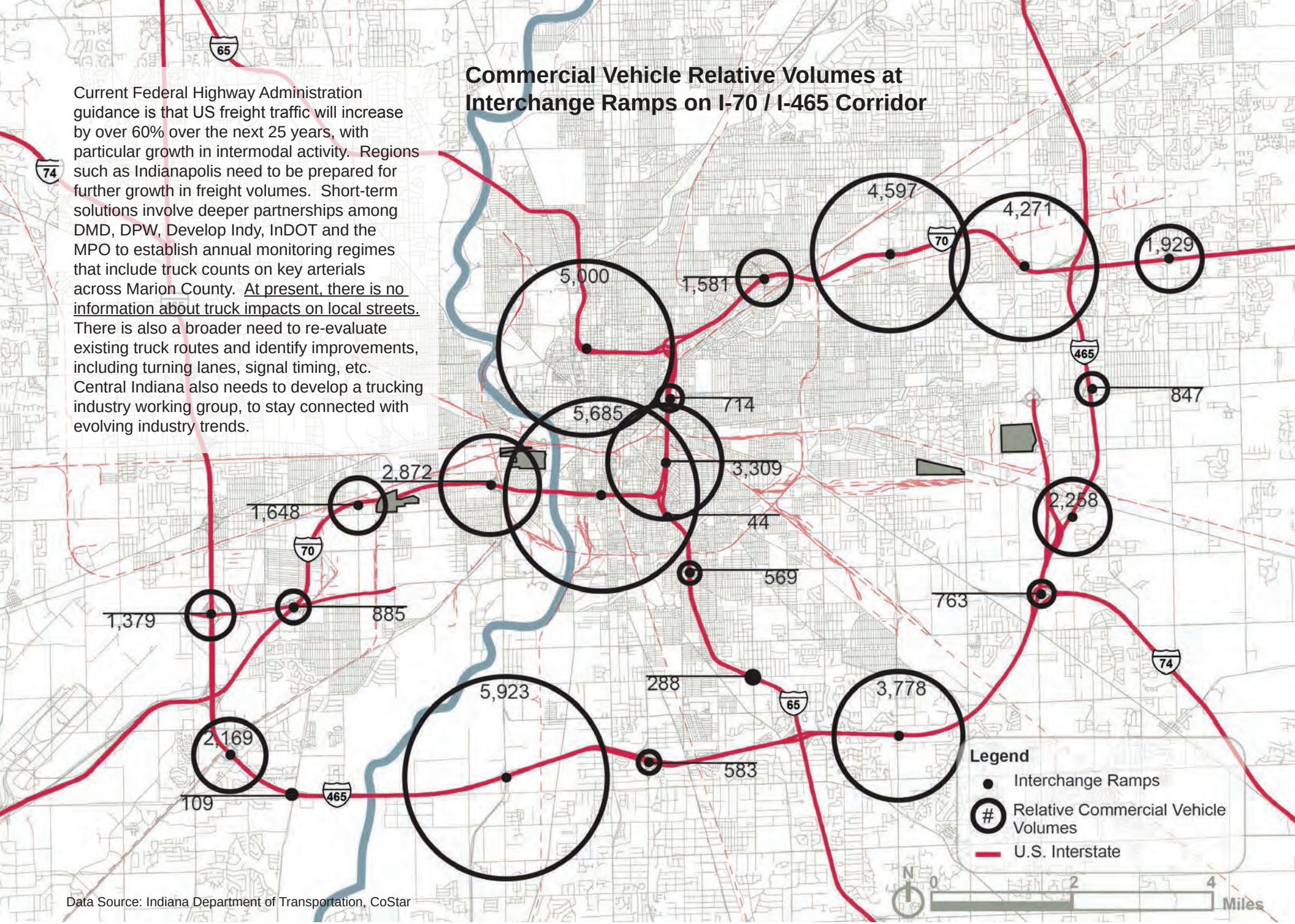
The analysis reinforces the importance of the I-70 Corridor as an anchor for advanced manufacturing in Marion County. Today, while the I-70 Corridor supports 42% of the manufacturers who are located in Central Indiana, it also still hosts the Region's industrial legacy, with the four FastTrack sites, plus an array of other brownfield properties that need to be re-purposed. Sites proximate to the interstate, or with rail access need to be further evaluated for reuse.

Geographic Alignment of Active Manufacturers and Old Brownfield Sites



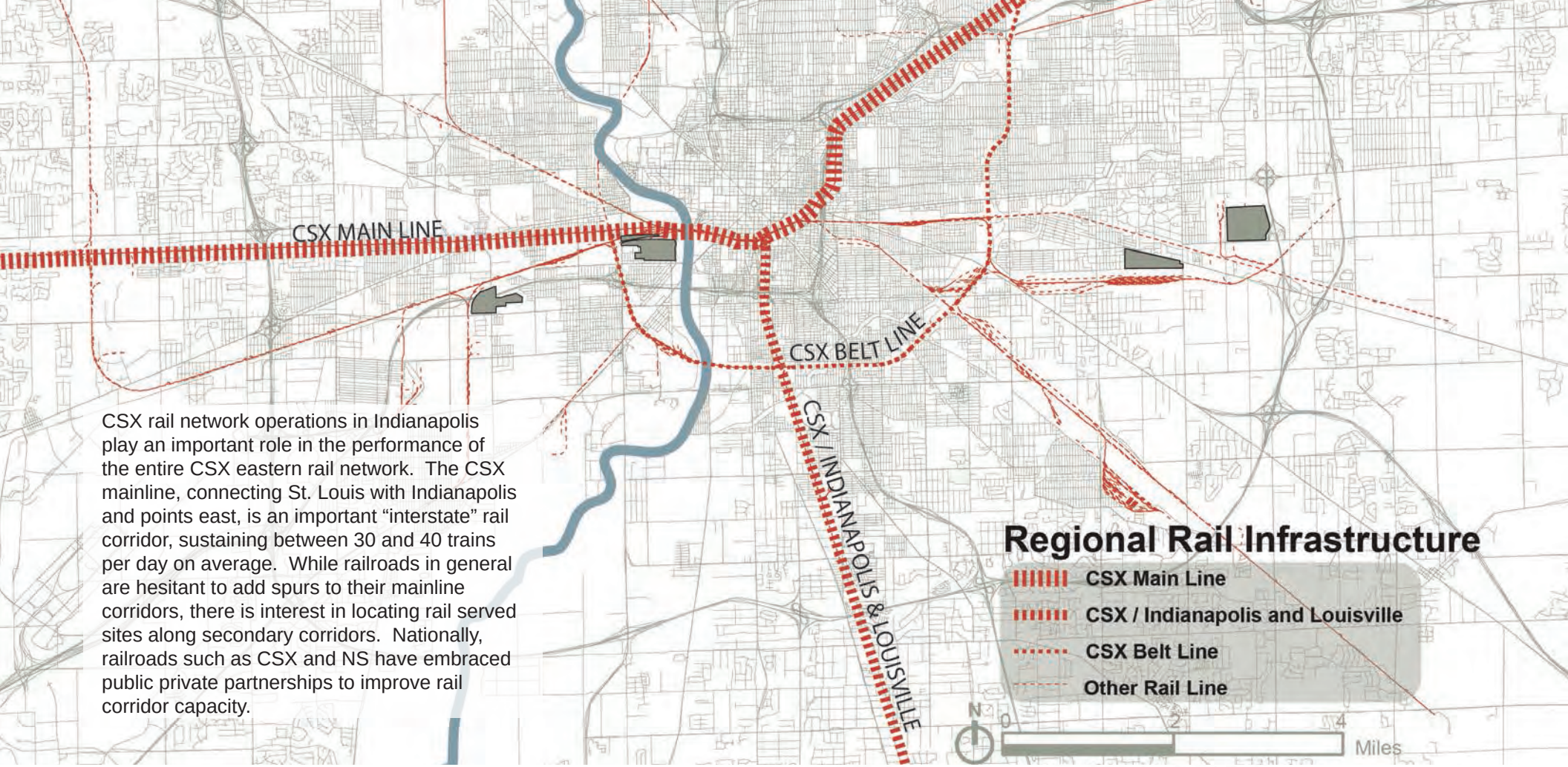
Commercial Vehicle Relative Volumes at Interchange Ramps on I-70 / I-465 Corridor

Current Federal Highway Administration guidance is that US freight traffic will increase by over 60% over the next 25 years, with particular growth in intermodal activity. Regions such as Indianapolis need to be prepared for further growth in freight volumes. Short-term solutions involve deeper partnerships among DMD, DPW, Develop Indy, InDOT and the MPO to establish annual monitoring regimes that include truck counts on key arterials across Marion County. At present, there is no information about truck impacts on local streets. There is also a broader need to re-evaluate existing truck routes and identify improvements, including turning lanes, signal timing, etc. Central Indiana also needs to develop a trucking industry working group, to stay connected with evolving industry trends.

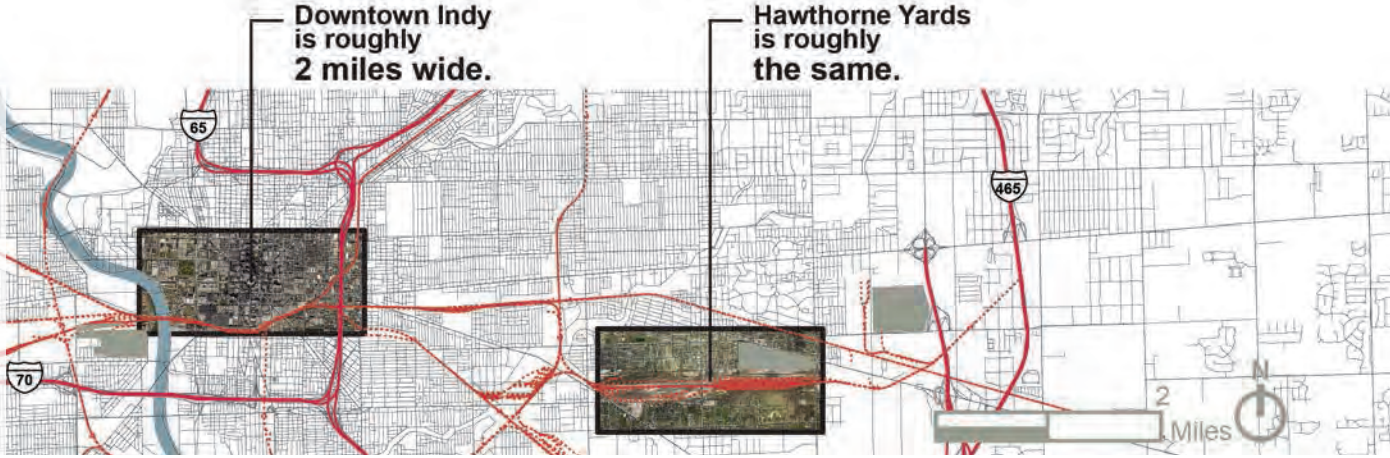


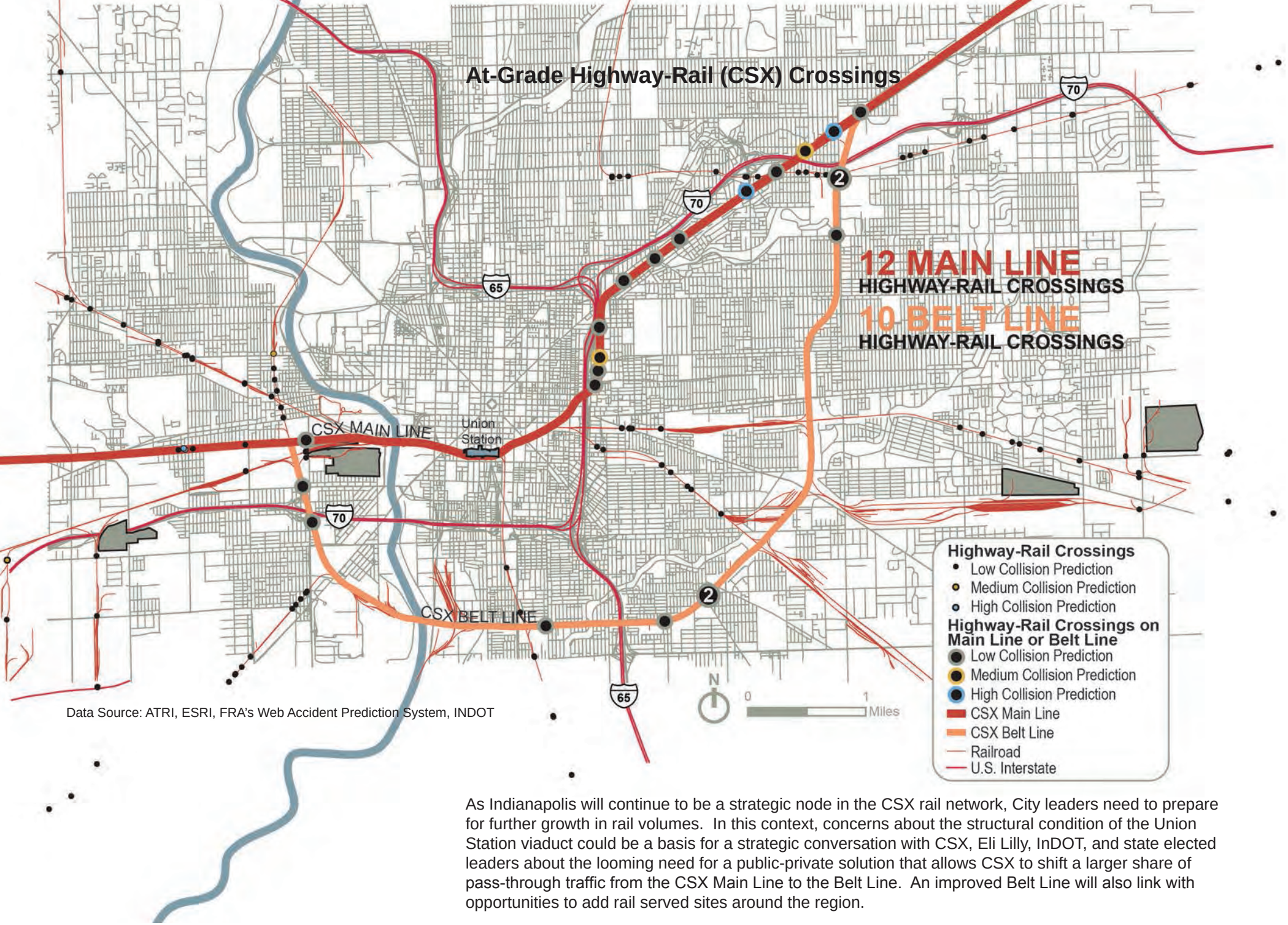
Data Source: Indiana Department of Transportation, CoStar

CSX rail network operations in Indianapolis play an important role in the performance of the entire CSX eastern rail network. The CSX mainline, connecting St. Louis with Indianapolis and points east, is an important “interstate” rail corridor, sustaining between 30 and 40 trains per day on average. While railroads in general are hesitant to add spurs to their mainline corridors, there is interest in locating rail served sites along secondary corridors. Nationally, railroads such as CSX and NS have embraced public private partnerships to improve rail corridor capacity.



Within the broader conversation about freight infrastructure, the future status of the CSX Hawthorne Yard needs to be considered. While this yard currently serves a modest role in the Region (secondary switching), the broader yard area is extensive, covering about 2 miles in length or more than 400 acres in rough terms. Opportunities link with the future status of the Navistar site, as well as a host of other properties in this area that could be more deliberately connected with rail infrastructure.





Data Source: ATRI, ESRI, FRA's Web Accident Prediction System, INDOT

As Indianapolis will continue to be a strategic node in the CSX rail network, City leaders need to prepare for further growth in rail volumes. In this context, concerns about the structural condition of the Union Station viaduct could be a basis for a strategic conversation with CSX, Eli Lilly, InDOT, and state elected leaders about the looming need for a public-private solution that allows CSX to shift a larger share of pass-through traffic from the CSX Main Line to the Belt Line. An improved Belt Line will also link with opportunities to add rail served sites around the region.

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Introduction

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Indianapolis
Gregory A. Ballard, Mayor

GUIDON DESIGN

AECOM

Introduction 01

PROJECT CONTEXT

Beginning in October 1, 2012, the City of Indianapolis, Department of Metropolitan Development (DMD) received a grant from the US Department of Commerce, Economic Development Administration (EDA) to support the creation of a market-based, results-driven revitalization plan for the reuse of four closed automotive assembly sites in the City of Indianapolis:

Chrysler Foundry Site
Prior to 2005, the Chrysler site supported a foundry and casting facility. In September 2005, the plant ceased all operations, and in November 2006, the structures were demolished, leaving the foundation slabs in place. The roughly 46-acre site now includes three vacant parcels, generally located north of the intersection of Tibbs Ave. and Morris Street, adjacent to I-70. The site enjoys visibility and access from I-70 and is rail served. Total employment was in excess of 800 jobs.

Navistar Engine Plant & Foundry
The Navistar site currently houses an idled engine plant and an operating foundry that produces engine blocks. While the engine plant closed in July 2010, the foundry continues to operate, but below capacity. At peak operations, plant employment was in excess of 3,600 jobs. The foundry is sustaining roughly 200 jobs. Located on the near east side of Indianapolis, this site covers approximately 91 acres and has approximately 1.5 million square feet of improved space. The site is located adjacent to the CSX Hawthorne Yard, with direct access to I-465 via Brookville Road. The site is located in the Irvington neighborhood.

Ford/Visteon Steering Plant
This site housed an assembly plant that produced power steering components. The plant closed in May 2012, leaving behind a large 150-acre site with about 1.7 million square feet of improved space. Located on the far-east side of Indianapolis, the site has good access to I-465 via Shadeland Avenue, a limited access highway, and is rail served. Former employment was in excess of 1,100 jobs.

GM Stamping Plant
The 100+ acre former GM Stamping Plant site supported a roughly 1.68 million square-foot building that, until June 2010, produced parts for GM vehicles. The site is situated along the White River, directly adjacent to downtown Indianapolis, with adequate access to I-70 via Harding Street. The site's northern and western edges are defined by considerable rail infrastructure, including a CSX mainline and the Belt Line. Before closure, the plant employed in excess of 750 people. The owner of this property, the RACER Trust, has announced plans to demolish the improvements, to make way for eventual redevelopment of the site.

In total, closure of the four FastTrack sites resulted in a loss of about 6,500 manufacturing jobs, and placed about 389 acres of industrial land and 4.96 million square feet of manufacturing space in economic limbo.

Initially, Indy FastTrack focused on three goals:

- Compile existing information regarding the four sites, including ownership, infrastructure conditions, site amenities, and environmental conditions.
- Inform the City and its partnering organizations of the capacity of these sites to spur private investment and to create higher-skilled, higher wage jobs.
- Define a strategy for how to proceed at each site, including suitable reuse options.

FastTrack also identified broader economic concerns about the health of Greater Indianapolis, and Marion County in particular. Bureau of Economic Analysis (BEA) statistics showed that Marion County had lost over 37,000 jobs between 2001 and 2010. Over the same period, unemployment rates had increased from about 3.7% to almost 10%. Specific losses in manufacturing were of particular concern to Marion County.

As the project unfolded after February of 2013, the analysis revealed that the four FastTrack sites were merely the "tip of the iceberg" when related to the broader trend of manufacturing decline that has unfolded uniquely across Marion County over the last 20 to 30 years, leaving a larger number of vacant brownfield sites in its wake. Our effort focuses in large measure on the broader ripple effects associated with this manufacturing decline, with a clear goal being the identification of strategies to recover and grow advanced manufacturing across Marion County in the future.

Supplier to or Subsidiary of:	Site			
	Chrysler Foundry	GM Stamping Plant	Navistar Engine Plant & Foundry	Ford /Visteon Steering Plant
Automotive Components Holdings, LLC				88
Daimler Chrysler	881			
Ford Motor Company				630
General Motors Stamping Plant		785		
International Truck & Engine Corporation			417	
Navistar			2,342	
Navistar (dba-Indpls Casting Corporation)			415	
Navistar (including Foundry)			512	
Visteon				231
Visteon Indianapolis				200
Total	881	785	3,686	1,149

Source: Indiana Department of Workforce Development, Dislocated Workers Unit

Key Attributes	Former Automotive Manufacturing Sites			
	Chrysler Foundry	GM Stamping Plant	Navistar Engine Plant & Foundry	Ford /Visteon Plant
No. of Parcels	5	3	5	1
Site (acres)	47	100.15	91.16	152.07
Structure/s (square feet)	Slab on grade	1.68M	1.5M	1.78M
Employees (at peak use)	3,500	5,600	4,450	3,000
Rail Access	Y	Y	Y	Y
Interstate System	Y	Y	Y	Y
Demolition Needed	Y (foundation slabs)	Y	Y	Y
Assessed Value, Land (2009/2012)	$2.2M ▼ $1.6M	$4.2M ▼ $1.6M	$4.5M ▼ $3.1M	$7.5M ▼ $2.5M
Assessed Value, Improvements (2009/2012)	$799K ▼ $375K	$13.8M ▲ $22.9M	$9.7M ▼ $7.8M	$14.4M ▼ $4.4M
Total Assessed Value (2009/2012)	$3M ▼ $2M	$18M ▲ $24.5M	$14.2M ▼ $10.9M	$21.9M ▼ $6.9M
Semi-Annual, Real Property Tax (2009/2012)	$51K ▼ $29K	$255K ▼ $140K	$198K ▲ $218K	$328K ▼ $273K

Source: City of Indianapolis, Department of Metropolitan Development

PROJECT APPROACH

AECOM Technical Services, Inc. (AECOM) was engaged by the City of Indianapolis, Department of Metropolitan Development (DMD) to complete the Indy FastTrack effort, with the support of Guidon Design. Key approach elements included:

Chapter 02 - Stakeholder Engagement

The effort was anchored by an extensive 1-on-1 stakeholder interview process, to understand economic conditions and the pace of recovery in Marion County, and to frame the relative importance of FastTrack site reuse given other priorities in Marion County and the City of Indianapolis. Interview targets included public, private, and institutional leaders across Marion County; specific emphasis was placed on contacts with the freight sector, including trucking companies and railroads. Interviews with local real estate brokers, developers, and site selectors were used to place each site in context; more than 100 interviews were completed during the 12-month study.

Chapter 03 - FastTrack Highest and Best Use

Working closely with City Staff, evaluations of each FastTrack site, covering locations, site conditions, infrastructure, zoning status, environmental conditions, and related factors were conducted. Suitable highest and best use options for each site were then defined, building from a review of existing site information as well as a summary of broader national trends regarding reuse of former automotive plants. The analysis then identifies reuse implications for each site.

Chapter 04 - Regional Economic Conditions

Broader economic metrics for Indianapolis were evaluated, to place the FastTrack sites in context. Trend data for Marion County, the Central Indiana Region, the state of Indiana, and US as a whole was collected. Economic indicators included employment and income, regional population, labor force, workforce, manufacturing, gross domestic product, exports, and cost of living. Perspective regarding economic performance of other MSA's (geographic and aspirational) were included for additional context. These indicators were analyzed over a set of three basic time lines: pre-recession growth, recessionary decline, and post-recession recovery. Future opportunities in manufacturing were also identified.

Chapter 05 – Global Trends / Local Impacts

Over the last 20 years, and since 2008 in particular, supply chains and distribution networks have evolved tremendously, responding to both market forces and regulatory influences, which include:

- Impact of the Panama Canal Expansion
- Freight rail corridor improvements and local impacts
- Growth of intermodal freight movement

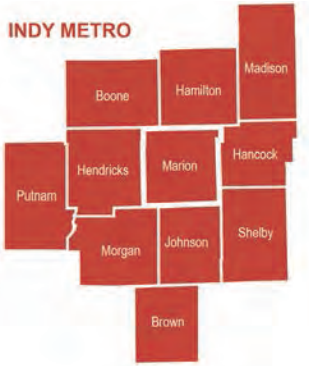
With Indianapolis serving as a nationally significant freight transportation gateway, our effort acknowledges the broad array of global shifts in freight movement and infrastructure that are now occurring, and what local impacts are likely to be. An array of shifts, linked with technology, shifting markets, and changing regulations were studied. Key regional, national, and global trends that will influence the study have been summarized, clarifying critical factors to chart over the planning horizon for which Indianapolis should prepare.

Action Plan

Building from the above work efforts, conclusions are framed regarding the FastTrack sites, along with an action plan to guide broader economic development policy recommendations for DMD and related organizations to implement.

PROJECT STUDY AREA

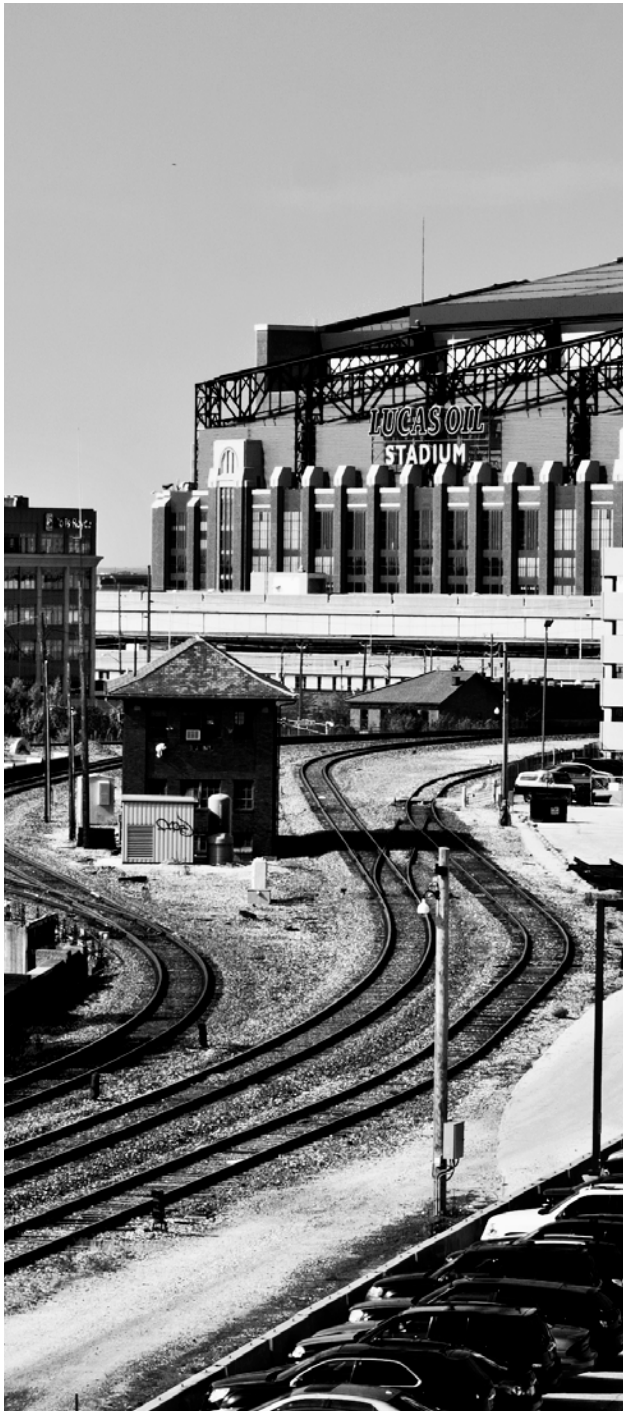
Indy FastTrack focused on several geographies:



1. The Indianapolis Metropolitan Area; referred to as Central Indiana.

2. Marion County, which includes the City of Indianapolis and the excluded cities of Beech Grove, Lawrence, and Southport, and the excluded Town of Speedway.

3. The City of Indianapolis.



ACKNOWLEDGMENTS

Completion of this project would not have been possible without the considerable support and commitment from our stakeholders. The effort required interviews with over 100 people representing public and private interests across Indianapolis, ranging from Allison Transmission,. CICP, and Central Indiana Community Foundation (CICF), to Duke Reality, Employ Indy, IndyGo, Major Tool, Norfolk Southern Railroad, the RACER Trust, the Regional Council of Elected Officials, and White River State Park as examples. On behalf of the City of Indianapolis, Department of Metropolitan Development, thank you for your commitment to improving the county's economic performance, at what we believe to be a critical time.

Equally critical contributions have been made by the following individuals and organizations, which were instrumental in supporting completion of this effort:

- DMD Staff, including Brooke Thomas, David DiMarzio, Mike Peoni, and Adam Thies
- Todd Cook, Develop Indy
- Indiana Business Research Center, IU Kelly School of Business
- Members of the Project Steering Committee, including leadership from Develop Indy
- Members of the Project Resource Committee, including the Indy Partnership, Ivy Tech, and Employ Indy
- Members of the Mayor's Manufacturing Reuse Taskforce, including the Local Initiatives Support Corporation (LISC)
- The City of Indianapolis, Department of Public Works, Citizens Energy and IPL
- Wilhelm Construction, for providing historic images of the Navistar property
- KERAMIDA, for assisting in early efforts to compile existing data regarding the project

Lastly, the following AECOM staff were directly involved in completing this engagement:

- Chris Brewer, project manager
- William Anderson, planning
- Jeff Bryan, environment
- Leo Thorbecke, environment
- Kimberly Gester, economics
- Anna Hochhalter, planning
- Lee Hutchins, transportation
- Paul Krieger, industrial real estate
- Jamie Kennedy, planning
- Jenna Lee, planning
- Kirsten Mawhinney, transportation
- Kelly Rytel, planning

Guidon Design staff included:

- Luke Leising, AIA, President
- Kyle Cyr, PE

DATA SOURCES

Federal Sources

- Congressional Budget Office (CBO)
- Federal Aviation Administration (FAA)
- U.S. Census Bureau
- U.S. Council for Automotive Research
- U.S. Department of Agriculture (USDA)
- U.S. Department of Commerce, Bureau of Economic Analysis (BEA)
- U.S. Department of Commerce
- U.S. Department of Energy
- U.S. Department of Labor, Bureau of Labor Statistics (BLS)
- U.S. Department of Transportation
- Federal Highway Administration
- U.S. Energy Information Administration (EIA)
- U.S. Federal Reserve System
- Federal Reserve Bank of St. Louis

State & Local Data Sources

- Indiana Business Research Center, IU Kelly School of Business
- Marion County Assessor
- Develop Indy / Indy Partnership

News and Other Publications

- Bloomberg News
- The Economist
- Journal of Commerce
- New York Times
- Wall Street Journal

Other Sources

- American Railroad Development Association
- American Transportation Research Institute
- ACCRA Cost of Living Index
- The Brookings Institution
- Center for Automotive Research
- The CoStar Group
- The Council for Community and Economic Research
- Council on Competitiveness
- ESRI Business Solutions
- Institute of Transport and Logistics Studies, University of Sydney
- International Economic Development Council
- International Trade Commission
- Land Policy Institute
- Location One
- Texas Transportation Institute
- Transportation Research Board
- McKinsey & Company
- Nelson A. Rockefeller Institute of Government
- Pew Center on the States
- PwC

The effort acknowledges a number of specific studies that have been completed between 2007 and 2013 which have influenced and shaped this effort:

- Building the Supply Chain of the Future, McKinsey Quarterly, 2011
- Best Practices in Urban Freight Management: Lessons from an International Survey, July 2012
- Chicago Regional Freight System Planning Recommendations Study, CMAP, 2010
- FHWA Freight and Land Use Handbook, April 2012
- Florida Economic Development Program Evaluations - Year 1; Report No. 14-01; Offices of the Florida Legislature, Office of Program Policy Analysis & Government Accountability, 2014
- Has the Great Recession Raised US Structural Unemployment, IMF Working Papers, 2011
- InDOT State Rail Plan
- Labor Mismatch in the Great Recession: A Review of Indexes using Recent US Data, Federal Reserve Bank of St. Louis, 2013
- Powering Advanced Industries State by State; Brookings Institution, 2014
- Preserving & Protecting Freight Infrastructure and Routes, Transportation Research Board, 2012
- U.S. Port and Inland Waterways Modernization: Preparing for Post-Panamax Vessels, U.S. Army Corps of Engineers, 2012

ABBREVIATIONS

3PL – Third Party Logistics Provider
BEA - US Department of Commerce, Bureau of Economic Analysis
BNSF – Burlington Northern Santa Fe Railroad
CN – Canadian National Railroad
CP – Canadian Pacific Railroad
CEDS - Comprehensive Economic Development Strategy
CREATE – Chicago Regional Environmental and Transportation Efficiency Program
DMD - City of Indianapolis, Department of Metropolitan Development
DPW - City of Indianapolis, Department of Public Works
EIA - US Energy Information Agency
EPA – Environmental Protection Agency
FHWA – Federal Highway Administration
FRA – Federal Railroad Administration
InDOT - Indiana Department of Transportation
LNG / CNG – Liquid / Compressed Natural Gas
MSA – Metropolitan Statistical Area
MPO – Metropolitan Planning Organization
NS – Norfolk Southern Railroad
SF - Square feet
TAA - Trade Adjustment Assistance
TEU – Twenty Food Equivalent Unit
TRB – Transportation Research Board
UP – Union Pacific Railroad
USDOT – United States Department of Transportation
WIA - Workforce Investment Act

Indy FastTrack

2014

A market-based, results-driven plan to increase private investment in four underutilized regional land assets that were vacated as a result of the severe destabilization of the automotive industry.

Stakeholder Interviews - Insights and Implications

City of Indianapolis
Division of Planning
200 E. Washington Street, Suite 1821
www.indy.gov

This report was created by AECOM in coordination with and for the City of Indianapolis.
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Indianapolis Gregory A. Ballard, Mayor GUIDON DESIGN AECOM

Stakeholder Interviews - Insights and Implications 02

CORE FINDINGS

Organizational Capacity and Resources

Interviews reinforced the need for an entity or organization to take an active role in cleaning up former industrial sites and to facilitate transactions involving brownfield sites. While DMD has a Metropolitan Development Commission (MDC) structure in place to act as the county's "redevelopment authority", additional capacity and resources are clearly needed to jump start this structure, allowing it to take a more active role in redevelopment of old industrial sites.

Big Bets

Since the 1970's, local leaders have shown a consistent ability to organize public-private partnerships to revitalize the City's urban core. Some of these "big risks" have included:

- 1970 – Uni-Gov: Consolidated City-County Government is adopted by act of the Indiana State Legislature. The effort dramatically broadened the tax base of Indianapolis, significantly reducing the fiscal impact of individual manufacturing plant closures from a property tax standpoint.
- 1979 - Development of White River State Park: Assemblage, remediation and reuse of multiple parcels to develop a regional attraction which is now self-sustaining and self-governing.
- 1982 - The Hoosier Dome: Conceived before the city had an NFL franchise, opened in 1984 as the home of the Indianapolis Colts.
- 1995 - Circle Center Mall: A public-private partnership that led to the development of a downtown mall that has served as a broader anchor for downtown revitalization.
- 2008 – Lucas Oil Field: Major investment linked to demolition of the Hoosier Dome and expansion of the convention center.
- 2010 – The Cultural Trail / Downtown Housing: Downtown Indianapolis has seen a surge in housing construction, with an additional 3,000 units in the pipeline. The cultural trail is seen nationally as a best practice in encouraging urban walkability.
- 2012 - Super Bowl XLVI - Viewed as a transformative event, anchored by a public-private partnership.

Presuming that the current moment in time is a unique and strategic moment, the analysis begs the question of what the next big risk / investment for Indianapolis should be.

An Increasingly Walkable and Urban City

Indianapolis is generally viewed as a low tax, pro-growth region, one that is conservative, affordable, and a good place to raise a family. The Region is anchored by a strong sense of community spirit, which has been demonstrated through projects such as the Cultural Trail, which is seen nationally as a best practice in urban pedestrian mobility.

Freight Movement

Interviews reinforced the potential impact of the recent Indiana Railroad Canadian National Railroad intermodal partnership as well as the CSX / Indiana & Louisville Railroad corridor investment projects, both of which have the ability to increase freight movement through Indianapolis.

Complacency and Concern

The interviews reinforced a sense that Indianapolis is now exiting the Great Recession from a position of weakness rather than strength, and that deliberate steps will be needed to sustain the Region's recovery from an economic development standpoint. Areas of concern included limited public sector resources for economic development, a lack of prepared sites to support economic development, too many brownfield sites, and an insufficient understanding of the clear downsides of being "too good" at distribution and logistics, sectors which are defined by cost sensitivity rather than value added.

In total, while Indianapolis clearly has several strengths working in its favor, the interviews reinforced deeper underlying concerns that need to be addressed.

INTRODUCTION

FastTrack was intentionally built around an extensive 1-on-1 stakeholder engagement process. Since the project began in January of 2013, more than 100 interviews with public, private, and institutional stakeholders were completed.

Interviews focused on strengths, weaknesses, concerns, opportunities and threats, both to the City of Indianapolis and Central Indiana. Interviews were also used to frame the relative importance of FastTrack site reuse given other priorities in Marion County and the City of Indianapolis.

INTERVIEWED ORGANIZATIONS

The following organizations were interviewed.

Government-Related

- Capital Improvement Board of Managers, City of Indianapolis
- Central Indiana Community Foundation
- Department of Metropolitan Development, City of Indianapolis
- Department of Public Works, City of Indianapolis
- Indiana Business Research Center, IU Kelly School of Business
- Indiana Department of Local Government Finance
- Indiana Department of Transportation
- Indiana University Public Policy Institute
- Indianapolis Airport Authority
- Indianapolis Metropolitan Planning Organization
- Regional Council of Elected Officials
- State of Indiana, Office of Entrepreneurship
- Sustain Indy
- US Small Business Administration

Economic Development

- Central Indiana Corporate Partnership
- Conexus Indiana
- Develop Indy / Indy Chamber
- Energy Systems Network
- Indiana Convention Center & Lucas Oil Stadium
- Indiana Economic Development Corporation
- Indiana Manufacturing Association
- Indiana Office of Small Business & Entrepreneurship

INTERVIEWED ORGANIZATIONS

- Indiana Sports Corporation
- Indianapolis Foundation
- Indianapolis Downtown, Inc.
- Indy Partnership
- Indianapolis Bond Bank
- Indianapolis Local Initiative Support Corporation
- Indianapolis Local Public Improvement Bond Bank
- Manufacturing Extension Service – Purdue University
- Techpoint
- Urban Initiatives
- Visit Indy

Private Sector

- Ady Voltedge
- Allison Transmission
- Browning Investments
- CBRE
- Canadian National Railroad
- CSX
- Indiana Railroad
- Faegre Baker & Daniels
- IceMiller LLP
- Louisville & Indiana Railroad
- Greenstreet LTD
- Ginovus
- Major Tool
- Matterfab
- Monarch Beverage
- Norfolk & Southern Railroad
- Rolls Royce
- REI Investments
- JLL

Education & Workforce

- Ben Davis High School / Ben Davis University
- Employ Indy
- Indiana University-Purdue University Indianapolis
- Indianapolis University
- Ivy Tech
- Walker Career Center

FastTrack Site Specific Interviews

- City of St. Paul, MN
- Citizens Energy Group
- Denny Excavating
- East Washington Street Partnership
- Indianapolis Public Transportation Corporation (IndyGo)
- Indianapolis Power & Light Company
- Indianapolis Zoo
- Irvington Development Organization
- Irvington Historical Society
- Irvington Innovation Zone
- Marion County Assessor
- RACER Trust
- Panattoni Development
- Pure Power Technologies
- SEND CDC
- Stringtown Neighborhood Association
- West Indianapolis Development
- Westside Community Development Corporation
- White River State Park
- Wilhelm Construction

The stakeholder engagement effort started with the formation of three committees:

Advisory
Provided formal input to the process, and to support an extensive stakeholder interview process. Representation included staff from Develop Indy, along with DMD and the Mayor's office.

Resource
Identified data and materials to support key findings. Representation included staff from LISC, CICP, Develop Indy, the Indy Partnership, Employ Indy, Indiana University, and Ivy Tech.

Project Management
Oversaw month to month implementation of the project. Representation included City staff at the Department of Metropolitan Development and Develop Indy.

As the project evolved during 2013, the structure and representation of the advisory committee expanded to include organizations such as LISC and InDOT.

The stakeholder interview process helped to frame three elements:

- Strengths, weaknesses, opportunities and threats for Marion County and the greater Central Indiana Region
- Potential roles for the public and private sector in moving forward
- Highest and best use implications for the FastTrack sites

REGIONAL STRENGTHS AND WEAKNESSES

Strengths

- Although the Indianapolis Metropolitan Area (Central Indiana) is not among the top 30 US metros in population, Indy continues to play well above its weight economically and socially, anchored by solid brands in professional and amateur sports and collegiate athletics.
- Across the Midwest, Indy enjoys a generally positive, business friendly reputation (low tax, pro-growth), one that is conservative, affordable, and a good place to raise a family.
- The region is anchored by a strong sense of community spirit.
- Organizations such as Conexus have taken leadership in advanced manufacturing and logistics for the State of Indiana. The resulting strategies have focused on workforce development as well as targeted industry clusters.
- Local leaders have taken several “big risks” over the years. These major decisions include development of the RCA Dome / Lucas Oil Field, Uni-Gov, and development of Circle Center Mall. These transformative projects have been critical to the Central Indiana’s growth through 2007.
- Downtown Indianapolis has seen a surge in housing construction, with a reported 2,000 to 3,000 new units in the pipeline. Interviews suggested that urban housing is the “next big risk” that is being undertaken locally.
- The 2012 Superbowl was described in terms far broader than just economic development, as a transformative event, one that demonstrated that Central Indiana could, “..achieve something that we weren’t sure we could do”. Others argued that the Superbowl was a logical extension of other major events that have been held locally for years, i.e. the Indy 500.
- The private sector, government, and non-profits have a history of working well together.
- The City of Indianapolis has benefited from the legacy sustained by several strong / effective mayors, each of whom has sustained a long-term view.
- State finances in Indiana are in better shape compared to adjacent states, like Illinois.
- Indianapolis enjoys a strategic location on I-70, which is the shortest, least tolled route between LA and NYC.

Opportunities

- While interviews lamented the fragmented nature of local government across Marion County, Clearly, from a Midwestern context, local officials in Indianapolis manage with a significantly lower degree of political fragmentation compared to other metro areas.
- “Uni-Gov 2.0” was referred to as “the next big risk / big opportunity”, with the townships being a specific focus of frustration among interviewees.
- Current combined sewer overflow projects will improve water quality, and allow the region to better utilize the White River.
- Gaining greater benefits from being the second largest US Fed Ex hub.
- While Indy is largely a truck-served distribution market, there are opportunities to increase intermodal. The Indiana Rail Road / CN partnership will provide container service from

Prince Rupert direct to Indy, bypassing Chicago. Currently, BNSF and UP deliver containers to Chicago, which are then moved by truck to Indy. CSX and NS intermodal connections are too close to Chicago for intermodal service. CN and CP could be evaluated as partners to expand local intermodal rail connections.

- In the context of possible rail improvements for the Region, the Belt Line and the Hawthorne Yard should figure in future conversations. The Belt Line property is owned by Eli Lilly, but leased to CSX.
- Recent announcements by CSX regarding their partnership with the Indiana & Louisville Railroad bode well for enhanced rail connectivity, but will also increase freight movement through the region.
- Completion of I-69 through Indiana will lead to improved connectivity with southern US markets and Mexico.
- Existing neighborhoods in and adjacent to the downtown area can provide housing at different price levels while also being more walkable.
- Recent decisions by the state legislature in favor of "Right to Work" status were viewed positively.

Weaknesses

- The interviews reinforced a clear shortage of "ready to go" development sites across Marion County that have entitlements and infrastructure in place, including interstate and rail access. Areas with infrastructure in place are approaching built-out, including Ameriplex and Park 100.
- The reality of limited fiscal resources at the local level, along with a generally conservative state legislature, linked with debate about an apparent urban / rural divide across the state.
- The tax structure in Marion County creates challenges linked with reliance on local income taxes, which are collected where workers live, not work. Interviews also suggested that property tax caps and the status of the City of Indianapolis as a non-home rule municipality also factor negatively into the equation.
- The City's key industrial anchors, including Allison Transmission, Rolls Royce, and Raytheon, all operate in older and arguably obsolete space. Beyond these sites, the City bears the burden created by a legacy of old brownfield sites as well as empty residential properties
- There is general awareness of the outsized economic importance of Lilly Pharmaceuticals to the Central Indiana's economy, particularly in light of challenges that the company appears to be facing. Reports pointed to concern over drugs that will go "off patent" by 2014, creating pressures to cut costs. Conversations emphasized the need to ensure that the Central Indiana has achieved a greater level of economic diversification and resilience to better

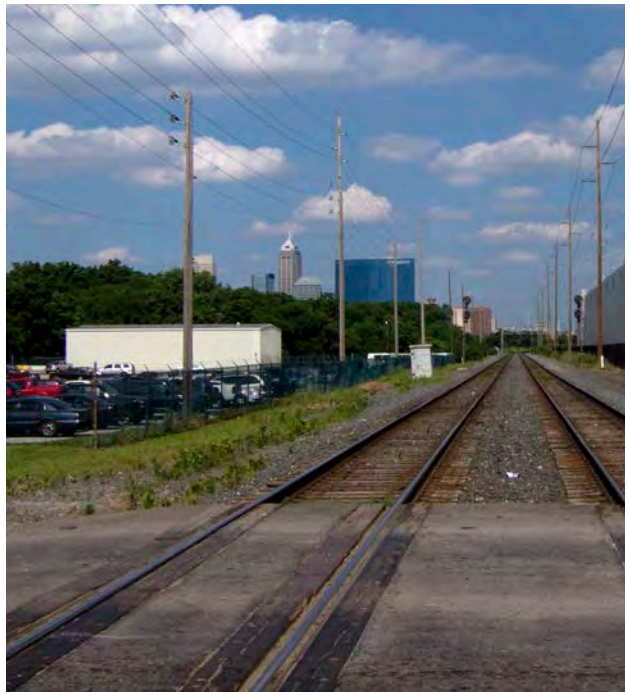
absorb future challenges, which should be viewed as inevitable in a broader sense.

Other weaknesses included:

- Although the State of Indiana is strong in exports, interviews suggested that local and state-level leadership in growing exports could be improved, particularly if it can help local companies expand their market reach.
- While Central Indiana and Marion County are growing, the larger rural segment of the State of Indiana is not growing. Interviews reinforced the importance of Marion County as a core growth engine for the entire state.
- Transportation investment across Indiana has been traditionally focused on road projects, at the expense of other modes of transportation including freight rail.
- Lack of modern transit in Marion County is a weakness. Interviews noted considerable plans for improvement, tied in with the need for state legislative approval. There was a general sense that residents living within 12 miles of downtown should have better transit service. The lack of a downtown transit connector to serve existing downtown attractions together was also identified.
- Interviews suggested that organizations such as Develop Indy have been too focused on industry attraction, rather than retention and expansion efforts. There was interest in retention and expansion as a priority.
- For manufacturing, there is concern that existing incentives (tax credits and tax abatements) are too closely linked with job creation. For manufacturing to recover, there is an apparent need to re-tool, meaning greater need for incentives to support capital expenditures (capex) rather than jobs. The effective choice is between generally lower paying distribution jobs or projects with larger CAPEX investments to retool, albeit with a smaller number of generally higher-paying jobs.
- With clear expectations that a larger share of freight will move by rail in intermodal shipping containers, there is a concern that existing intermodal terminals in Marion County are in need of improvement and greater capacity. The Indiana Railroad Senate Avenue intermodal terminal is one location where the likelihood of growth is real and capacity constraints are apparent.
- Local governments across Central Indiana have been incentivizing larger-scale distribution uses, particularly in suburban areas. Reports suggest that companies who are at the end of their 10-year abatement are looking for new space with a new abatement. With logistics remaining a highly cost-sensitive sector, and with many distribution centers paying lower average wages, arguments were made that a more deliberate strategy to align incentives with higher value wages or larger capital investments need to be considered. The clear concern is that the logistics sector is continually focused on ways to lower its costs.
- There was a clear need for the public sector to confirm its owned inventory of properties that have been acquired outright, or could be acquired through tax sale and other means. While Uni-Gov has reduced the number of government entities that own land, it is still difficult to get a clear picture of property ownership that can be used to drive redevelopment efforts.
- While interviews espoused the importance of "Regionalism" there was an equal concern about the weakened competitive position of Marion County. Deliberate decisions maybe needed to ensure that Marion's competitive position as a driver of job growth and economic opportunity can be sustained.
- The structure of economic development in Marion County remained in flux during 2013, in part due to personnel changes at Develop Indy, DMD, and other organizations. For DMD, interviews emphasized the recent role of the organization as only a planning entity, rather than an implementation entity.

Workforce Development Concerns

Indiana has made recent progress in workforce development, as evidenced by Governor Pence's Indiana Works Council initiative, which is intended to create more deliberate links between the education system and the private sector. The program is expected to help address the reality of a skills gap across the state, in part through expanded technical education at the high school level.



Although progress is being made, concerns are abundant, linked with the challenge of preparing young people for future careers while also ensuring that they actually have practical skills to enter the workforce. Interviews commented on a broad set of issues related to workforce development. First, workforce development dollars are dictated by federal and state laws, which constrain how these monies can be put to use locally. For example, programs such as Trade Adjustment Assistance (TAA) and Workforce Investment Act (WIA) have constraints that limit the ability of laid off workers to combine program dollars such that they can pursue a two-year program instead of short-term training. The resulting workforce system is one that has multiple entry points, making it more difficult for an individual within in the system to see the full picture.

Other related concerns build from apparent disconnects between economic and workforce development. For example, across Indiana, workforce investment area boundaries are different from state economic development area boundaries. As well, within Marion County, workforce intermediary contracts are up for renewal every three years. Other concerns include:

- The private sector is not sufficiently vocal in its concerns about Marion County and Central Indiana in regard to workforce development.
- There are on-going concerns related to short-term training particularly in higher skill manufacturing areas as well as a long-term need to replace retiring skilled workers, many of whom are in manufacturing.
- The traditional four-year undergraduate degree is considerably less affordable than it was 10 years ago. Cost increases are linked to reduced state funding in the past several years.
- There is evolving interest in apprenticeships and other programs that provide high school students with additional pathways to a career, beyond a traditional four-year college degree. Programs that allow high school students to graduate with an associates degree show promise, but only modest student interest.
- There is a lack of alignment between education and the private sector. Schools are not producing what companies need, and neither seems to be doing enough to bridge the gap.
- Careers in manufacturing are not encouraged, in spite of higher average wage levels. The result is a conundrum: jobs are available but the skills are not in place. For regions with a manufacturing tradition like Indianapolis, this is a specific challenge.
- Interviews reinforced the argument that there is a significant need for innovation in the space between middle school and traditional universities, with the apparent need for more deliberate thinking to better align workforce development with advanced manufacturing.
- Several organizations are involved in workforce development and entrepreneurship, but it is not clear who is “connecting the dots”, mapping resources, and clarifying the pathways for entrepreneurs. Creating a more deliberate structure could add value for the region.
- Elected officials in Indianapolis have used TIF funds to help support workforce development programs, an interesting development.

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2014

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FastTrack Site Condition & Highest and Best Use

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Indianapolis Gregory A. Ballard, Mayor GUIDON DESIGN AECOM

FastTrack Site Condition & Highest and Best Use 03

CORE FINDINGS

Reuse and redevelopment of the FastTrack sites should incorporate the following elements:

Communicate with Peer Cities

Current redevelopment planning for sites including St. Paul (Ford) and Boston (Assembly Square) will provide additional insight for decisions related to the GM Stamping plant, a site with both clear long-term value and considerable infrastructure reinvestment requirements.

These Sites Have Value, But…..

Only a minority of closed automotive assembly plants have been redeveloped, and successful reuse projects have taken as long as 30 years to fully unfold. In cases where reuse for commercial and mixed use is the goal, the purchase price for the asset can be easily exceeded by the developer's incentive request. Cost premiums associated with reuse link first with the cost of new infrastructure, including streets, utilities, and sidewalks to replace existing assets that were built for a single user. Also, as most automotive site improvements have been demolished leaving slabs and foundations in place, reuse strategies will incur cost premiums to deal with removal or reuse of these elements, presuming that sites have already been remediated to industrial standards.

Patience and Zoning Control

In general, there is danger in allowing key parcels to be "cherry picked" or sold off piecemeal, or allowing under-capitalized developers to gain site control. For this reason, it is critical for the public sector to maintain zoning control and sustain a willingness to enter the chain of ownership under certain circumstances.

Existing City Regulations

FastTrack site reuse will be influenced by City stormwater regulations which do not allow an increase in impervious surface for a given parcel.

Reuse Trajectories

There are a middle tier of former assembly sites whose future will remain industrial, with reuse of buildings or sites tied to market demand for space. Ideal outcomes presume a transition from leasing of existing space to construction of new manufacturing and distribution space.

Interim building reuse strategies need to be viewed with care, as incentives combined with cheap rents can have negative impacts on broader industrial markets.

In Indianapolis, there are several projects along the Shadeland Avenue Corridor where a manufacturing building was reused. Examples include:

- Western Select - The former Western Electric plant, which closed in 1983 with a loss of about 3,000 jobs, has been reused as a multi-tenant industrial campus. Current vacancy of about 155,000 SF was reported, along with rents in the $2.50 to $3.50 per SF range.
- Former Chrysler Electrical Division - This plant, which opened in 1959, and then became the first of 2 Chrysler plants to close, by the 1970's. The building, with about 930,000 SF, now operates as a multi-tenant industrial building, with about 79,000 SF vacant.

There is a third tier of older manufacturing sites which, either due to extensive remediation requirements or market forces will remain vacant for many years. For a small number of these types of sites, strategies linked with installation of ground-based solar panels have been used to generate revenue that can be used to facilitate long-term remediation of brownfield sites. Across Indianapolis there are a significant number of these sites, including Carrier-Bryant, Avanti, and Former RCA / Thompson Electronics.

Site Specific Highest and Best Use Implications

Ford / Visteon Site

At 150 acres, the Ford site is strategic; existing buildings are not viewed as ideal for renovation. A redeveloped business and industrial park is seen as the highest and best use of this site. Property that fronts along the Pennsy Trail that could be suitable for residential, based on existing utility easement impacts.

Navistar Site

For the near-term, no change in use is expected while existing equipment leases remain in place, and the Foundry continues to operate. Highest and best use of the site and buildings will remain industrial in nature. Adaptive reuse ideas include:

- Multi-tenant industrial / distribution space
- Fabrication space for modular housing
- Facility to support hydroponic food production and anaerobic digestion (to produce power and heat)

The site has direct access to the CSX Hawthorne rail yard, as well as good connectivity to I-465 via Brookville Road, pointing to future site use for larger scale distribution and logistics activities, linking rail yards by way of over-weight truck roads to distribution centers.

Chrysler Foundry

As foundation slabs remain in place, the current use of the site for sorting of scrap and other materials is expected to remain for the near-term. Highest and best use is expected to be industrial, related to trucking, manufacturing and distribution, linked with good access and visibility off of I-70. The site could also be suitable for future truck CNG / LNG fueling.

GM Stamping Plant Site

Based on experience, full conveyance of this site to private ownership could take more than a year.

The size of the GM Site (about 100 acres), infrastructure conditions, and general complexity (proximity to the CSX Main Line / Belt Line, and access to I-70) argue that full redevelopment will take time, and require considerable incentives. The western edge of the site along Harding Street is a concern, due to fragmented ownership and land use, remediation needs, and the issue of how to manage existing at-grade railroad crossings.

Interim uses that can incrementally move portions of the site forward will be important. Highest and best use recommendations for GM revolve around the following framework. For the eastern 2/3 of GM, entertainment and leisure-oriented uses are viewed positively if they expand on the base of downtown attractions, extend visitor stays, and enhance fiscal impacts to the City of Indianapolis. Additionally, mixed-use development (residential and office) was viewed with short-term hesitance. Current downtown projects are only beginning to establish a floor on market values, with many projects needing incentives. A successful residential element would need to be positioned strategically in context with current and evolving downtown residential offerings, which argues for an interim use for the eastern 2/3 of the property. Residential uses would need to be separated from existing rail corridors. Finally, related to the eastern 2/3 of the GM site, any mixed use outcome should be aligned with transit improvements to sustain higher residential development densities and premium land values. Feasibility of connections to the downtown district heating system should also be confirmed.

For the western 1/3 of GM, the highest and best use recommendations link with the extent of future regional connectivity for Harding Street, as well as the need for property assemblage. The existing character of Harding Street, along with the presence of several sites with environmental remediation concerns make residential reuse less likely in the near term. The highest and best use would likely include higher value business services activities, as well as flex / office showroom and distribution; residential is not seen as likely. Lastly, past thoroughfare plans showed Harding Street as a more significant N-S connector serving the western edge of the downtown core. While this project is currently not in the City's Thoroughfare Plan, it may need to be re-evaluated as part of Plan 2020, along with future need for grade separations along Harding between Washington and I-70.

FastTrack SITE CONTEXT

This section summarizes the surrounding context and existing land uses of the four FastTrack sites. As illustrated below, the four FastTrack sites span the east-west width Indianapolis. The four sites include:

- Chrysler Foundry
- General Motors
- Navistar
- Ford/Visteon

This section contains an overview of each FastTrack site's context, including the character and land use of adjacent properties and neighborhoods, a discussion of existing and ongoing plans and initiatives that will likely impact the redevelopment of these properties, as well as multiple maps illustrating the properties' land use and zoning context.

Historically positioned to take advantage of dense rail and interstate infrastructure, aligned with other Midwestern manufacturing hubs, these four sites are now representative of the challenges and opportunities the City of Indianapolis faces as it transitions toward a future that is defined by advanced manufacturing.

With the loss of approximately 26,900 manufacturing jobs between 1990 and 2012, the City of Indianapolis and Marion County are left with a large network of underutilized and/or abandoned manufacturing properties. One of the most notable characteristics common to each of the four sites is the proximity of rail infrastructure. Freight movement and rail access has traditionally been a critical component of regional manufacturing and could be a binding asset that aids redevelopment of the FastTrack sites in the future.

Although property configurations and land use adjacencies for the FastTrack sites vary, the neighborhoods, corridors, and land uses proximate to each site do share some similar characteristics.

Each site is surrounded by a mix of land uses, including older, established residential neighborhoods, aging strip retail establishments along commercial corridors, and a mix of active and inactive warehousing and industrial uses. In general, the neighborhoods and developments surrounding the FastTrack sites show signs of disinvestment; however, the properties are well-positioned for redevelopment and have the potential to serve as an economic catalyst for the Indianapolis region. The properties' common assets, including relative proximity to downtown Indianapolis, easy access to the interstate system, and the availability of well-connected rail infrastructure, can be leveraged to maximize their redevelopment potential.

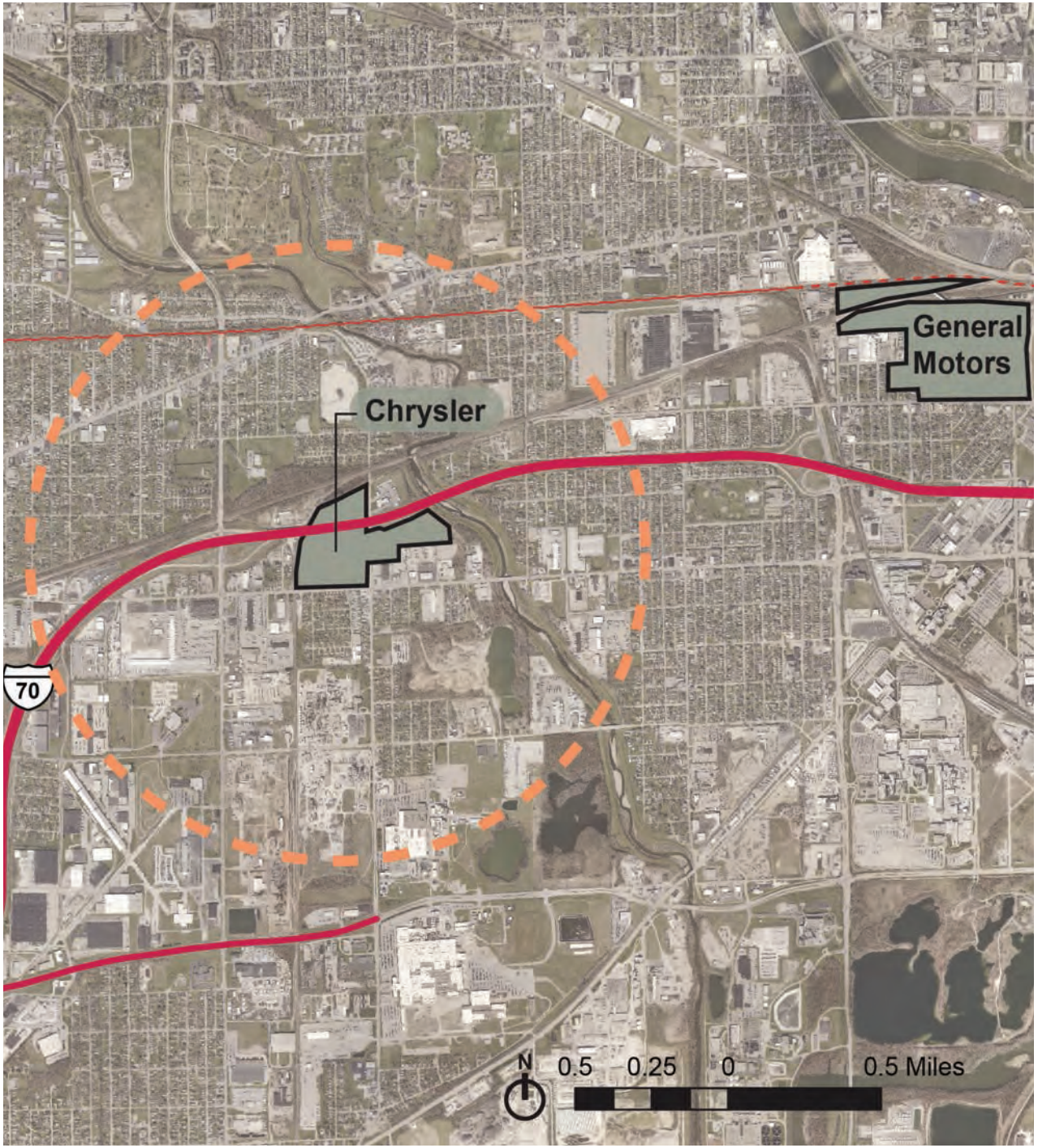
SITE 1 - CHRYSLER FOUNDRY

Site / Zoning Description

Located at 1100 South Tibbs Avenue, the majority of the 47-acre Chrysler Foundry site is located just south of I-70 in the northwestern quadrant of the intersection of Tibbs Avenue and Morris Street. The “Chrysler Site” includes four parcels. 1100 S. Tibbs was the location of the former foundry buildings, with other adjacent sites supporting logistics, truck parking, and employee parking.

The Chrysler site is currently zoned I-4-U, or Industrial-4 Urban, which allows the highest intensity industrial uses that are permitted “by right” in the Indianapolis/Marion County Zoning Ordinance. The I-4 designation also allows for the industrial uses permitted in the I-1, I-2 and I-3 districts, as well as outdoor storage, up to 75 percent of the lot area. The U/Urban designation requires lesser setbacks and landscaping than an S/Suburban classified industrial site.

Examples of permitted I-4 uses include construction equipment manufacturing and storage, manufacturing and processing operations for products such as asphalt, concrete, detergents, lumber, rubber and steel. The I-4 District also allows more intense uses through a Special Exception classification, including coke ovens, foundries, chemical and explosive manufacturing, slaughterhouses, waste transfer stations and salvage yards.



SITE 1 - CHRYSLER FOUNDRY SITE VIEWS

Site View 1: Southeast corner of Chrysler Foundry site at the corner of Morris Street and Tibbs Avenue.

Site View 2: Chrysler site looking west on Morris Street.

Site View 3: Looking east along Tibbs Avenue into the site.

Site View 4: Chrysler Foundry site looking west.

SITE 1 - CHRYSLER FOUNDRY CHRYSLER FOUNDRY NEIGHBORHOOD VIEWS

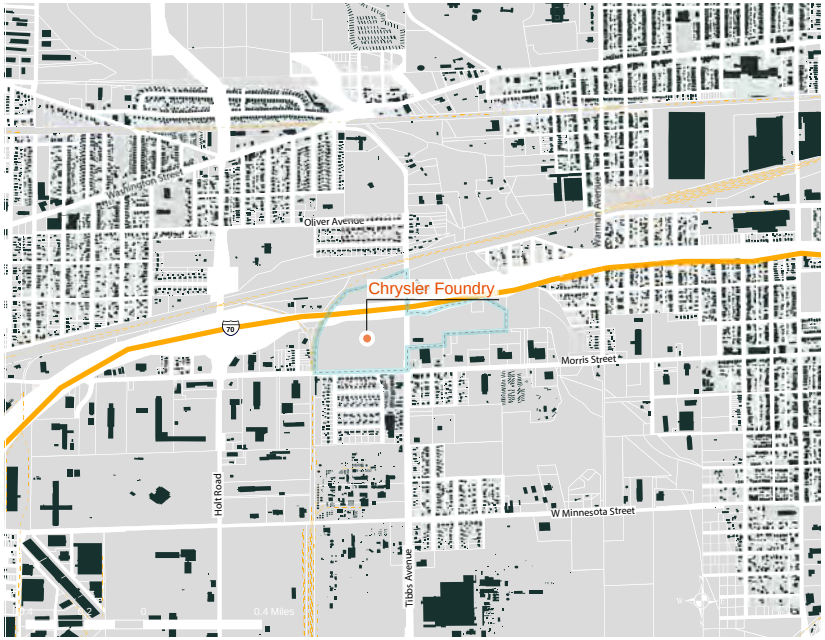
Neighborhood View 1: Commercial use north of Chrysler Foundry site.

Neighborhood View 2: Corner of Tibbs Avenue and Morris Street.

Neighborhood View 3: Land use perspective east of Chrysler Site, with distribution operations in the area.

Neighborhood View 4: Residential north of Chrysler site.

MAP 3.5 - CHRYSLER FOUNDRY SITE CONTEXT



Parcels

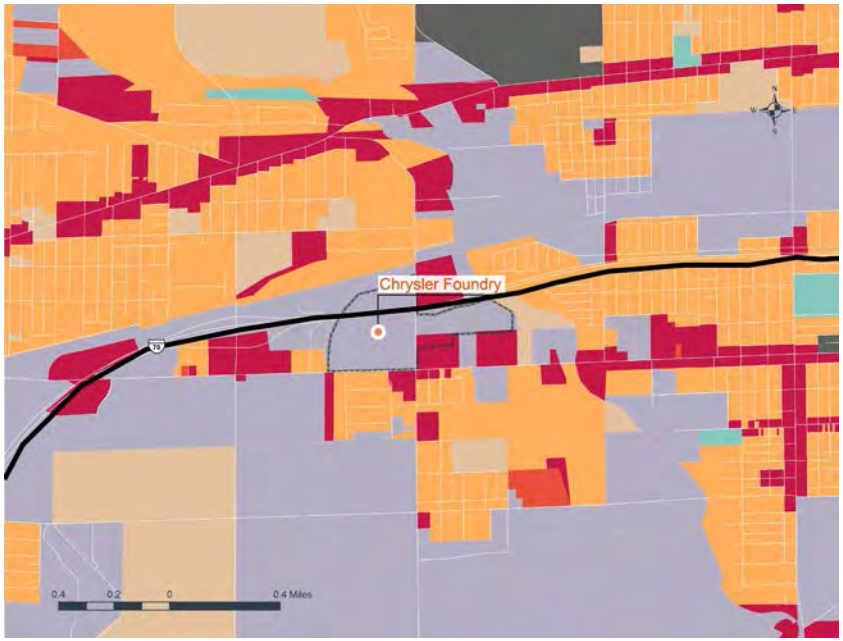
Building Envelope

Site Boundary

Limited Access Roadway

Railroad

MAP 3.6 - CHRYSLER FOUNDRY ZONING



Zoning Categories

Commercial

Industrial

Commercial-Industrial

Dwelling

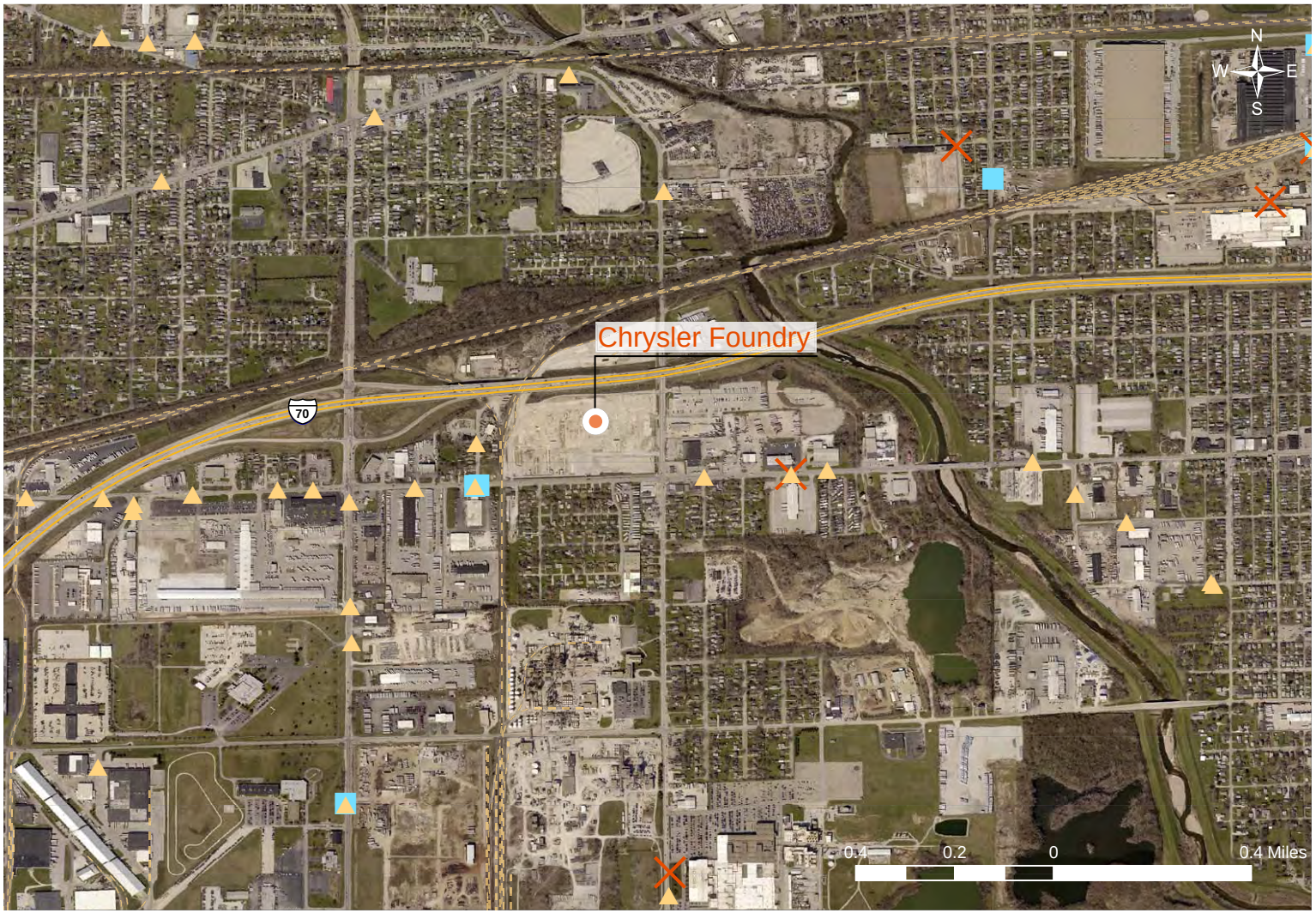
Planned Unit Development

Park District

Special Use

Limited Access Roadway

MAP 3.7 - CHRYSLER FOUNDRY BROWNFIELD SITES



State Cleanup Sites

Underground Storage Tank

Voluntary Remediation Program

Limited Access Roadway

Railroad

Surrounding Character

As illustrated in Map 3.6, the context surrounding the Chrysler site is diverse, with a mix of residential, retail/commercial, and industrial uses. The Morris Street corridor to the south of the Chrysler site is comprised of shipping/trucking storage, auto repair shops, and various retail outlets.

The Foundry site is also adjacent to a residential neighborhood to the south, with smaller, older homes, particularly along Morris Street and to the south and west of Tibbs Avenue. To the north of the site is I-70 and the CSX railroad. Directly west of the site is a railroad spur. The CSX railroad bridge over Morris Street is height restricted (10 feet) making truck movement north of the bridge impossible.

Future Uses and Relevant Plans

Due to its location, existing context, and prior use, the Chrysler site is likely to remain light to heavy industrial. The existing I-4-U classification provides the greatest flexibility to future industrial users. The Chrysler site's land use is guided by the Indianapolis Insight Comprehensive Plan, adopted in 2005.

The Wayne Township portion of the county-wide comprehensive plan recommends the site maintain a "General Industrial" land use designation. The General Industrial land use is characterized by intensive uses, which may include outdoor storage or uses that generate intense emissions of light, odor, noise or vibration that are difficult or impossible to eliminate. The comprehensive plan does not set forth a zoning recommendation for the Chrysler site; however, General Industrial is likely to be consistent with the I-3 and I-4 zoning designations.

The West Indianapolis Quality of Life Plan, developed in 2004, also sets forth recommendations that impact the Chrysler site. This plan recommends a mixed-use and multi-modal development pattern along Morris Street (to the south of the site) and Belmont Avenue (to the east), including streetscape improvements, gateway elements, and improved connectivity to the Indianapolis Zoo, the White River Greenway, and downtown Indianapolis.

Barriers to Redevelopment

The Foundry parcel was sold to a third party for sorting of construction debris; their future plans for the site are not clear at present. Environmental records suggest that this parcel has been remediated to industrial standards.

Other parcels in the grouping remain in the ownership of Parts Carnival, even as signage for these sites indicates that Daimler-Chrysler is the owner.

While Foundry buildings were demolished, the foundation slabs remain in place, which will increase redevelopment costs.

	Chrysler Parcel 1	Chrysler Parcel 2	Chrysler Parcel 3	Chrysler Parcel 4
General Information				
County / City	Marion County / City of Indianapolis	Marion County / City of Indianapolis	Marion County / City of Indianapolis	Marion County / City of Indianapolis
Township	Wayne	Wayne	Wayne	Wayne
Land Area	24.09800275	7.8	14.51021579	0.78030303
Improvements Description	Vacant	Vacant	Vacant	Vacant
Parcel Size	Rectangular	Roughly triangular	Irregular	Irregular
Address	1100 S. Tibbs Ave	900 S Tibbs Ave	1103 S. Tibbs Ave	1101 S. Tibbs Ave
General Site Description	Site of former Chrysler Foundry; NW quadrant of Morris St. and Tibbs Ave; South of I-70; Rail lines border the parcel to the west; Improvements were demolished between 2005 and 2007; Foundation slab remains in place	West side of Tibbs, North of I-70; Thru 2005, the site supported several rail spurs, as well as storage tanks and truck parking. Site improvements were demolished between 2005 and 2007. Rail spurs appear to remain in place	Vacant site on east side of Tibbs Ave, with frontage on the south side of I-70. Parcel appears to have been used as employee parking through 2005. Currently being used for truck / semi-trailer storage.	Interior parcel with limited street access; frontage on Eagle Creek and I-70; Parcel was improved with a storage tank around 2000, to manage stormwater flows, which remains in place.
Access	Parcels have access on to Tibbs Avenue and Morris St. Tibbs Avenue connects into Holt Road, providing access to I-70 East and West; access is excellent			
Visibility	All four parcels have good visibility from primary streets, with limited direct visibility from I-70			
Topography	Generally flat			
Land Use Adjacencies	Use south of Morris St. along Tibbs is residential, with distribution and outdoor semi-trailer storage sites as well. Toward Holt Rd (to the southwest), land use is largely industrial and distribution in nature. The study area is impacted by Eagle Creek, I-70 and several rail lines. Land use north of I-70 is largely residential in nature. Based on the information considered above, current environmental conditions in the area south of I-70 appears to present little or no unacceptable risks to potential redevelopment.			
Flood Plain	not apparent	not apparent	possible 500-year flood plain impact due to Eagle Creek	possible 500-year flood plain impact due to Eagle Creek
Ownership	Parts Carnival LLC	Parts Festival 7.13 LLC	Hearthstone Heartland Properties LLC	Parts Carnival LLC
Zoning	I - U - 4 Heavy Industrial	I - U - 4 Heavy Industrial	I - U - 4 Heavy Industrial	I - U - 4 Heavy Industrial
Adjacent Property Zoning	Both industrial and residential uses and zoning districts currently exist around the site. To the north, single-family residential (zoned D-4) and several automotive salvage yards east of Tibbs (variously zoned C-7, I-2-S, I-3-S). Residential areas south are zoned D-5. Several industrial and logistics uses are to the west (C-7, I-3-S and I-4-U zoning).			
Tax Parcel Numbers	9050045 / 49-11-08-142-001.000-970	9028721 / 49-11-08-109-013.000-970	9058632 / 49-11-09-123-036.000-970	9036273 / 49-11-09-123-016.000-970
2013 Gross Assessed Value	$822,500	$110,000	$995,400	$51,900
2012 Gross Assessed Value	$929,600	$127,000	$825,000	$48,100
2013 Taxes Paid	$34,098	$5,784		
2012 Taxes Paid	$37,311	$6,294		
Rail Access	Yes - existing spur	Yes - existing spur	no	no

	Chrysler Parcel 1	Chrysler Parcel 2	Chrysler Parcel 3	Chrysler Parcel 4
Historical Context	Background sources indicate that the site was in industrial use going back to before 1900. Chrysler assumed ownership of the property in the 1940's, until the plant was closed, reportedly in 2005.			
Traffic Counts	Approximately 15,000 cars per day on Morris, east or west of Tibbs (Google Earth Pro, 2012)			
Impervious Surface Calculation	960,486 SF	257,952 SF	403,055 SF	729 SF
Notes				
Environmental Status				
Status	In 2008, agency responsibility for RCRA Corrective Action obligations other than the hazardous waste pile referenced above was transferred from the IDEM to the U.S. EPA. Numerous documents dated 2011 cite "… pending corrective action…" and "… RCRA Corrective Action obligations…". The definition and the status of these matters are not clear based on review of the public files obtained from IDEM. In general, RCRA Corrective Action concerns affect the property north of Interstate 70.		The IDEM public file for this site contains older files all pertaining to closure of underground storage tanks. The IDEM LUST database contained no records for this address. The documents in the public file indicate that no further action is warranted pursuant to LUST matters at this site. This site appears to present no unacceptable environmental risk based on review of the information provided in the IDEM public files.	Environmental status of this parcel is not certain.
Utilities				
Electricity - transmission voltage	34 KV transmission line			
Electricity - Sub-Station to Plant	Substation has been removed			
Electricity - Max Load	NA			
Sewer	Available to site			
Water	Available to site			
Steam / Chilled water	Not available			
Natural Gas	Available to site			

SITE 2 - GENERAL MOTORS

Site Description

The General Motors (GM) site, located at 340 South White River Parkway West Drive, is approximately 103 acres and is currently zoned Industrial Urban (I-4-U), with a small portion zoned Office Buffer Commercial (C-1). The site is well served by rail to the north and west and has easy access to downtown to the east and Interstate-70 to the south.

The I-4 District allows the highest intensity industrial uses that are permitted "by right" in the Indianapolis/ Marion County Zoning Ordinance. I-4-U also allows the less intense industrial uses permitted in the I-1, I-2 and I-3 districts, plus outdoor storage up to 75% of the lot area. Examples of uses permitted include construction equipment manufacturing and storage and manufacturing and processing operations for products such as asphalt, concrete, detergents, lumber, rubber and steel. The I-4 designation also allows more intense uses by grant of Special Exception, including uses such as coke ovens, foundries, chemical and explosive manufacturing, slaughterhouses, waste transfer stations, and salvage yards.

Approximately 0.7 acres of the GM site is zoned C-1, or Office Buffer Commercial, which is the lowest intensity commercial zone. This district primarily allows office, plus other low intensity uses such as daycares, nursing homes, private clubs, art studios, and schools. The C-1 designation is typically considered an appropriate buffer between residential uses and higher intensity commercial or industrial operations.

The GM site also falls within the RC, or Regional Center, zoning overlay district, which applies to the downtown area, generally defined as the I-65/I-70 inner loop on the south and east, 16th Street on the north and Harding Street on the west. A portion of the district extends north of 16th Street along

a narrow Meridian Street corridor which ends at 30th Street. The RC overlay provides form-based design requirements for redevelopment based on development typologies. The RC design guidelines classify subareas within the RC overlay, with the GM site classified as a Utilities and Industrial (UI) typology. The guidelines set forth five guiding principles that provide a framework for how developments within each typology are evaluated: Mobility; Health, Safety and Opportunity; Adaptability and Sustainability; Public Realm; and Character & Vitality. The design guidelines will influence the redevelopment and approval process for the GM site and will inform the design of proposed structures, site configuration, massing and density, and character and appearance. The UI typology is the least restrictive in terms of the outlined design recommendations restrictions.

SITE 2 - GENERAL MOTORS SITE VIEWS

Site View 1: Harding Street rail crossing at General Motors site.

Site View 2: CSX main line looking east in General Motors site area.

Site View 3: View from downtown Indianapolis toward General Motors site.

Site View 4: General Motors site looking north.

SITE 2 - GENERAL MOTORS NEIGHBORHOOD VIEWS

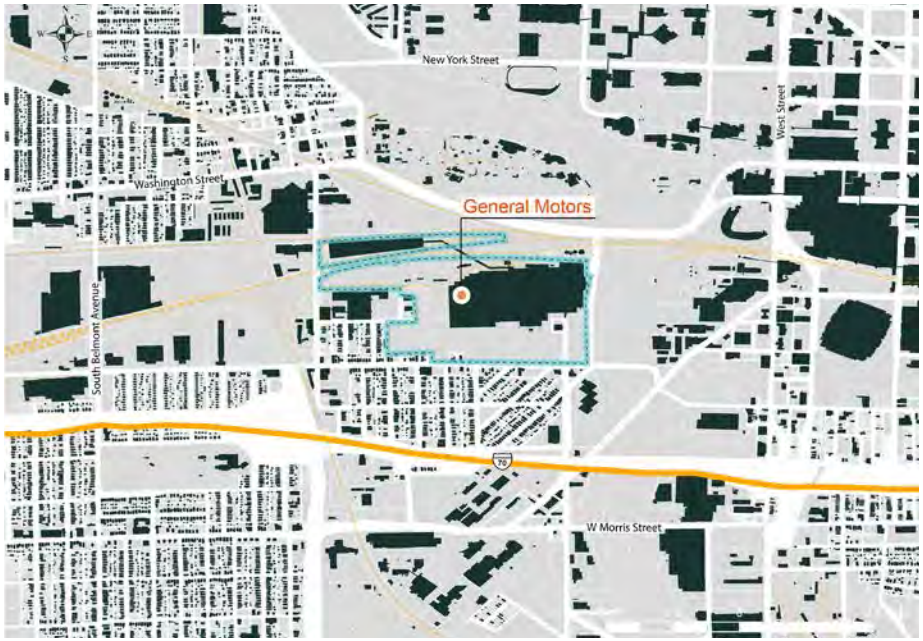
Neighborhood Site View 1: General Motors view from White River.

Neighborhood View 2: Harding Street looking south.

Neighborhood View 3: Abandoned buildings along Oliver Avenue south of the General Motors site.

Neighborhood View 4: Harding Street looking west.

MAP 3.11: GENERAL MOTORS SITE CONTEXT



Parcels

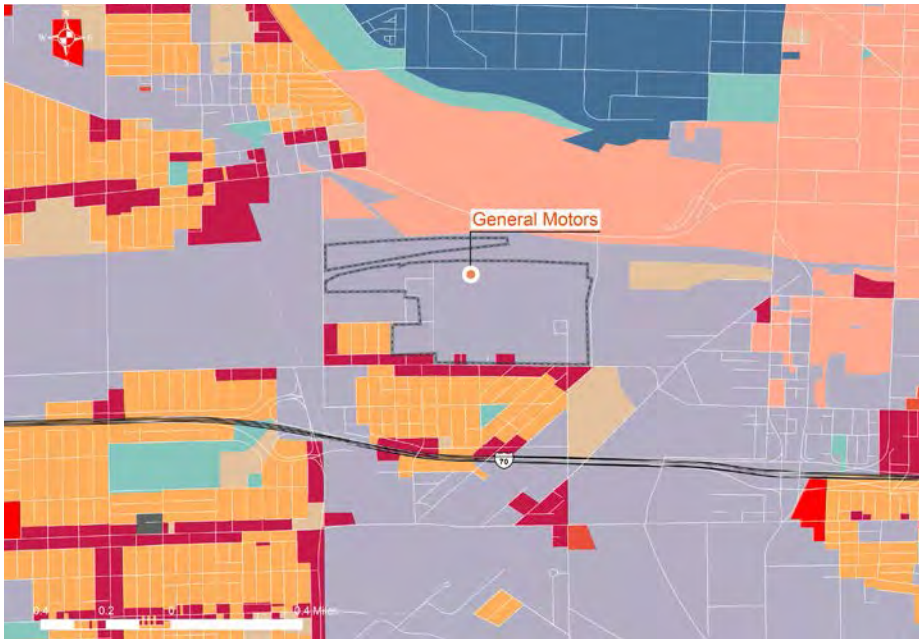
Building Envelope

Site Boundary

Limited Access Roadway

Railroad

MAP 3.12: GENERAL MOTORS ZONING



Zoning Categories

Commercial

Industrial

Commercial-Industrial

Dwelling

Planned Unit Development

Park District

Special Use

Central Business District - Special Dev.

University Quarter

Hospital

Limited Access Roadway

MAP 3.13: GENERAL MOTORS BROWNFIELD SITES

Surrounding Character

The GM site is located just west of downtown Indianapolis and the White River, and borders Washington Street to the north and Oliver Avenue to the south. The Indianapolis Zoo and White River State Park border the GM site to the north along Washington Street and I-70 is just a few blocks south of the site. As illustrated in Map 3.12, the area and neighborhoods surrounding the GM site include a mix of uses, with residential enclaves set in a broader land use framework which is largely industrial in nature.

While the GM site is well-positioned, with proximity to downtown Indianapolis, interstate accessibility, and open views of the White River, the character of the neighborhoods north and south of the site vary considerably. Older single-family neighborhoods border the site to the south, with a mix of auto repair shops and boarded retail outlets, while the Washington Street corridor to the north shows signs of recent reinvestment.

Future Uses and Relevant Plans

Due to its proximity to downtown and the recent improvements along the Washington Street corridor by the zoo, the GM site is unique among the automotive plants included in the FastTrack initiative and is the only site to have potential for higher value redevelopment.

The GM site and its surrounding environment has attracted significant interest in recent years and has an extensive zoning history. Most notable is the Central Business District – 2 (CBD 2) rezoning north of the site in 2011, which provides for residential reuse of an existing industrial building. The surrounding areas have also had successful rezoning approvals for multi-family residential developments and reduced setback requirements.

The GM site has also been the subject of multiple land use and redevelopment studies. The Regional Center Plan 2020, adopted in 2004, is the comprehensive plan document that guides the planning efforts for the GM site. This plan recommends 'Heavy Industrial' uses for the entire site, which is consistent with the site's current I-4-U zoning designation. The Plan defines several "Critical Areas" that received more detailed analysis and land use/redevelopment recommendations. While the main GM site was not included in a Critical Area, the GM distribution facility north of the railroad tracks was included in Critical Area 15 – Railroad Corridor. The Plan highlights the potential of removal of this freight line entirely or its conversion to mass transit, which would then necessitate further evaluation.

Other plans and initiatives have a broader vision for the site that leverages its location and surrounding redevelopment momentum. For example, the Urban Land Institute (ULI) Advisory Services Panel Report, prepared in 2011, evaluated the redevelopment potential for the GM site and surrounding area and provided recommendations for industrial and/or mixed-use redevelopment. The ULI report acknowledges that the most advantageous short-term use of the site is re-occupancy by a jobs-producing industrial user. However, if an industrial user is not found in the short-term, the report recommends that the site be re-envisioned as a mixed-use center, capitalizing on access to downtown, existing neighborhoods, and recreational amenities such as the zoo, the White River, and the White River Trail. Such a redevelopment of the GM site would also offer additional momentum for reinvestment and redevelopment of both residential and commercial structures in the surrounding "Valley" neighborhood.

Additionally, the "Moving Around Downtown" section of the Regional Center Plan 2020, sets forth a recommendation for a pedestrian greenway adjacent to the White River, which would border the GM site to the east and provide a connection to the White River Trail (which is completed from 38th Street to White River State Park). The "Placemaking Downtown" section of the Regional Center Plan 2020 also identifies Oliver Avenue, south of the GM site, as a potential 'urban path,' linking westside neighborhoods to the proposed greenway and to downtown.

The West Indianapolis Plan (1996) was the comprehensive plan segment for this site prior to the adoption of the Regional Center plan. The plan is still the official policy document for the portions of the West Indianapolis neighborhood that are outside of the Regional Center boundary. As in the Regional Center plan, the GM site is recommended for "Heavy Industrial."

Barriers to Redevelopment

The study acknowledges the existence of a complex network of roads and rail lines that connect at-grade along the western edge of the GM site, with emphasis on the Harding Street corridor. While secondary rail spurs that directly served the former GM plant are likely to be removed, the CSX mainline will likely remain, and see increased traffic over time. Opportunities for rail spurs of the Belt Line to future industrial sites along Harding Street should be considered.

The western 1/3 of the GM site, as well as parcels in the northeast quadrant of Oliver and Harding Street will require further assemblage and potential rezoning, in order for redevelopment to unfold. Harding Street, classified today as a "neighborhood street" will need to be reevaluated as part of future plans for the GM site. Further study of grade separations with CSX and the Belt Line should be performed.

There are a number of 'brownfield' sites adjacent or in close proximity to the GM site.

	GM Parcel 1	GM Parcel 2	GM Parcel 3	GM Parcel 4
General Information				
County / City	Marion County / City of Indianapolis	Marion County / City of Indianapolis	Marion County / City of Indianapolis	Marion County / City of Indianapolis
Township	Center	Center	Center	Center
Land Area	65.18771809	24.59063361	12.10417815	0.506198347
Improvements Description	Site is currently improved with about 2,100,000 SF of space, including office, distribution, and manufacturing activities. Reports indicate that the existing improvements are slated for demolition, possibly in 2014			
Parcel Size	Irregular	Generally rectangular	Narrow, generally rectangular	Generally square
Address	340 White River Parkway W. Drive S.	340 White River Parkway W. Dr.	201 S Harding St	514 Drover St
General Site Description	Main parcel for GM site, currently improved with multiple buildings. Property is bordered to the north by CSX rail lines; White River Parkway serves as the eastern boundary for the site	Majority of parcel is currently improved as surface parking. Northern 15% of parcel is improved with existing factory buildings. Property has generous frontage on Oliver Avenue.	Parcel separated from main GM site by several rail lines, owned by CSX. Status of easments over the CSX line is unknown.	Small generally square, interior parcel improved with a 1-story office building, likely the former plant's union hall.
Access	Multiple access points to Harding St. and Oliver Ave. Interstate access to I-70 via Harding St.		Harding St. is the only access point, providing connectivity to I-70	No direct street access
Visibility	Average. While the site is not directly visible from I-70, taller structures would be visible from the interstate			
Topography	Generally flat, less than 2 feet of elevation change across the site			
Land Use Adjacencies	1/4-mile frontage along the White River; Access from I-70, adjacent to downtown / Lucas Oil Stadium. Uses to the south are generally residential; to the west, largely industrial. The GM site is adjacent to the Deep Rock Tunnel, which has a width easement of 40 feet; the tunnel alignment lies within the bounds of the White River. Freight rail corridors to the north and west heavily influence the site. The Beltline splits off from the CSX mainline just west of the GM Site.			
Flood Plain	A majority of the site appears to fall within the 500 year floodplain of the White River. Floodmaps suggest that flooding potential is linked with inundation from the south, rather than directly from the river.			
Ownership	General Motors Corp Chevrolet Motor Div Central Office	RACER Trust	RACER Trust	RACER Trust
Zoning	I - 4 - U RC, Heavy Industrial	I - 4 - U RC, Heavy Industrial	I - 4 - U RC, Heavy Industrial	I - 4 - U RC, Heavy Industrial
Adjacent Property Zoning	The GM site is surrounded by a number of zoning districts. To the west and north, there are several industrially developed properties which share the site's I-4-U zoning. Also to the north is an undeveloped, wooded parcel zoned CBD-S (Central Business District – Special), a designation wherein an applicant specifies the desired uses for MDC consideration at the time of rezoning. Also along the west property line is a single-family residential neighborhood, zoned D-5. The properties to the south of GM along Oliver Avenue are zoned C-1 and C-3, which allow for office and small scale retail activity, although a number of those properties are developed with residential structures. Environmental records suggest that there are a number of properties that are proximate to the GM site that are classified as "sites of concern".			
Tax Parcel Numbers	1023926 / 49-11-10-133-056.000-101	1105148 / 49-11-10-133-063.006.101	1105056 / 49-11-10-133-063.004-101	1049723 / 49-11-11-146-007.000-101
2013 Gross Assessed Value	$820,800	missing	missing	missing
2012 Gross Assessed Value	$9,691,500	missing	$4,382,600	$431,200
2013 Taxes Paid	NA	missing	missing	NA

	GM Parcel 1	GM Parcel 2	GM Parcel 3	GM Parcel 4
2012 Taxes Paid	$350,369	NA	$146,839	$0
Rail Access	Yes - CSX - rail spur	No	Yes - CSX - rail spur	No
Historical Context	The site began activities as the Martin-Parry Carriage Works. Chevrolet purchased the plant and renovated it to become a metal fabricating plant. In 1982, General Motors purchased the adjacent Ulrich Chemical facility for repair and storage of metal transfer racks. Reported Industrial use of this site dates back to 1929 when it was used as a steel warehouse.			
Traffic Counts	Roughly 5,000 cars per day on Oliver in front of GM Plant; estimated counts along Harding range from 4,000 to 10,000 cars per day, with higher counts closer to the Harding Road interchange with I-70			
Impervious Surface Calculation	2,687,540 SF	1,054,817 SF	487,525 SF	21,983 SF
Notes 1	Indianapolis Public Works has scheduled $2.6 million to rehabilitate the Oliver Ave. bridge and $3.4 million to rehabilitate the McCarty Ave. Bridge over White River. Funding is programmed for FY 2018 from the MPO.			
Notes 2	The Harding Street connection from Washington to Oliver and I-70 remains a key question. Harding crosses three sets of railroad tracks at grade between Washington and I-70. Going back to thoroughfare plans prior to 2000, Harding Street was identified as a future north-south connector serving the core area of downtown Indianapolis.			
Notes 3	Conversations with Citizens Energy in the fall of 2013 confirmed that there are no Deep Rock Tunnel projects associated with the GM site			
Notes 4	Parcel # 1105148 was split off from 1023926.			
Environmental Status				
Status	RCRA Corrective Action environmental investigations completed in 2010 and 2012 indicate that soil and groundwater at this site contain multiple constituents at concentrations exceeding applicable 'screening levels' established by the IDEM. The constituents cited include certain volatile organic compounds (VOCs), certain semi-volatile organic compounds (SVOCs) and several metals. Based on review of the information presented above, potential environmental exposure risks are evident at this site and additional monitoring and remediation are planned. Conceptually, the monitoring and remediation planned appear to be appropriate for the current conditions, and can be expected to lead to an outcome that provides for redevelopment of the site with acceptable environmental exposure risks.			
Utilities				
Electricity - transmission voltage	34 KV transmission Line feeding 1 substation, with 3 transformers			
Electricity - Sub-Station to Plant	3 - 13KV Lines serve plant, 1 per transformer			
Electricity - Max Load	8 MW			
Sewer	Available to site			
Water	Available to site			
Steam / Chilled water	The site is adjacent, but not connected to Citizens Thermal's downtown steam / chilled water distribution system			
Natural Gas	Available to site			

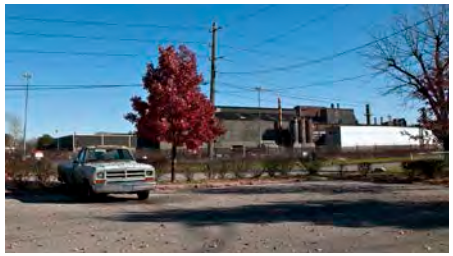
SITE 3 - NAVISTAR FOUNDRY

Site Description

The Navistar Foundry, located at 5565 Brookville Road, is approximately 90 acres and is currently zoned I-4-U. The I-4-U, or Industrial-4 Urban, designation allows the highest intensity industrial uses that are permitted “by right” in the Indianapolis/Marion County Zoning Ordinance and also allows for the industrial uses permitted in the I-1, I-2 and I-3 districts, as well as outdoor storage up to 75% of the lot area.

Examples of permitted I-4 uses include construction equipment manufacturing and storage, manufacturing and processing operations for products such as asphalt, concrete, detergents, lumber, rubber and steel. The I-4 District also allows more intense uses through a Special Exception permit, including coke ovens, foundries, chemical and explosive manufacturing, slaughterhouses, waste transfer stations and salvage yards.

SITE 3: NAVISTAR SITE VIEWS



Site View 1: Navistar plant view looking east.

Site View 2: Navistar plant view looking east.

Site View 3: Naivstar plant view looking north.

Site View 4: Navistar plant view looking southeast toward the foundry.

SITE 3: NAVISTAR NEIGHBORHOOD VIEWS

Neighborhood View 1: Abandoned retail along Brookville Road across from Navistar site.

Neighborhood View 2: Residential land use adjacent to Navistar site.

Neighborhood View 3: Hawthorne rail yard south of Navistar site looking west.

Neighborhood View 4: Older vacant industrial space in the area.

MAP 3.17: NAVISTAR SITE CONTEXT

Parcels

Building Envelope

Site Boundary

Limited Access Roadway

Railroad

MAP 3.18: NAVISTAR ZONING

Zoning Categories

Commercial

Industrial

Commercial-Industrial

Dwelling

Planned Unit Development

Park District

Special Use

Limited Access Roadway

MAP 3.19: NAVISTAR BROWNFIELD SITES

Surrounding Character

As illustrated in Map 3.18, the Navistar site is one of the few industrial uses along this portion of Brookville Road. The site is bordered to the south by an extensive CSX rail switching yard and is surrounded by a mix of residential, commercial, and industrial uses. The majority of the Brookville Road corridor to the north and northwest is developed with residential neighborhoods and a mix of retail commercial uses. Immediately west of the site is a residential neighborhood and south of the site, beyond the rail infrastructure, the area becomes large-lot residential. A small cluster of industrial/contractor operations are located on Lexington Avenue southeast of the site.

Future Uses and Relevant Plans

Multiple plans set forth strategies and recommendations for the future redevelopment of the Navistar site. The Warren Township portion of the Indianapolis Insight Comprehensive Plan, adopted in 2005, recommends that the Navistar site maintain a “General Industrial” land use. According to the plan, General Industrial is characterized by intensive uses that may include outdoor storage or operations that produce intense emissions of light, odor, noise, or vibration.

The Irvington Innovation Zone Revitalization Master Plan, completed in 2011, addresses a large area encompassing the Navistar site and suggests that the area may not continue to have a focus on traditional manufacturing. Instead, the plan suggests that the area’s location and workforce may support a future transition to high technology manufacturing, logistics, or life sciences in coordination with Community East Hospital. This plan highlights the need for infrastructure investments and streetscape improvements, as well as the revitalization of deteriorating industrial and commercial areas. With regard to the Navistar site, the Irvington Innovation Zone Master Plan recommended that the community partner with Pure Power Technologies (current occupant of Navistar site and Navistar subsidiary) to renovate and improve the site and surrounding public infrastructure.

Barriers to Redevelopment

- For the short-term, redevelopment is impacted by the existence of leases for engine plant assembly equipment, which remains in the building.
- Navistar remains the effective owner of the plant.
- Further study of Brookville Road, as well existing neighborhood streets that connect Navistar with the Ford/Visteon plant may be needed as part of future redevelopment planning for the area.
- Better connections to the CSX Hawthorne Yard would need to be evaluated.

	Navistar Foundry Parcel	Navistar Engine Plant Parcel	Parcel 2	Parcel 3	Parcel 4	Parcel 5
General Information						
County / City	Marion County / City of Indianapolis	Marion County / City of Indianapolis	Marion County / City of Indianapolis	Marion County / City of Indianapolis	Marion County / City of Indianapolis	Marion County / City of Indianapolis
Township	Warren	Warren	Warren	Warren	Warren	Warren
Land Area	75.91310836		4.955188246	5.040472911	4.289623508	0.955073462
Improvements Description	Improvements include the existing foundry (still in operation), as well as the recently closed engine plant. Reported square footage is in excess of 1.2 million square feet*.		Vacant - surface parking	Vacant - surface parking	Vacant - surface parking	small building, owned separately by Navistar, Inc.
Parcel Size	Roughly triangular		Square			Small / generally square
Address	5565 Brookville Road		700 S Irvington Ave	5400 E Gifford Ave	5400 E English Ave	5955 Brookville Rd
General Site Description	Generally flat site with a long history in industrial use					
Access	The property has good access, with Brookville Road providing connectivity to the interstate system.					
Visibility	Good Visibility from Brookville Road					Property sits in the southwest quadrant of Brookville Road and Arlington Avenue
Topography	Generally flat					
Land Use Adjacencies	CSX Hawthorne rail yard to the south, varied commercial businesses along Brookville Road, with residential areas to the north					
Flood Plain	These properties do not appear to be delineated in flood plain maps					
Ownership	International Harvester / Navistar		International Harvester / Navistar	International Harvester / Navistar	International Harvester / Navistar	Navistar Inc.
Zoning	I - U - 4 Heavy Industrial		I -U - 4 Heavy Industrial	I -U - 4 Heavy Industrial	I -U - 4 Heavy Industrial	I -U - 4 Heavy Industrial
Adjacent Property Zoning	The Navistar site is one of the few industrial uses along this portion of Brookville Road. The majority of the corridor supports commercial use. Residential areas are generally zoned D-5.					
Tax Parcel Numbers	7003982 / 49-10-10-186-015.000-701		7010343 / 49-10-10-186-003.000-701	7012783 / 49-10-10-186-004.000-701	7012857 / 49-10-10-186-010.000-701	7036016 / 49-10-10-187-002.000-701
2013 Gross Assessed Value	$10,386,100		$103,500	$113,000	$97,900	$248,100
2012 Gross Assessed Value	$13,441,400		$166,500	$177,800	$149,500	$231,100
2013 Taxes Paid	$364,230		$4,221	$5,717	$4,687	$8,101
2012 Taxes Paid	$440,687		$5,985	$5,577	$8,135	$7,162
Rail Access	Site has rail access, and is adjacent to CSX Hawthorne Yard. Rail service has reportedly not been used in several years					

	Navistar Foundry Parcel 1	Navistar Engine Plant Parcel 2	Parcel 2	Parcel 3	Parcel 4	Parcel 5
Historical Context	Following broader economic difficulties, and after selling off the agricultural implement side of the business, International Harvster became Navistar International in 1986.					
Traffic Counts	An estimated 20,000 cars per day travel along Brookville Road (2012 estimate)					
Impervious Surface Calculation	2,840,667 SF	91,412 SF	211,368 SF	156,531 SF	6,276 SF	Missing
Notes 1	The foundry continues to cast iron / compacted graphite iron engine blocks. A significant amount of assembly line equipment remains installed in the engine plant. There is a general understanding that the leases on this equipment will come due in the near-term.					
Environmental Status						
Status	The IDEM public file for this site includes RCRA, UST/LUST, Air permitting and compliance, emergency response, and NPDES along with files from the Indianapolis Department of Public Works (air compliance). Most of the documents in the public file are typical periodic reports required as part of air permit programs used to administer the site. Reviews of the IDEM LUST database and the IDEM Spill Response database confirm that all incidents pertaining to this site in these repositories have been resolved and no further action is warranted. Potential environmental concerns at this site are limited to the following. A foundry waste classification effort conducted in 2012 addressed four waste streams. Three of these waste streams were classified by IDEM as appropriate for disposal at a landfill permitted to accept "Type III" restricted waste. The fourth waste stream was not classified owing to variation in the character of the waste. It is not clear from the documents reviewed how this waste stream is/was disposed. Violations were recorded during an inspection conducted by the IDEM Office of Air Quality in August 2012. Based on inspection documentation reviewed in the public file, it is understood that IDEM initiated enforcement action as a consequence. No further documentation of the enforcement action was found in the public file. Therefore, the status of the violation conditions and the enforcement action are not known. Based on review of the documents available, potential environmental exposure risks are evident at this site. Additional documentation likely exists to clarify or resolve the concerns about waste classification and disposal, and the enforcement item as identified herein. Sampling and analysis of subsurface soil across the western portion of the site is recommended as a means of evaluating current conditions in this area.					Unclear environmental situation
Utilities						
Electricity - transmission voltage	138K transmission line feeding 1 substation with 2 transformers	34 KV transmission line feeding 1 substation, with 3 transformers	Related			Unclear power requirements
Electricity - Sub-Station to Plant	2 - 13 KV lines serve foundry, one per transformer	3 - 4KV line into plant, 1 per transformer				
Electricity - Max Load	30 MW	8-10 MW idling				
Sewer	Available to site					
Water	Available to site					
Steam / Chilled water	Not available					
Natural Gas	Available to site					

SITE 4 - FORD/VISTEON PLANT

Site Description

Located at 6900 English Avenue, the Ford/ Visteon site is approximately 147.8 acres and is currently zoned Industrial Suburban (I-3-S). The I-3 zoning designation is defined as medium intensity industrial. The I-3 allows outdoor storage up to 50 percent of the lot area. Examples of uses permitted in the I-3 zone include automotive and other vehicle manufacturing plants, industrial bakeries, granaries, power plants, and tool and die operations. In addition, the I-3 District allows accessory or incidental I-4 uses, limited to 25% of the gross floor area of the site's buildings. The S/ Suburban designation requires greater setback.

SITE 4: FORD/VISTEON SITE VIEWS

Site View 1: Ford/Visteon site view from English Avenue looking north.

Site View 2: Ford/Visteon site view from English Avenue looking northeast.

Site View 3: Ford/Visteon site view from English Avenue looking east.

Site View 4: Ford/Visteon site view looking east.

SITE 4: FORD/VISTEON NEIGHBORHOOD VIEWS

Neighborhood View 1: FedEx Distribution Center directly west of the site.

Neighborhood View 2: Railroad crossing proximate to Ford/Visteon site.

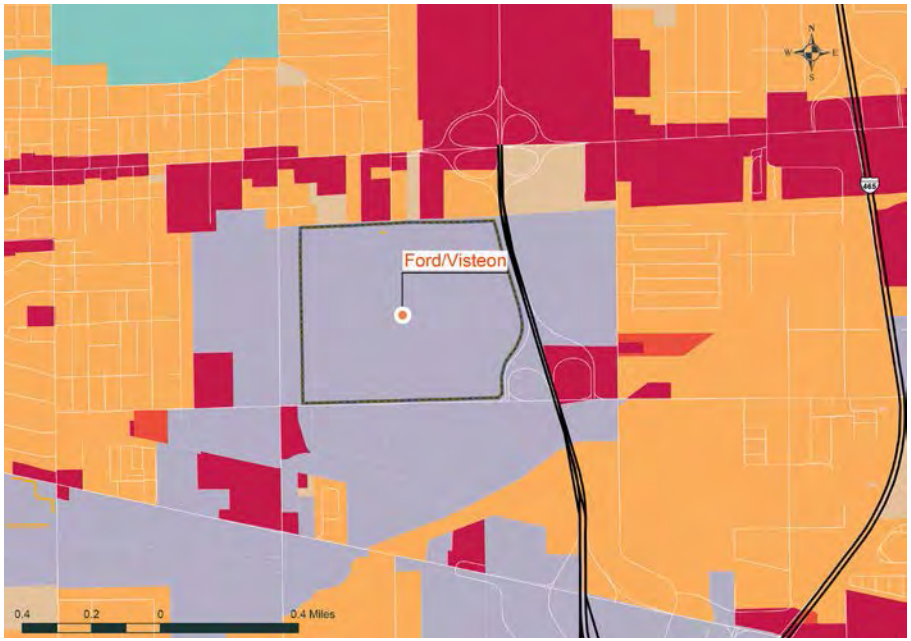
Neighborhood View 3: Residential land use proximate to Ford/Visteon site.

Neighborhood View 4: Commercial uses at Irvington Plaza shopping center proximate to Ford/Visteon site.

MAP 3.24: FORD/VISTEON SITE CONTEXT

- Parcels
- Building Envelope
- Site Boundary
- Limited Access Roadway
- Railroad

MAP 3.25: FORD/VISTEON ZONING



Zoning Categories

- Commercial
- Industrial
- Commercial-Industrial
- Dwelling
- Planned Unit Development
- Park District
- Special Use

- Limited Access Roadway

MAP 3.26: FORD/VISTEON BROWNFIELD SITES

State Cleanup Sites

Underground Storage Tank

Voluntary Remediation Program

Limited Access Roadway

Railroad

Surrounding Character

As illustrated in Map 3.25, the area immediately surrounding the Ford Plant is largely industrial in character, with residential uses a few blocks beyond the site and primarily commercial uses along Washington Street to the north. The industrial uses proximate to the Ford/Visteon site include a number of warehouse uses, as well as more intense scrap metal operations (automotive and non-automotive) to the south and east.

The Pennsy Trail to the north separates the site from developments oriented toward Washington Street, consisting of commercial, institutional, residential, and semi-industrial uses. The site is bordered to the east by Shadeland Avenue and Interstate 465. East of Shadeland is an industrial dairy and some small-scale industrial/contractor operations. In addition to the industrial dairy to the east, multiple industrial food production operations are active south of the Ford/Visteon site, which offers a potential opportunity for a food manufacturing economic cluster. The site is also bordered to the south and east by rail lines, with a rail spur along the western edge of the site.

Future Uses and Relevant Plans

Multiple plans set forth strategies and recommendations for the future redevelopment of the Ford/Visteon site. The Warren Township portion of the Indianapolis Insight Comprehensive Plan, adopted in 2005, recommends that the Ford/Visteon site maintain a General Industrial use. According to the plan, General Industrial is characterized by intensive uses that may include outdoor storage or operations that produce intense emissions of light, odor, noise, or vibration.

The Irvington Innovation Zone Revitalization Master Plan, completed in 2011, addresses a large area encompassing the Ford/Visteon site and suggests that the area may not continue to have a focus on traditional manufacturing. Instead, the plan suggests that the area's location and workforce may support a future transition to a high technology manufacturing, logistics, or life sciences in coordination with Community East Hospital. In addition to the general site-wide recommendations for infrastructure and streetscape improvements, the plan outlines recommendations specific to the Ford/Visteon site. The plan recommends the redevelopment of the site into an industrial and/or distribution park. A conceptual redevelopment plan was prepared, proposing over 2,000,000 square feet of industrial use and estimates demolition and remediation costs of approximately $20-40 million.

Barriers to Redevelopment

With a future that is likely to remain in industrial use, the main questions for this site relate to the potential need for better connections to Shadeland Avenue, as well as improved connectivity with Brookville Road.

Ford/Visteon Parcel 1

General Information

County / City	Marion County / City of Indianapolis
Township	Warren
Land Area	147.81
Improvements Description	Generally rectangular industrial building covering a reported 1.7 million square feet of space. There are expectations that the existing building will be demolished, possibly in 2014
Parcel Size	Generally rectangular
Address	6900 E. English Avenue
General Site Description	Generally rectangular parcel, with a recent history of industrial use
Access	Site has access onto English Ave. and Kitley Ave. Shadeland Avenue provides direct connectivity to the regional interstate system
Visibility	The property is visible from Shadeland Avenue, as well as adjacent streets
Topography	The site is generally flat
Land Use Adjacencies	Industrial uses are predominant to the west and south. Uses to the north, across the Pennsy Trail, is commercial and residential. To the east, across Shadeland Avenue, land use includes both industrial and residential uses.
Flood Plain	The site does not appear to be in a defined flood plain area
Ownership	Automotive Components Holdings LLC (ACH) / Ford Motor Company
Zoning	I - 3 - S Medium Industrial
Adjacent Property Zoning	Primarily industrial in character, with several food processors, warehouses, as well as scrap metal operations. Zoning classifications vary from C-S to I-4-U
Tax Parcel Numbers	7003466 / 49-10-11-115-001.000-770
2013 Gross Assessed Value	$6,912,800
2012 Gross Assessed Value	$21,902,100
2013 Taxes Paid	$245,886
2012 Taxes Paid	$2,301,118
Rail Access	Yes - Spur

Ford/Visteon Parcel 1	
Historical Context	Reports indicate that ACH was established by Ford as a temporary business structure to hold and manage several assembly plants that were acquired from Visteon in 2005.
Traffic Counts	Roughly 8,000 cars per day estimated for English Avenue, in front of the plant
Impervious Surface Calculation	3,991,372 SF
Environmental Status	
Status	The IDEM public file for this site contains approximately 132 documents, representing RCRA, UST/LUST, Air permitting and compliance, emergency response, and NPDES. Files from the Indianapolis Department of Public Works (air compliance) also are contained therein. Based on information provided in the documents reviewed, all matters administered and recorded in this public file have been resolved and no further action is indicated. As such, this site appears to present no unacceptable environmental risk.
Utilities	
Electricity - transmission voltage	138K transmission line feeding 1 substation, with 2 transformers
Electricity - Sub-Station to Plant	2 - 13KV Lines serve plant, 1 per transformer
Electricity - Max Load	15 MW
Sewer	Available to site
Water	Available to site
Steam / Chilled water	Not available
Natural Gas	Available to site

HIGHEST AND BEST USE IMPLICATIONS

Former Automotive Site Reuse Trends

FastTrack property reuse needs to be understood in a broader context that is defined by a surge in U.S. automotive plant closings between 2004 to 2011, resulting in the closure of about 100 assembly plants nationwide, many of which were more than 40 years old at that time.

The chart below also reinforces the broader reality that since 1979, auto plant closings have been a consistent reality. Over this time period, according to the Center for Automotive Research, out of 267 closures going back to 1979, about 125 sites are being reused.

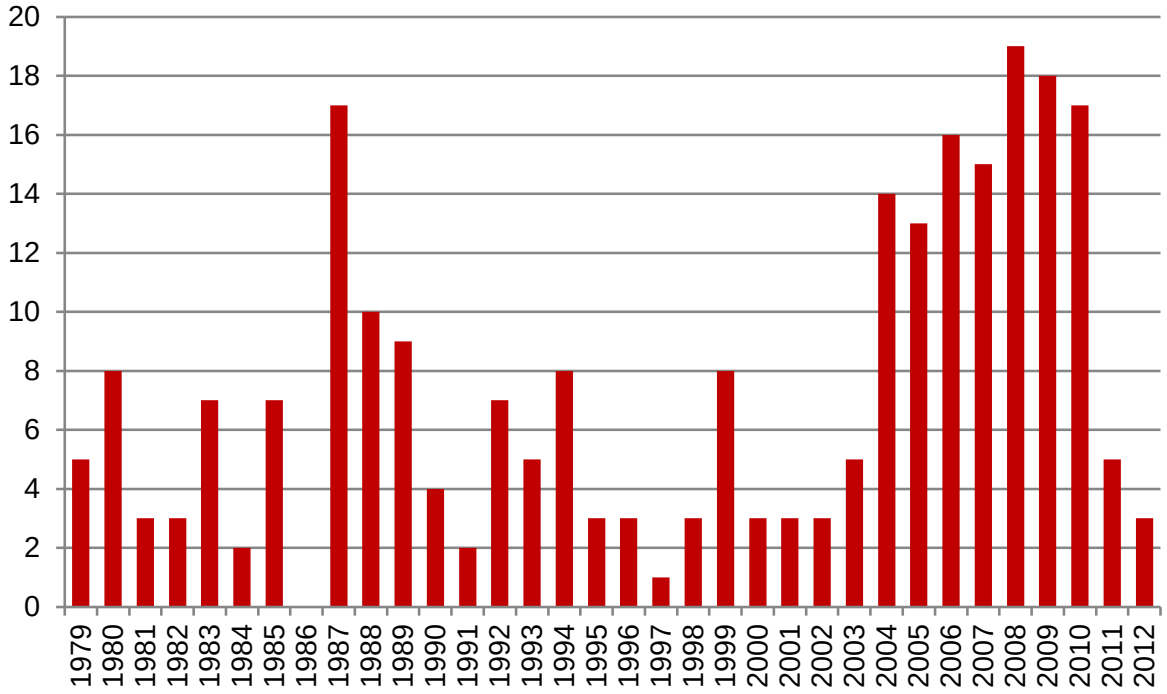
Closure decisions by the "Big Three" automakers over the last 8 years are significant in providing context for what will unfold with the FastTrack sites in Indianapolis in the future.

- In 2006, Ford indicated that they would shutter 14 North American assembly sites, including locations in St. Paul, MN; Wixom, MI; and Atlanta, GA. Other sites identified include properties in Windsor, Ontario; Maumee, Ohio; Norfolk, VA; and Batavia, Ohio. Closures started in 2006 with St. Louis, and will reportedly end in 2013 with St. Paul, Minnesota.
- For properties owned by Chrysler, the closure process was not orderly, with many plants being shut down too quickly. In St. Louis, for example, the truck plant needed to be "re-opened" for a short period soon after the bankruptcy, as partially assembled vehicles needed to be finished to complete existing orders. As part of the bankruptcy, Chrysler closed two plants in St. Louis, along with sites in Sterling Heights, MI; Kenosha, WI; Detroit Axle, MI; Conner Avenue, MI; and Twinsburg, OH.
- For General Motors, the bankruptcy resulted in more than 89 sites and over 300 properties being conveyed to the RACER Liquidation Trust. Over the past year, this entity has reportedly managed to sell about 30 sites, with another 20 reportedly under contract. For the RACER Trust, a key challenge is the cost of maintaining these assets, which does create pressure for demolition. Interviews suggested that while two GM sites (Pontiac and New Jersey) will have higher value (i.e. non-industrial) futures, the majority of sites will remain in industrial use.

Insights from other U.S. plant closures associated with Ford are as follows.

In 2013, the 294-acre Chrysler site that had supported two assembly plants (closed in 2009) in St. Louis was conveyed to KP Development. The deal will go through an extended due diligence effort, with final conveyance expected by the end of 2014. While precise terms of the deal were not disclosed; the request for incentives was reportedly greater than the purchase price for the asset. Distribution and manufacturing are the anticipated highest and best uses.

US Automotive Plant Closures, 1970 to 2012



Source: Center for Automotive Research

HIGHEST AND BEST USE IMPLICATIONS

The 160-acre Ford site in St. Louis (closed in 2006), has since been conveyed to Panattoni construction. The site has been re-branded as Aviator Business Park; the existing plant was demolished. The company announced their first new development on the site in 2013, with the contract to build a 277,000 SF build-to-suit plant for International Food Products Corporation. The move was a consolidation for the company, moving from two small sites to one larger one.

The Ford St. Paul site is unique, with a location adjacent to existing residential neighborhoods, and along the Mississippi River, not dissimilar to the GM Stamping Plant in Indianapolis. For this site, Ford is working through remediation efforts, even as it positions the site for sale to a third party. The City of St. Paul still retains zoning control over the site. Given the sensitive nature of the location, Ford and the City of St. Paul funded a master planning effort to build consensus around reuse concepts for the site. While the site is still owned by Ford and no zoning changes have been made, there is an expectation that mixed use will be the likely outcome, with density being the main concern of local residents.

Other U.S. auto plant closures include the following:

- Former Visteon Systems LLC Plant, Connersville, IN: The former 1.8 million sf plant, which employed over 3,000 during the late 1990's, was purchased in 2013 from the City of Connersville by a cabinet maker, Wayzata Home Products. The building had previously been proposed for Carbon Motors, a company that had planned to assemble law enforcement vehicles.
- Former Ford Plant, Atlanta Georgia: This 122-acre site enjoys a notable location adjacent to Atlanta's Hartsfield International Airport. After closure in 2006, the site was acquired by Jacoby Development in 2008, and has been re-branded as "Aerotropolis Atlanta". The overall reuse framework is "mixed use"; the project's first tenant is Porsche's North America headquarters.
- Former Chrysler Assembly, Newark, Delaware: This site was acquired from Chrysler soon after the 2008 closure by the University of Delaware for a new science and technology campus. Demolition of the existing plant began in 2010.
- Former Delphi Fuel Injector Plant, Coopersville MI: Following closure in 2006, the 300,000 square foot plant was sold for $4.4 million to a dairy. Incentives were part of the deal, reportedly including improvements to the local wastewater treatment plant.
- Former Ford Transmission Plant, Batavia OH: Following closure, the 1.9 million square foot plant was sold to a developer (IRG) for a reported price of $3.5 million. The reuse plan is focused on the adaptive reuse of the building for multi-tenant use.

U.S. auto plant redevelopment scenarios generally follow two trajectories:

1. Adaptive reuse of existing buildings
2. Demolition of existing improvements and redevelopment

U.S. auto plant redevelopment projects have focused on "mixed use", which has tended to include high density, higher education, residential, retail, office, warehouse and service uses. Many projects are redeveloped in this way because of high redevelopment costs; one way to mitigate cost premiums is to significantly increase the density of uses, which drives increased value and income potential. The following challenges are associated with adaptive reuse of industrial buildings:

- The advanced age, generally poor condition, and obsolescence of these structures; specific factors include lower ceiling heights and older, inefficient mechanical systems.
- Industrial buildings built for a specific use have proven to be less adaptable to multi-tenant configurations, due in part to the configuration of existing buildings and the location and number of truck docks; modern, multi-tenant industrial buildings tend to be longer and more narrow.
- Funding maintenance, security and utilities costs for larger vacant buildings (> 1 million square feet) can be prohibitively expensive, which becomes a specific reason why demolition is encouraged.

Adaptive reuse scenarios for existing buildings typically focus on smaller scale industrial and distribution uses, where the buildings are subdivided, modestly renovated, and rented at lower prices to boost market response. The challenge with lower rents is that these assets are already older, and therefore tend to face higher repair and maintenance costs. Particularly for larger buildings, the owners also face the challenge of operations and maintenance costs for vacant space. Successful re-leasing strategies tend to focus on interim re-leasing, combined with strategies to replace older / obsolete buildings with new structures over a 10 to 15-year period.

HIGHEST AND BEST USE IMPLICATIONS

Related to vacant industrial sites, the following challenges occur:

- Foundation slab removal costs and contingent liabilities associated with undefined sub-surface contamination, along with practical aspects of how to reuse existing footings for new buildings.
- Older industrial sites were often situated in residential neighborhoods, further away from interstate access, impacting marketability for industrial reuse.
- For sites were configured for single-user access, reconfiguring for mixed use requires considerable infrastructure investment to create new road alignments and to install appropriate storm and sanitary sewers.

Former manufacturing sites are encumbered by older infrastructure, even if the sites are in attractive locations. In most cases, the underlying infrastructure, including streets and sewers is old / obsolete and in need of replacement.

Opportunities can link with:

- Access to robust electrical power grids, aligned with solar power generation.
- Access to rail infrastructure, either for storage of rail cars or intermodal concepts.

Older manufacturing sites can provide cities with unique opportunities to reclaim larger infill tracts of land (25 to 150 acres) for new industrial or mixed use development. Projects have been used as movie studios, sports stadiums, and stand-alone-destination retail projects. Many of these projects are driven by unique local factors.

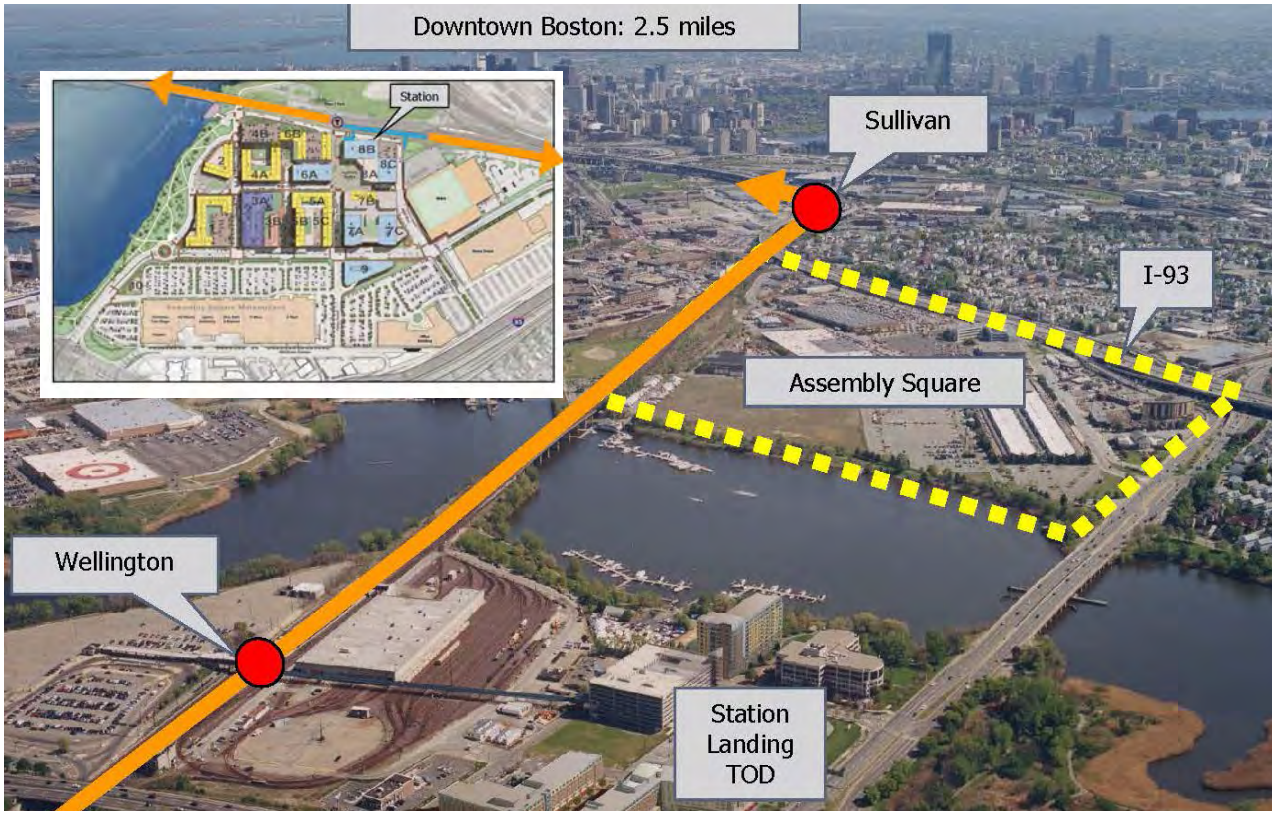
Sites with slabs in place have been targeted for intermodal and logistics development. Buick City in Flint, Michigan is an example of this idea, which has been discussed for years, but not implemented. Projects have benefited from considerable public infrastructure reinvestment to encourage redevelopment.

One factor that has worked against adaptive reuse is the price of scrap steel, which has motivated owners to demolish their improvements. AECOM argues that demolition of improvements can be a net gain for the owner if foundation slabs are left un-touched.

There is a third tier of older manufacturing sites which, either due to extensive remediation issues or market forces, will remain vacant for many years. For these sites, strategies linked with installation of ground-based solar panels need to be given consideration, in part as a funding strategy to facilitate long-term remediation of brownfield conditions.

Former Ford Assembly Plant, Somerville, MA

Another example concerns the reuse of a former Ford assembly plant in the Town of Somerville, adjacent to the City of Boston. The 143-acre plant had closed in 1958, reportedly due to the market failure of the Ford Edsel. The site is now known as Assembly Square, and sites adjacent to downtown Boston and I-93, on the Charles River. A commuter rail line also crosses the site as well. The reuse plan for this property took many years to move forward. In 1979, the former auto plant was converted into a shopping mall, anchored by Kmart and Jordan Marsh; Home Depot opened a store in the 1990's as well. Following several retailer closures, Federal Realty Investment Trust (FRIT) purchased the mall and other property, in 2005. The second and more ambitious element of Assembly Square is a higher density transit-oriented development, for which planning started in 2006, with ground-breaking in 2012. The project is anchored by construction of a new MBTA train station, around which there are current plans to build 2,100 housing units, 500,000 square feet of retail (plus Ikea), 1.75 million square feet of office space, and a hotel. Phase I includes construction of the new station, as well as 450 housing units and a retail project.



Ogden Army Depot, Salt Lake City, UT

The former Ogden Army Depot, north of Salt Lake City, Utah is one example of a reuse plan that started with adaptive reuse, and will end in the future with new construction of industrial space. The reuse plan for this closed installation initially called for modest renovations and re-leasing of over 5 million square feet of existing warehouse space spread over a 1,400-acre site, with incremental plans to replace existing infrastructure and old buildings with new, modern distribution space. The project was driven by a unique partnership between a local redevelopment authority and a developer (Boyer), with a redevelopment agreement that required both parties to reinvest proceeds to fund infrastructure for the first seven years of the project. Since the property was conveyed to the local redevelopment authority (LRA), about 860,000 square feet of new industrial space has been developed. Applicability of the Ogden Army Depot scenario to Indianapolis is limited by two points:

1. The existing depot was developed as a series of smaller buildings, making incremental reuse realistic, as individual buildings could be "turned off" if not occupied.

2. As with many military reuse strategies, the military remained on site as a rent paying tenant, allowing the LRA to ease into the reuse plan over time.

LOCAL INDUSTRIAL MARKET PERSPECTIVE

With FastTrack emphasizing deliberate strategies to grow manufacturing in Marion County, it was important to evaluate the current industrial market realities across Marion County and the larger Central Indiana Region. The analysis is based on:

- Industrial market data reported by COSTAR
- Interviews with local real estate brokers,
- Evaluation of annual real estate market reports

Importantly, as real estate brokerages each use slightly different definitions for space, their respective views regarding inventory and vacancy will all differ slightly.

Between 1984 and Q3 of 2013, Central Indiana has seen construction of an average of about 4.7 million square feet of industrial space built per year. The pace of regional industrial construction has picked up since 2011. At the same time, Marion County has seen a decreasing share of regional industrial development, particularly since 2000, when the county's share of annual construction dropped below 50%. That this trend has unfolded is not a surprise, as a larger share of very large distribution buildings have been built in suburban counties since that time, linked with lower land costs and a requirement for larger 25 to 50 acre sites to support larger distribution centers.

Changes in industrial vacancy and growth in occupied inventory for Central Indiana and Marion County provided different views of industrial market performance. Overall vacancy levels for Marion County have steadily improved since 2006, from levels approaching 9% down to an estimated 2013 level of about 7%. Vacancy levels have dropped more dramatically across the Central Indiana Region, from over 9% in 2010 to about 7% in 2013.

For Marion County, the reader should appreciate the nuanced impact of the FastTrack properties, particularly GM, Ford and Navistar. Although these sites account for about 4.9 million square feet of space, when held in comparison with the total amount of space in Marion County (177.8 million square feet) the FastTrack sites account for a modest 2.7% of county-wide inventory. At a regional level (307.5 million square feet), the FastTrack sites account for about 1% of inventory.

Annualized percentage growth trends for occupied industrial space are notable, with Central Indiana demonstrating stronger growth in occupied space, year over year, compared to Marion County. The chart shows that Marion County has lagged the region in percentage growth every year since 2003.

In terms of overall growth in occupied inventory, between 2002 and 2013, Central Indiana grew occupied inventory at a 1.6% annualized rate, compared to Marion County, which added occupied inventory at a 0.4% annualized rate.

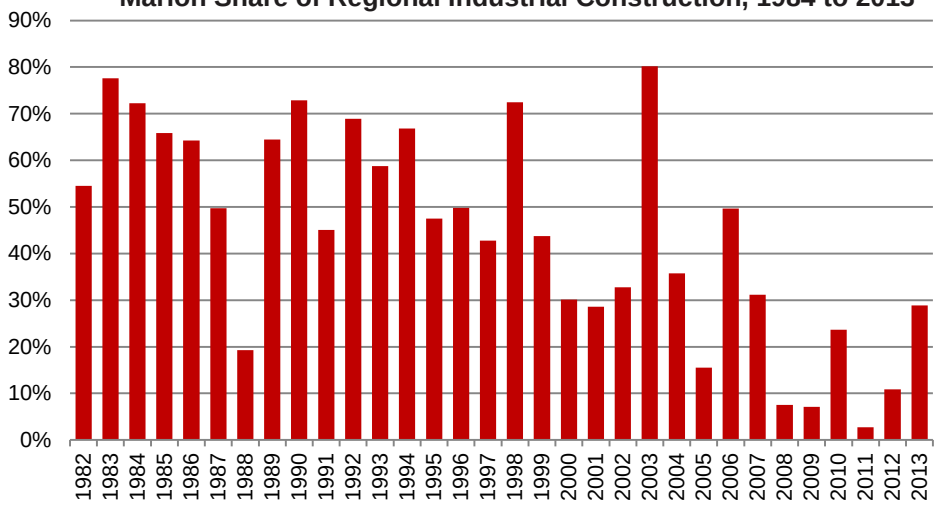
Within the loss in industrial inventory share for Marion County, the precise amount of land that has been developed for industrial use has been trending downward at a significant pace since 1995, when over 350 acres were developed per year in that decade, according to COSTAR. While trends since 2005 are heavily impacted by the recession, the trend from 2000 to 2004 points to an annualized pace of absorption of about 200 acres per year. Importantly, looking back to 1960, the average annual pace of industrial land absorption for Marion County was about 172 acres per year, suggesting that performance from 2000 to 2004 was more typical of the long-term average.

The 172-acre average is important for two reasons:

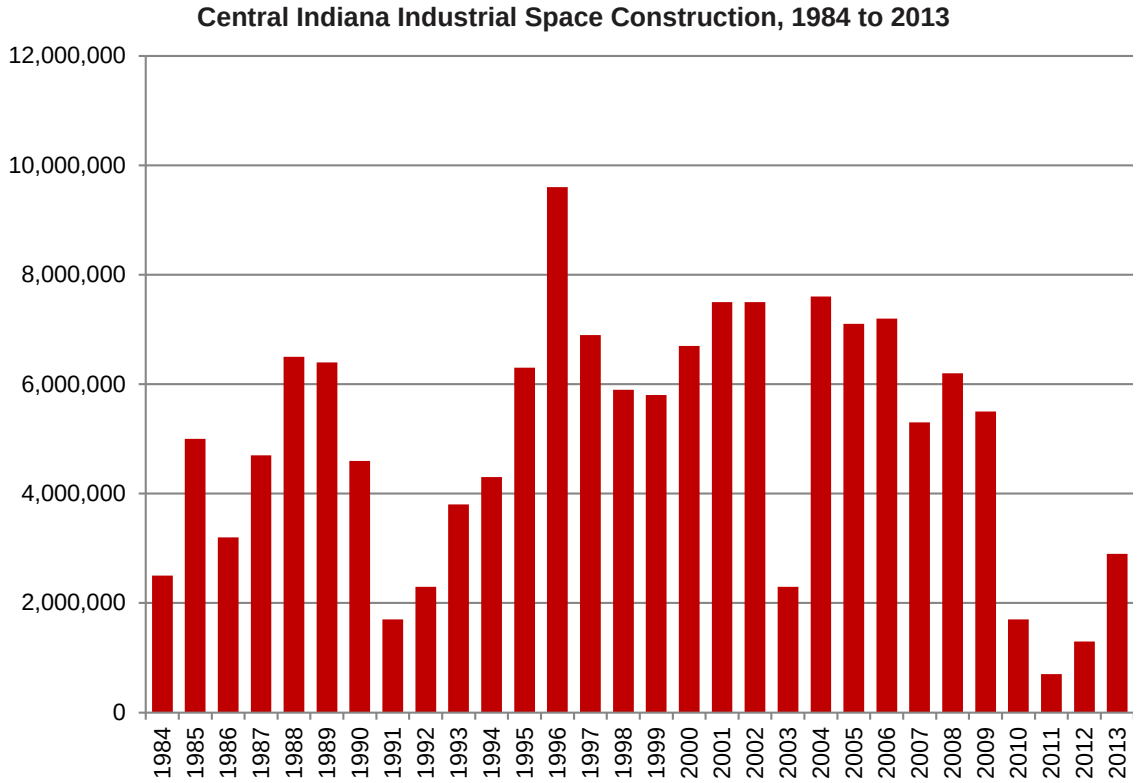
1. There is concern that across Marion County, there is an insufficient number of vacant, ready to go industrial sites that are available to support new development. Interviews reinforced a real concern about a lack of larger development sites.

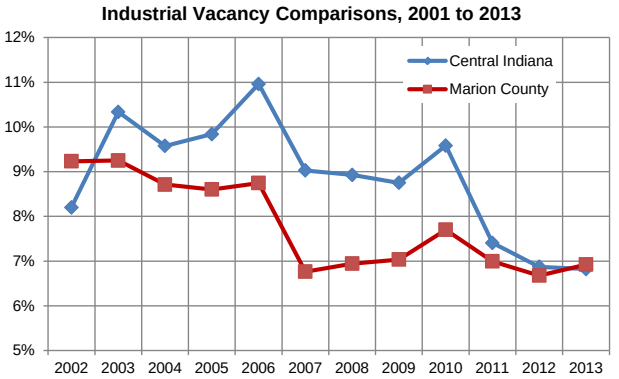
2. Presuming that Marion County's industrial market recovers toward 100 to 150 acres of absorption per year, the industrial FastTrack Sites (Navistar, Ford, and Chrysler) would represent three to five years of demand. As such, there is a broader need to identify a larger pool of sites that can be prepared for future industrial use.

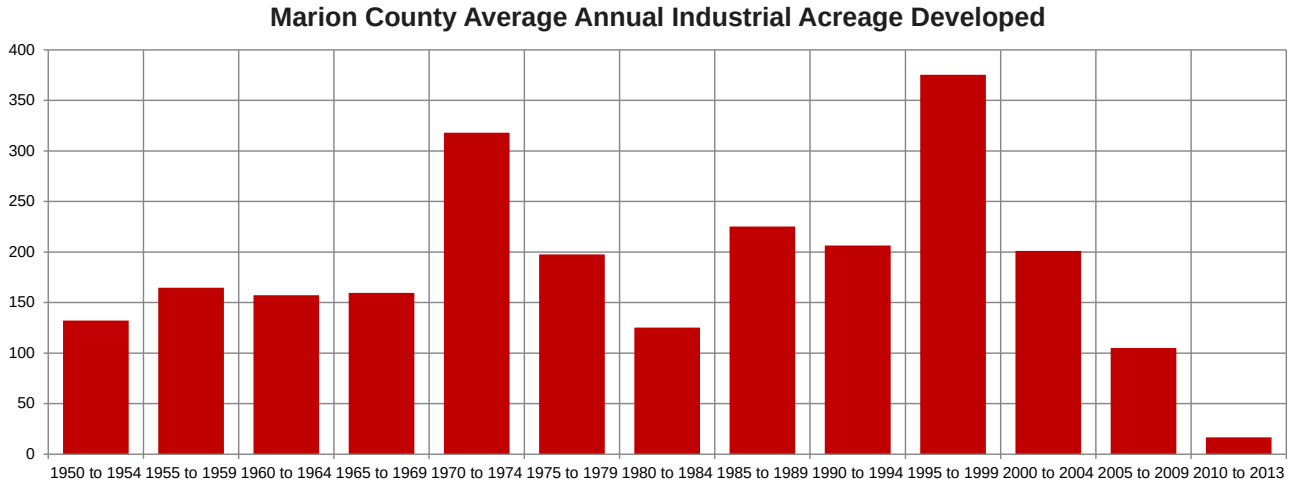
Marion Share of Industrial Construction, 1984 to 2013
Marion Share of Regional Industrial Construction, 1984 to 2013

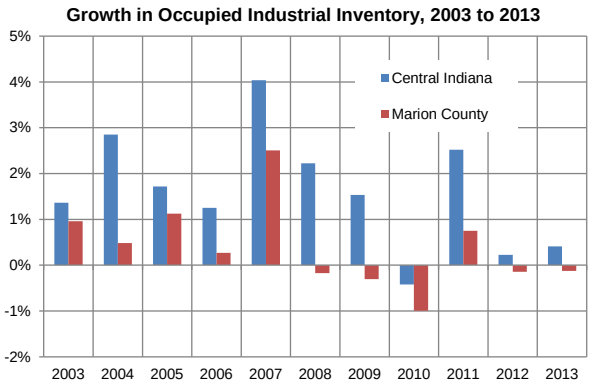


LOCAL INDUSTRIAL MARKET PERSPECTIVE, COSTAR





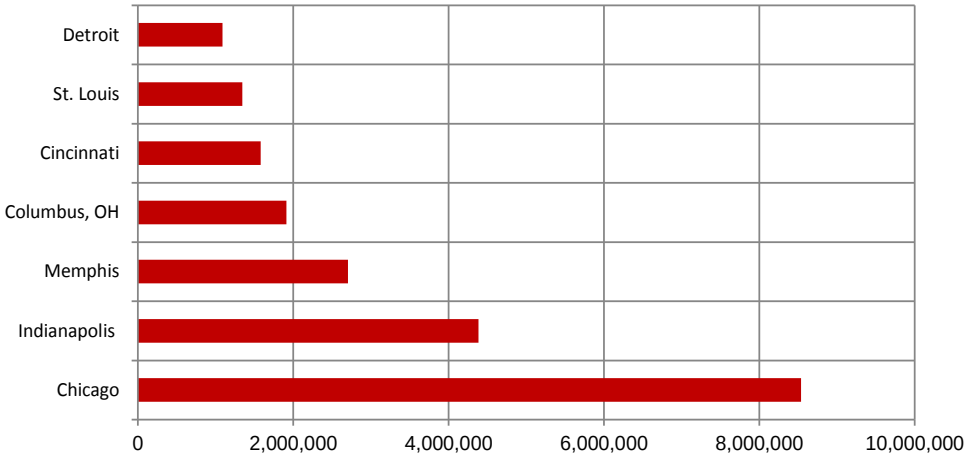




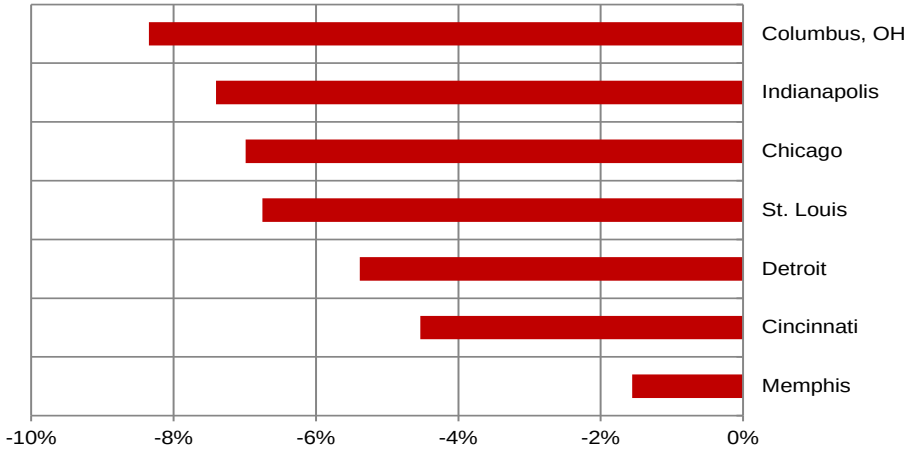
MIDWESTERN INDUSTRIAL MARKET PERSPECTIVE

The following charts provide perspective regarding broader industrial market comparisons between Indianapolis (Central Indiana) and other noted Midwestern metro areas. The charts compare current industrial market vacancies, the percentage rate of recovery in vacancy since 2009, and net average annual absorption of industrial space since 2003. The charts reinforce the reality that industrial markets are recovering across Indianapolis at a relevant rate, with an enviable current vacancy level (just above 7%), lower than markets such as Memphis or Chicago. Perhaps most important is the pace of net absorption since 2003. Despite being a smaller metro, Indianapolis has delivered strong net increases in occupied industrial space. These trends reinforce the important role that logistics plays in the regional economy.

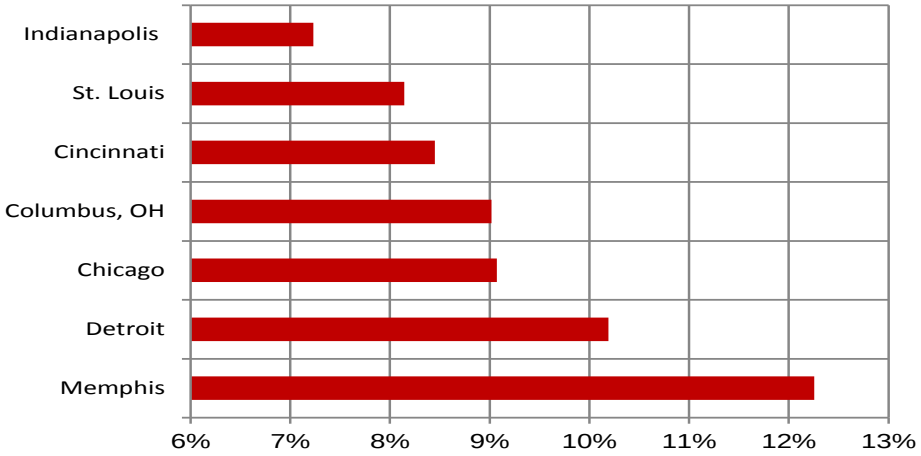
Average Annual Net Industrial Space Absorption, 2003 to 2013



Percent Rate of Improvement in Vacancy Since 2009



Q3 2013 Industrial Vacancy, Noted Metros



HIGHEST AND BEST USE INTERVIEW INSIGHTS

Stakeholder engagement for Indy FastTrack included interviews with organizations related to the discussion of highest and best use for the FastTrack sites. Interview comments were synthesized based on AECOM experience. The following insights were noted for each site, and in general.

Ford Site

While job losses at Ford and Navistar totaled about 7,000 jobs, interviews suggested that over time, an increasing share of plant employees did not reside in the Irvington area, mitigating what otherwise would have been a significant negative impact on the community. At the same time, across the Irvington area, there are a number of "ragged edges" around the periphery of the neighborhood, relating to housing conditions and apparent poverty.

Linked with Navistar as well, the Irvington Innovation Zone was frequently discussed. Concern was raised about the extensive geographic extent of the proposed zone, as well as the apparent need to refocus the organization within a viable geography. The 501C3 status for the zone had not been finalized as of the fall of 2013. Other organizations are active in the Irvington / greater East Side area, and appear to be making a difference, including the Irvington Development Organization (a Main Street program) which has achieved relative success in redevelopment in the Irvington area.

Adjacent industrial buildings appear to be sustaining reasonable occupancies and a concentration of food production businesses is developing in proximity to two key redevelopment sites:

1. Irvington Plaza
2. Former Eastgate Mall

The Ford site is bordered to the north by a new rails-to-trails connection called the "Pennsy". While this trail does not yet connect into the downtown core of Indianapolis, there are plans to do so.

Potential influences of the Indianapolis Speedrome were noted. Interviews suggested that this attraction, which had a "for lease" sign on display during 2013, has a strong historical following, as well as a less certain future.

The Ford Site's connectivity and physical proximity to other industrial assets along Shadeland, including Western Select and Shadeland Commerce Center is important. This corridor has been important for manufacturing since the 1950's, with deeper historic ties to the National Road as well.

Interviews discussed the idea of how enhanced connections between the Navistar and Ford Sites would aid reuse of both properties. Existing streets, particularly English Avenue west of Kitley Avenue, are quite narrow and appear ill-suited to sustain truck traffic.

Navistar

Pure Power Technology is currently using the foundry portion of the building to fabricate engine blocks. The Foundry was reportedly operating at about 20% of capacity early in 2013, and trying to compete for new engine block business outside of Navistar.

The Navistar complex includes a roughly 1.1 million-square-foot Engine Plant that was idled in 2009. The engine plant assembly line operating equipment is still reportedly under lease. The lease is expected to come due in the near-term, at which point reuse questions for the entire building will come to the forefront. While the Engine Plant has lower clear ceiling heights, the building seems to have been well maintained by Navistar. The existing roof structure provides an abundance of natural light.

Given the massive number of U.S. plant closures over the last 10 years, that the foundry has remained open throughout the recession is notable. Interviews also suggested that one factor that could theoretically lead to closure of the foundry are anticipated emissions rule changes from USEPA.

In the fall of 2013, Navistar corporate made personnel changes at the plant, possibly asserting greater control over the operation. Observations suggest that the number of tractors parked on the southern end of the plant has also increased over the past 12 months. Navistar and Pure Power employees could not comment as to the nature of changes that seem to be unfolding at present. When the Foundry was operating at higher capacity, the plant had a rail connection to the adjacent CSX Hawthorne Yard. The rail spur is still in place, but is not used at present.

There is a broader level of sensitivity about the Navistar site, which has benefited from local and state incentives several times in the past. Experience in Boston suggests that similarly designed buildings have been reused for retail power centers. Local market conditions for retail are less certain in the near-term.

HIGHEST AND BEST USE INTERVIEW INSIGHTS

Chrysler Foundry

The Foundry site is one of the first FastTrack properties to have closed (around 2005). It includes several parcels; all of the improvements have already been demolished, leaving the foundation slabs in place. The foundry parcel has been recently conveyed to a demolition contractor, who is using the site for sorting of recyclables and construction debris. Other parcels remain in the ownership of Daimler-Chrysler and other entities (Parts Carnival LLC). These sites are being used for storage of trucks and shipping containers.

The Chrysler site has an excellent location on I-70 (with visibility), sitting half way between downtown and the Indianapolis International Airport. From this perspective, the site was viewed as a long-term strategic opportunity. Truck access along Tibbs Avenue north of the site is impossible, as an existing rail viaduct sits about 10 feet above the pavement.

The area around the site carries a fair amount of truck traffic, linked with a large number of trucking related uses (truck repair facilities, distribution centers, etc.). Impacts of the evolving Eagle Creek Greenway trail improvement plan on the Chrysler site need to be understood. Current land use guidance for the area suggests that while residential areas east of Eagle Creek are likely to be protected, residential areas west of the creek are likely to see pressure / interest in conversion to industrial / service use. There is a residential enclave south of the foundry parcel, which includes smaller single-family homes and a mobile home park.

The site is somewhat influenced by the broader reality that, from a transportation standpoint, the west side of Indianapolis seems to have less north-south regional access. For example, Holt Road essentially stops at W 10th Street. The Indianapolis Motor Speedway also impacts north-south access.

GM Stamping

The RACER Trust is driving the reuse process, for GM and is contractually bound to complete environmental remediation consistent with current zoning, effectively to commercial / industrial standards. They will not seek a rezoning of the site, instead allowing a future buyer to go through an entitlement process. The Trust has indicated that if they cannot find a user by the fall of 2013, the GM buildings would need to be demolished, due to high carrying costs; demolition is expected in 2014.

Environmental concerns are present on / adjacent to the GM site; the western edge of the site appears to be more impacted, linked in part to other properties along Harding Street that have environmental conditions. The residential area south of the plant is impacted by a VOC plume as well. While a new residential loft project on Harding Street is notable, the corridor also includes several older industrial buildings as well as recycling/scrap yards.

Indy GO and the Indianapolis Zoo are significant stakeholders. The Zoo is a significant and successful tourist attraction in the downtown area, and as a result, seems to have challenges with parking. Indy GO is in the midst of planning for new transit projects (contingent on state support) which could influence their need for space in the future.

Other site factors discussed during interviews include the presence of higher ground water levels, as well as the impact of a 500-year floodplain. As well, a portion of GM site sits “in a hole”, 15-20 feet below grade at its eastern edge. GM is one of a small number of sites where a repositioned (cleaner and more accessible) White River would need to be viewed as an asset rather than a liability.

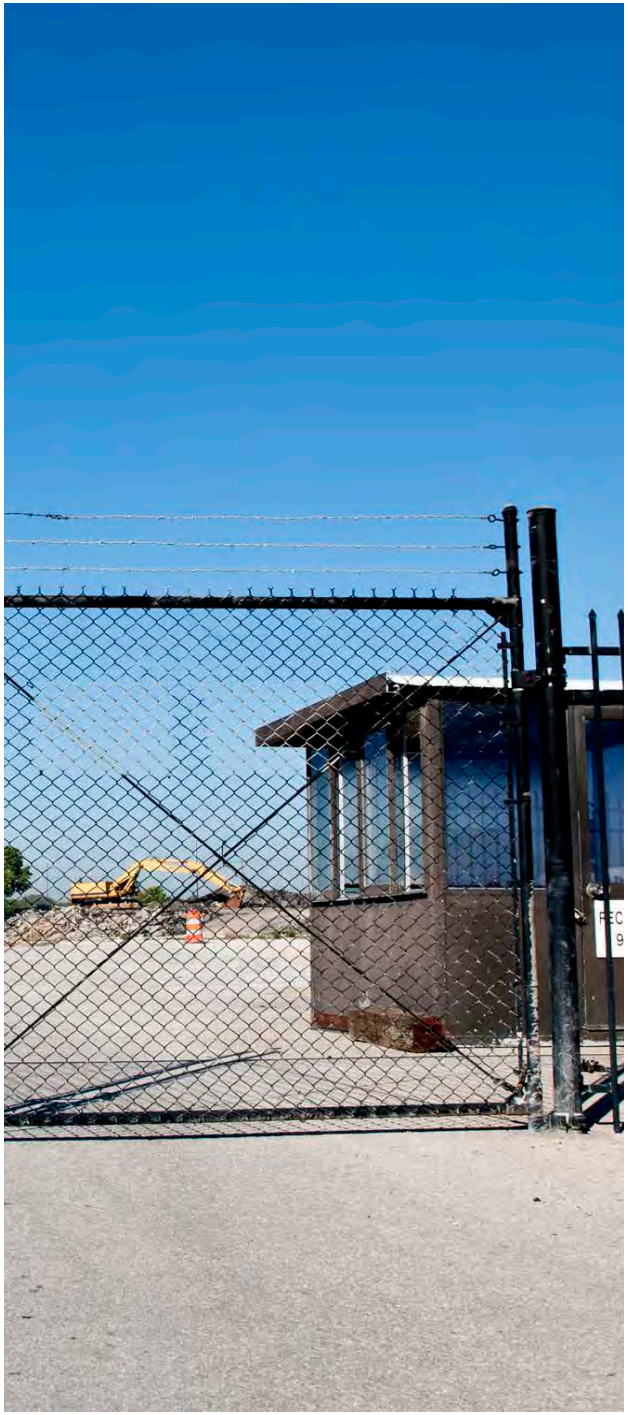
The current combined sewer overflow project includes the Deep Rock tunnel, which is being built under the White River. While current plans reportedly do not include the need for drop shafts on the GM site, easements are reportedly in place to protect the tunnel from encroachment.

The residential neighborhood south of site was generally referred to as “diverse” and “lower income”. Interviews reflected disparate views about this area, with some speaking to existing residents who are long standing, but probably cannot afford to leave, and other views suggesting that the area already has a majority of renter occupied housing units and that some concentration of ownership was suggested.

Interviews suggested that there was minimal pressure for development to jump the river and go west toward the GM site. There was considerable broader discussion about the current surge in downtown housing that is underway, with a reported 3,000 housing units scheduled for completion over the next 2 years.

Three key pieces of transportation infrastructure near the GM site need to be kept in mind. First, the future importance of Harding Street as a "back door" connection from the west side of downtown toward I-70 needs to be considered. Second, the impact of the CSX mainline that traverses the northern side of GM, crossing Harding Street at grade needs to be understood. The Belt Line rail corridor splits off from the CSX main line and runs south, just west of the GM site, crossing Oliver/ Harding at grade. The GM site needs to be viewed in context with the broader issue of whether freight trains should continue to run through the downtown area, or use the Beltline.

The key point regarding these infrastructure assets is that it will be important to not disconnect the GM site from broader debate about CSX and the Belt Line as well as the future of Harding Street as a more significant north-south connection serving the west side of downtown.



Industrial Typology & FastTrack Site Yield Analysis

INDUSTRIAL TYPOLOGY

The typologies reflect a broad array of industrial development opportunities, ranging from small urban manufacturing buildings (30,000 square feet) up to larger suburban distribution and fulfillment centers that cover more than 900,000 square feet of improved space. Site requirements range from 1-2 acres to more than 40 acres.

The following typologies were developed:

- Manufacturing / Wholesale
- Flex - Office / Warehouse
- Warehouse Distribution
- Warehouse Distribution Fulfillment Center
- Specialized Buildings
- Intermodal Logistics Centers
- Infill Industrial Development

FASTTRACK SITE YIELD ANALYSIS

The industrial typologies were applied to each of the FastTrack sites to understand, in strictly conceptual terms, how modern industrial and distrubution buildings could fit on each of the sites, allowing for factors such as rail access, stormwater management, truck parking, building massing, and street connectivity.

For Chrysler, the Yield Anlysis includes the notion of a CNG/LNG truck fueling location, as well as rail access. Concepts for GM depict a larger distribution building as well as a smaller manufacturing building, along with an alternative alignment for Harding Street, which includes the future idea of grade separating Harding Street from the Belt Line.

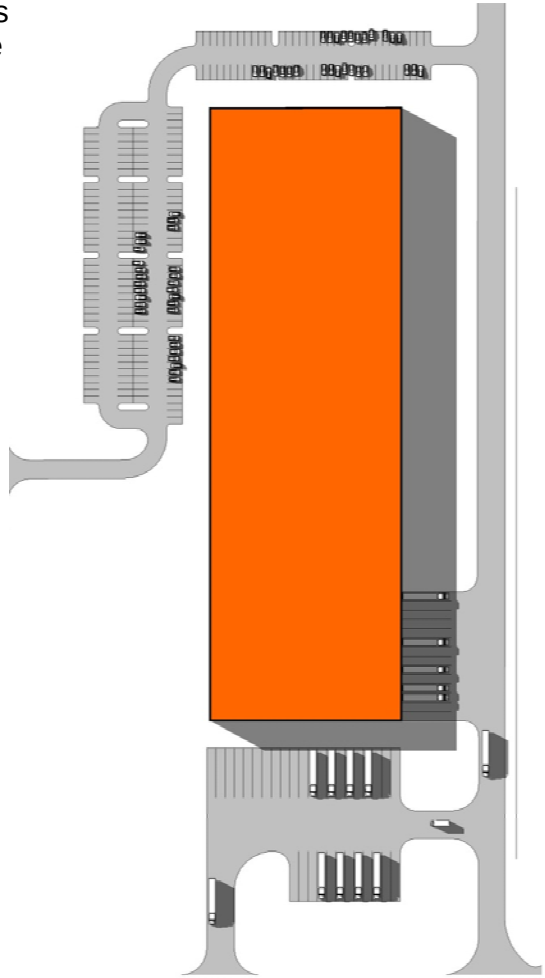
Concepts for Navistar presume two larger distrubution buildings with rail access. Concepts for Ford presume the future buildout of a modern business and logistics park with the possibility of rail access. The plan suggests the need for a new north-south road that connects through the park between English Avenue and Washington Street.

Manufacturing / Wholesale

These industrial buildings can range between 28,000 SF and 75,000 SF., with larger owner-occupied buildings exceeding 200,000 SF. Floor to area ratios reflect the needs of specific users, with a range between 0.25 and 0.31. Building clear ceiling heights ranging from 14 to 24 feet. Typical users include light manufacturing and assembly, as well as wholesale and service businesses, the latter more so in urban areas.

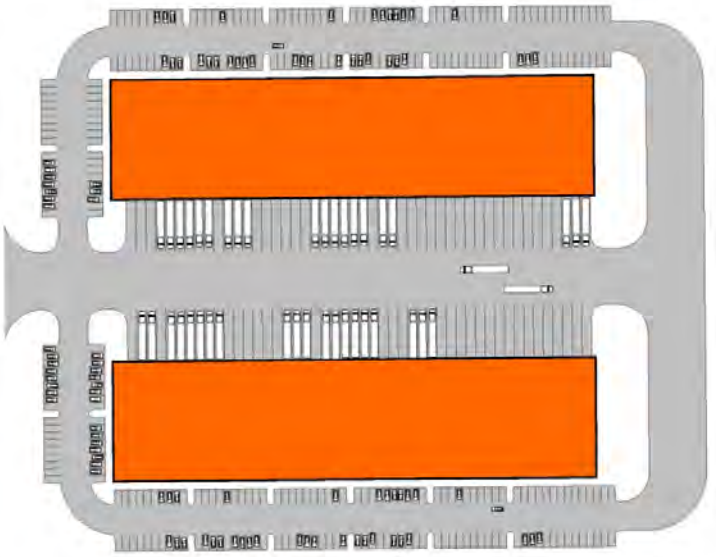
Employee / patron parking requirements tend to increase with wholesale and service businesses. Truck impacts are modest, with daily deliveries by UPS or FEDEX. Limited need for on-site truck parking.

Indianapolis
Small MFG / Wholesale
Building Footprint 215 x 328
Site Footprint 475 x 570
Floor to Area ratio: 0.26



Flex – Office / Warehouse

Flex space is the most common building type for speculative projects. As its name would suggest, it is the most flexible option for multi-tenant accommodations and tenants that do not build-to-suit. The variety of uses for flex space includes office, distribution, light manufacturing, showroom (furniture, textiles, equipment, etc.), laboratories, or other research and development functions; larger buildings are used by freight forwarders. Speculative flex projects are typically one-story and range up to about 100,000 square feet. Larger, more often owner occupied or build to suit flex buildings can be up to 400,000 SF. Given the variety of tenant needs, demising partitions for subdivisions and office buildout can change frequently. Often, tenants opt for approximately 25% office space. Flex projects can be built on an infill basis, in part because the larger office build-out percentage typically drives higher rents compared to pure distribution or warehouse uses.

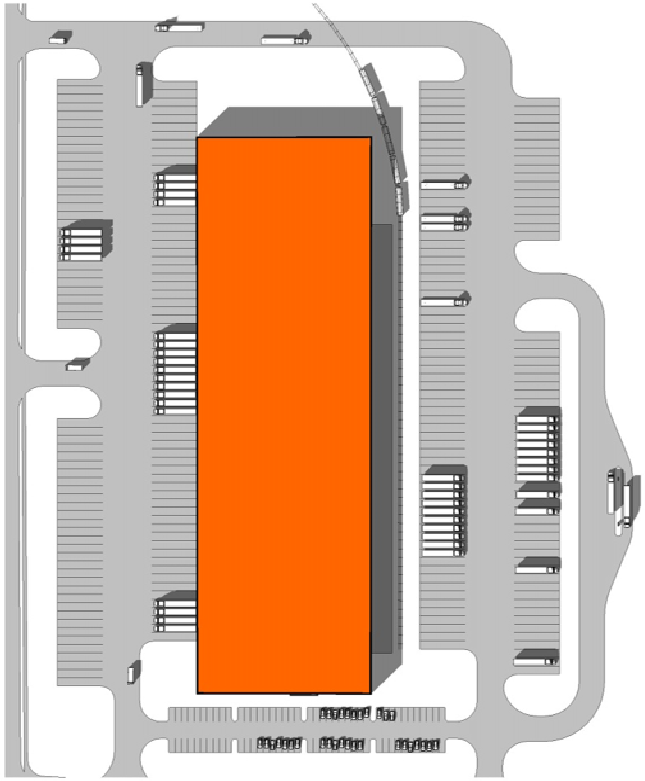


Flex, Small Business / Warehouse
Four-building development
Building Footprint 380 x 760
Building Footprint 160 x 760
Site Footprint 1200 x 1800

Warehouse Distribution

These industrial buildings can range between 250,000 SF and 500,000 SF, with land requirements of between 15 and 20 acres. Floor to area ratios reflect the needs of specific users along with plans for future expansion / future phases, but can range between 0.23 and 0.5. Many accommodate highly automated systems, with computerized cranes and standardized racks. Ceiling heights link with automated automatic sort and retrieval systems. Facilities are geared toward storage of high volume goods in standardized packaging (books, electronics, etc.). With a high ratio of loading docks, these facilities can generate truck impacts that are significant, along with greater need for trailer parking areas. Rail access can be an important consideration.

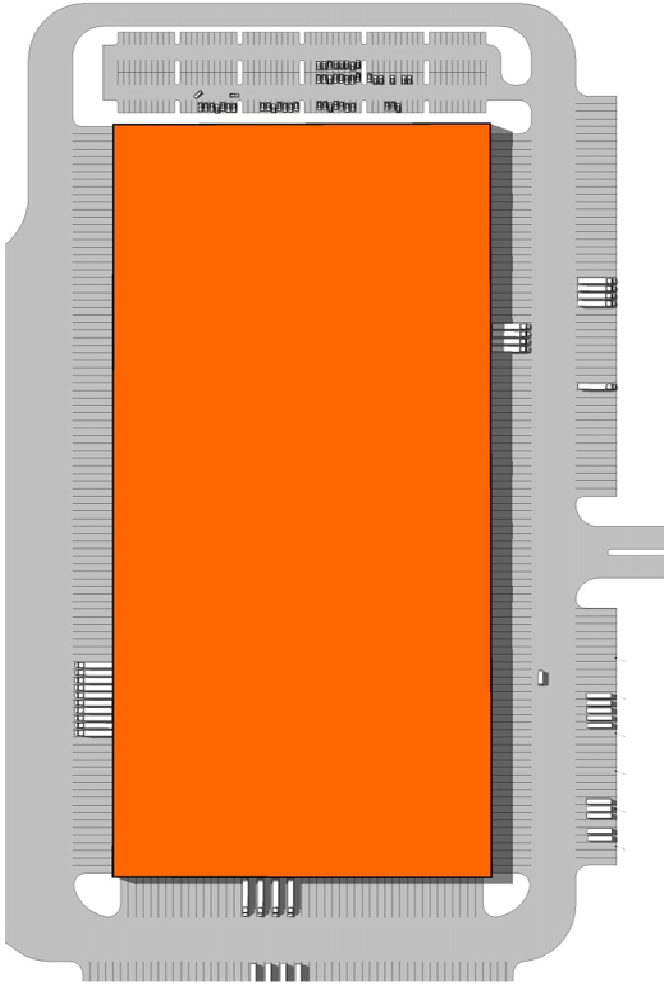
Indianapolis
Small Warehouse / Distribution
Building Footprint 450 x 995
Site Footprint 1066 x 785
Floor to Area Ratio: .55



Warehouse Distribution Fulfillment Center

Property attributes generally include:

- The concept is a fulfillment center, but Amazon is the exception rather than the rule.
- Significantly more car parking for employees, along with truck trailer storage
- Generally single-tenant occupancy
- Racking and conveyers throughout the building
- Tend to locate in lower cost locations



Specialized Buildings

Cross-Dock Distribution Centers

Cross-dock buildings tend to be both very long and very narrow, with truck bays on both long sides, to accommodate sorting as a primary function. These distribution facilities can have a central conveyer system to quickly move goods from one bay to another. Truck impacts with these sites are significant, with both a considerable volume of daily traffic, as well as needs for truck parking. Some larger facilities also include truck repair depots as well as fueling. Concentrations of these facilities could be suitable for development of alternative fuels (CNG / LNG).

Indianapolis
Cross dock facility
Building Footprint 87 x 352
Site Footprint 372 x 580
Floor to Area Ratio: .14

Truck Depots

These facilities are often owned and operated by trucking companies (Werner, RPS), with sites that are near interstates, most commonly located on the edge between urban and rural. These facilities are not considered fulfillment centers. There is considerable truck parking, and minimal employee parking. The buildings are large, (>800,000 SF) with modest office build-outs. Floor to area ratios of .34 can be common, depending on land for expansion. Buildings typically have at least 30 feet of clear ceiling height, with considerable rack storage inside.

Indianapolis
Warehouse / Distribution
Building Footprint 600 x 1800
Site Footprint 1200 x 2300

Intermodal Logistics Centers

Intermodal logistics centers represent the extreme end of distribution, with high volumes of freight generated by rail served intermodal yards, where an average of 500,000 shipping container “lifts” happen per year, and connected to adjacent distribution centers. Newer projects have over-weight truck routes to allow overweight containers to be unloaded from rail cars and transported “across the street” to distribution centers, to be broken down for local distribution.

Infill Industrial Development Example

Looking at the industrial market near O'Hare International Airport, there is a gradual process under way, where existing older and smaller buildings are being demolished to make way for larger modern industrial buildings. Below is one example, where a new 291,000 SF building was built in 2012 on a slightly larger site measuring 478,000 SF (about 10 acres); FAR of 0.41. As shown in the aerial, the new building includes ample vehicle parking, as well as truck docks, as well as stormwater detention on site. The character of adjacent buildings can also be understood from the aerial. Areas for truck loading incorporate a roughly 120 foot setback between building and property line. Areas where trucks will be loaded as well as stored require at least a 170 foot setback between building and property line.

YIELD ANALYSIS

Chrysler

YIELD ANALYSIS

Chrysler

YIELD ANALYSIS

Ford/Visteon

YIELD ANALYSIS

Ford/Visteon

YIELD ANALYSIS

Navistar

YIELD ANALYSIS

Navistar

YIELD ANALYSIS

General Motors

YIELD ANALYSIS

General Motors

Indy FastTrack

2014

A market-based, results-driven plan to increase private investment in four underutilized regional land assets that were vacated as a result of the severe destabilization of the automotive industry.

Broader Economic Analysis and Discussion

City of Indianapolis
Division of Planning
200 E. Washington Street, Suite 1821
www.indy.gov

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Indianapolis
Gregory A. Ballard, Mayor

GUIDON DESIGN

AECOM

Broader Economic Analysis and Discussion 04

CORE FINDINGS

Economic Trends

The analysis reinforces a longer-term pattern of economic under-performance for Marion County, with unemployment rates trending above U.S. averages, particularly since 2005. Marion County has also seen its average unemployment rate differential with Central Indiana widen since 2007.

Marion County lags behind Central Indiana in employment growth and recovery. Marion County's unemployment rate (9.2%) is the highest among aspirational peers. Central Indiana and Marion County are highly reliant on manufacturing, compared to geographic and aspirational peers; 90% of Central Indiana regional declines in manufacturing were felt in Marion County, unlike geographic peers, where the impact was more geographically diversified.

Population growth across Central Indiana has been slower since the recession (1% between 2009 and 2012) compared to the longer-term growth rate (1.4% between 2000 to 2012). Significantly, this growth rate compares favorably with geographic peers metropolitan areas, most of which have seen decreased population growth rates since 2009, as well as slower overall growth over the noted period. At the same time, Central Indiana tends to lag behind "aspirational" peer metropolitan areas, particularly Denver, Nashville, and Charlotte.

While Marion County and Central Indiana have both experienced growth in median incomes since 2010, rates of growth are divergent (1.7% versus 4.0%). Marion County's estimated 2011 median income ($39,631) is well below geographic and aspirational peers; a concern that speaks to loss of higher paying manufacturing jobs. Not all aspirational peers have seen strong growth in incomes over the noted period. Minneapolis, Richmond, Denver, and Charlotte have lagged, particularly since 2010.

While Central Indiana has higher exports per capita, its overall growth rate in exports is lower relative to geographic and aspirational peer metros.

While the overall cost of living across Central Indiana is lower than many peer metros, the Region's cost of living composite index increased more than any other peer metro between 2010 and 2012. This increase likely reflects a lack of growth in other metropolitan areas as well.

In general, manufacturing across Indianapolis is only beginning to recover. While pharmaceuticals, aerospace products, printing, medical equipment and motor vehicle parts make up the largest sectors, each with more than 2000 positions in 2012, these sectors also saw significant decreases in employment over the noted period, with a total decrease of 8,600 jobs. Location quotient analysis confirms several important details about Marion County. Sectors that have added jobs since 2010 include:

- Coating, engraving and heat treating
- Machine shops and metalworking
- Electrical equipment, including HVAC
- Chemicals

Sectors that have location quotients greater than 1.0 including:

- Hardware mfg
- Grain and oilseed milling
- Printing
- HVAC equipment
- Medical equipment
- Pharmaceuticals.

Sectors that have experienced the fastest rate of growth in their location quotient since 2001 including:

- Computer & peripheral equipment
- Communications equipment
- Glass products
- Cut and sewn apparel
- Forging and stamping
- Magnets & optical media mfg

Of equal importance are sectors that have seen the greatest declines in LQ since 2001, including:

- Turbine and transmission equipment
- Motor vehicle parts
- Foundries
- Pharmaceuticals

Peer Cities

PEER CITIES ANALYSIS

The Peer Cities analysis placed Central Indiana and Marion County in a broader geographic context, such that the current pace of economic growth can be better understood. The analysis compares the Indianapolis MSA (referred to as Central Indiana) and Marion County (referred to as “City/County”) to specific geographic and aspirational peer metropolitan areas.

The Geographic Peers focused on proximate Midwestern metropolitan areas, including:

- Chicago, IL
- Cincinnati, OH
- Cleveland, OH
- Columbus, OH
- Detroit, MI
- Kansas City, MO/KS
- St. Louis, MO/IL

The set of Aspirational Peers included a broader set of metropolitan areas, some of which are still “Midwestern”. The intent behind these peers is that they provide a sense of future outcomes for Indianapolis:

- Charlotte, NC
- Denver, CO
- Minneapolis, MN
- Nashville, TN
- Pittsburgh, PA
- Richmond, VA

The analysis focuses on two periods of time, with a broader trend from 2002 through 2012, as well as on a post-recession trend since 2010. Comparisons are made in absolute terms, as well as using compound annual growth rates (CAGR).

Data sources used in the analysis include:

- US Census,
- Bureau of Labor Statistics,
- International Trade Administration,
- Center for Regional Economic Competitiveness

Demographic metrics include:

- Annual Population Change
- Median Household Income

Employment metrics include:

- Labor Force Growth
- Annual Employment Growth
- Unemployment Rate

Exports metrics include:

- Exports per Capita
- Growth in Regional Exports

Cost of Living Index metrics include:

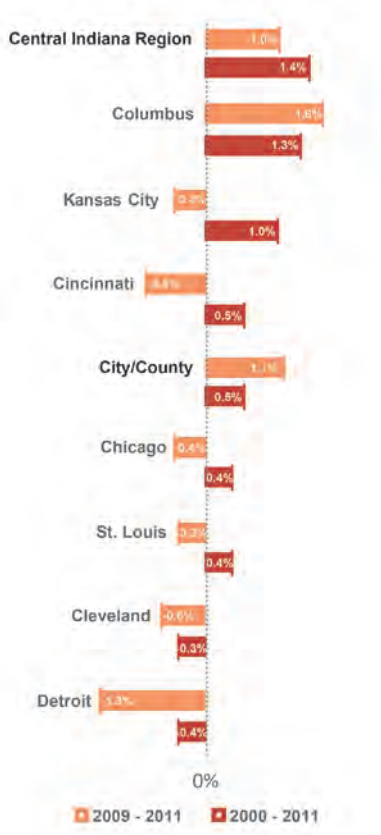
- Composite Index
- Housing Costs Index
- Utilities Costs Index

POPULATION CHANGE & EMPLOYMENT CHANGE

PEER CITIES ANALYSIS

POPULATION CHANGE Compound Annual Growth Rate

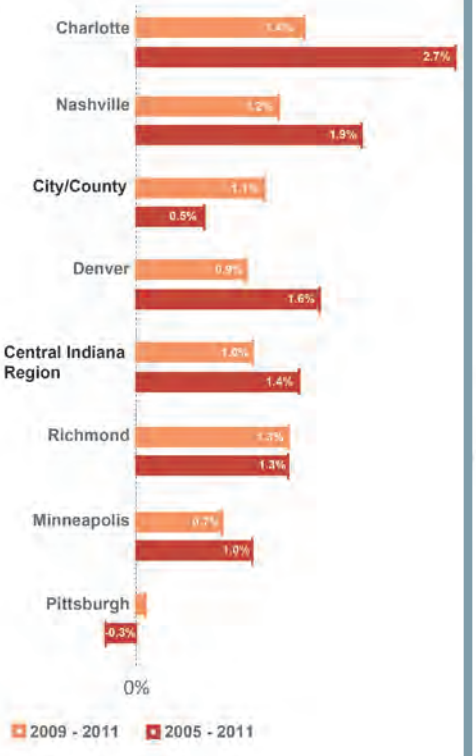
Geographic Peers



In terms of population growth since 2000, the Central Indiana Region stands out in terms of geographic peers, with the core city/county region lagging slightly behind.

Source: US Census.

Aspirational Peers

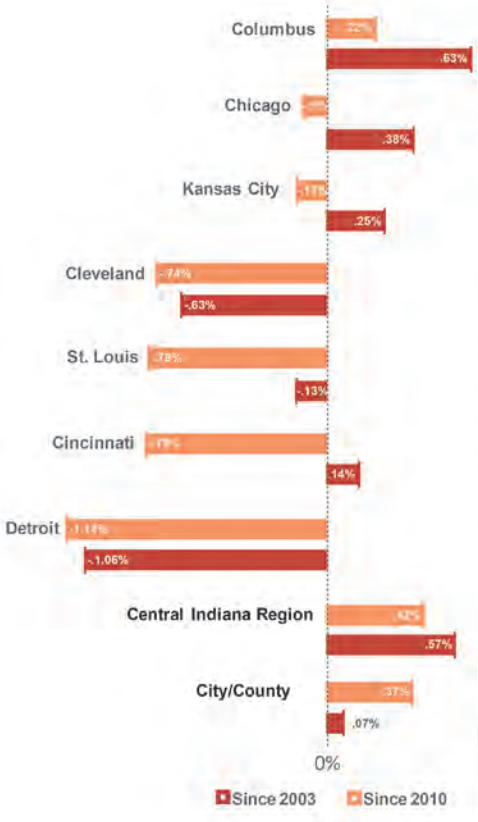


In terms of aspirational peers, Central Indiana compares favorably with metros such as Denver, Richmond, and Nashville.

Source: US Census.

LABOR FORCE GROWTH Compound Annual Growth Rate

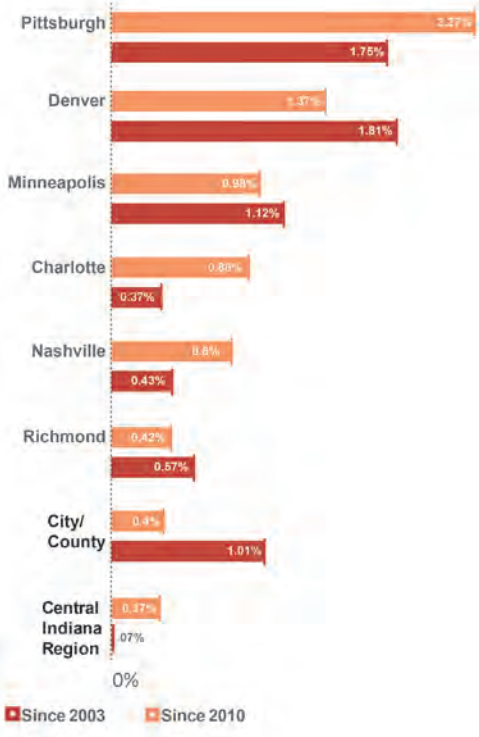
Geographic Peers



Most geographic peers have yet to recover to pre-recession labor force levels. Generally positive labor force growth occurred for Central Indiana & City/ County since 2003 and 2010.

Source: Bureau of Labor Statistics

Aspirational Peers



City/County & Central Indiana Region labor force growth was lower relative to aspirational peer cities.

Source: Bureau of Labor Statistics

POPULATION CHANGE & EMPLOYMENT CHANGE

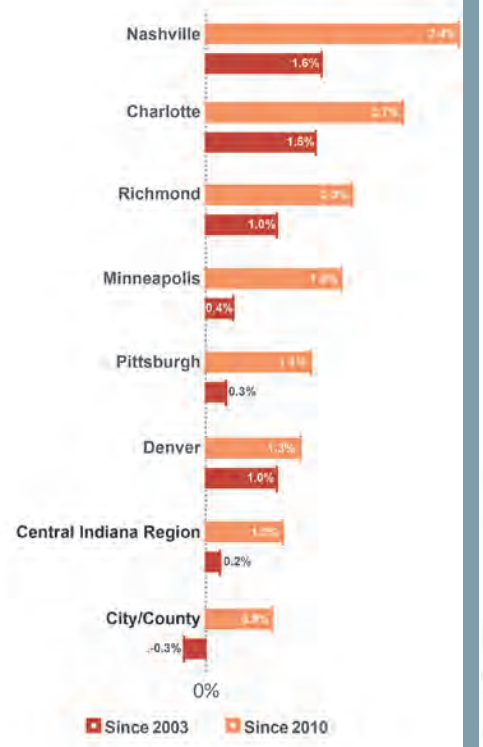
ANNUALIZED EMPLOYMENT GROWTH Compound Annual Growth Rate

Geographic Peers

City/County employment growth is lagging behind the Central Indiana Region and geographic peers.

Source: Bureau of Labor Statistics

Aspirational Peers

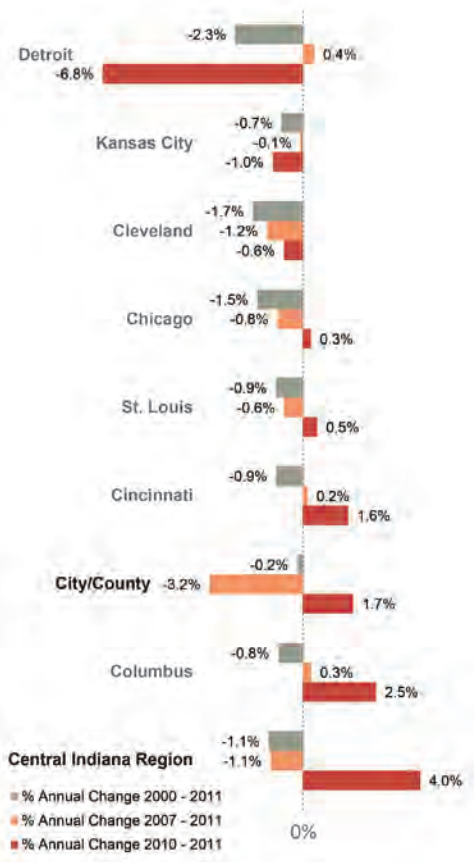


City/County and the Central Indiana Region are experiencing long-term positive job growth, but lower relative to aspirational peer cities.

Source: Bureau of Labor Statistics

ANNUAL GROWTH IN MEDIAN INCOME Compound Annual Growth Rate

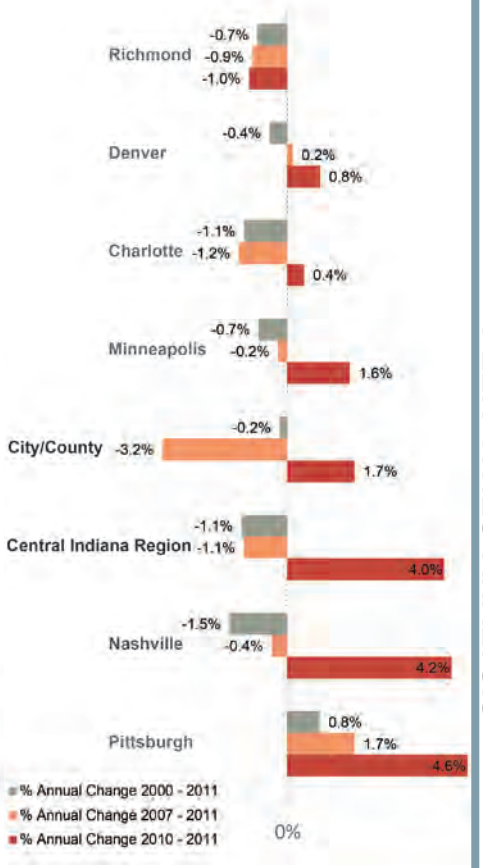
Geographic Peers



Reflective of broader economic challenges across the Midwest through 2010, median incomes actually decreased across the geographic peers. Decreases for City / County were pronounced between 2007 and 2011. At the same time, across Central Indiana, income growth from 2010 to 2011 was notably strong.

Source: U.S. Census American Community Survey 2007, 2010, & 2011 1-Year Estimate

Aspirational Peers



In general, aspirational peers have experienced higher median income growth rates between 2010-2011 than geographic peer cities, with places such as Nashville and Pittsburgh leading the pack.

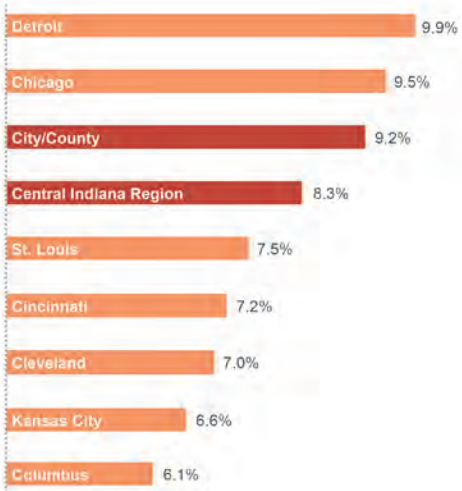
Source: U.S. Census American Community Survey 2007, 2010, & 2011 1-Year Estimate

POPULATION CHANGE & EMPLOYMENT CHANGE

PEER CITIES ANALYSIS

UNEMPLOYMENT RATE March 2013

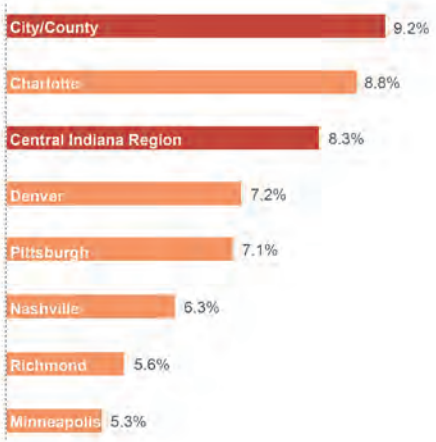
Geographic Peers



City/County and Central Indiana have higher relative unemployment rates than geographic peers, which is surprising.

Source: Bureau of Labor Statistics

Aspirational Peers



City/County and Central Indiana have higher unemployment rates than aspirational peers, with the exception of Charlotte.

Source: Bureau of Labor Statistics

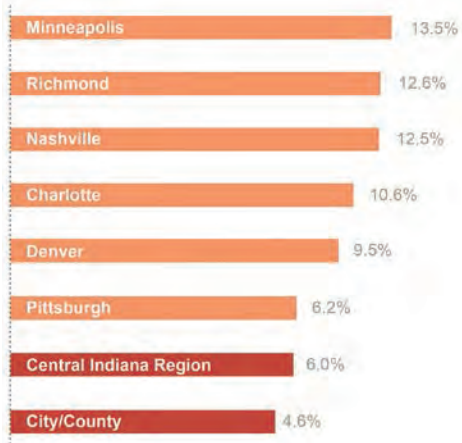
UNEMPLOYMENT RECOVERY Since 2010

Geographic Peers

City/County and Central Indiana are recovering, but at rates significantly lower relative to geographic peers. This reflects in part the reality that the Central Indiana economy did not experience the same magnitude of impact felt by other metros, such as St. Louis, who experienced more pronounced declines.

Source: Bureau of Labor Statistics

Aspirational Peers



Similar to the above, City/County and the Central Indiana Region are seeing recovery in employment levels, but lower recovery rates relative to aspirational peers.

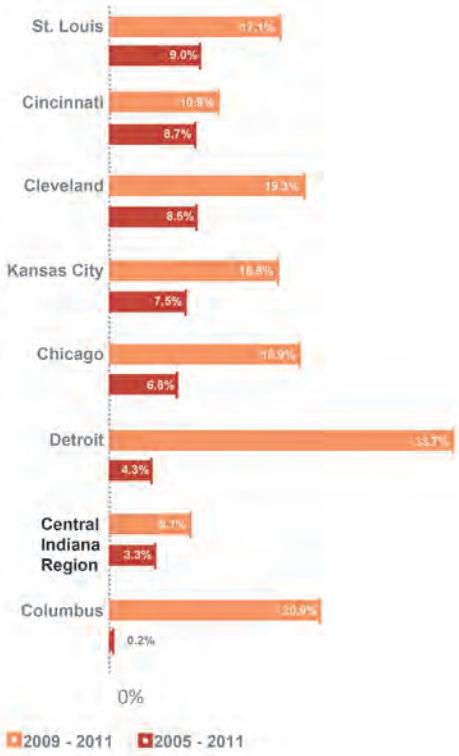
Source: Bureau of Labor Statistics

PEER CITIES

GROWTH IN REGIONAL EXPORTS Per Capita Compound Annual Growth

Understanding exports is critical for the Region's future economic recovery. One clear upside from the Great Recession was a strong increase in exports from the Midwest beginning in 2009, with leadership in manufactured goods and commodities. Statewide, Indiana saw a dramatic increase in exports between 2009 and 2012, growing from about $22.9 billion to more than $34.4 billion. In this context, the role of the Central Indiana Region (Marion County in particular) in driving exports was put into sharper focus.

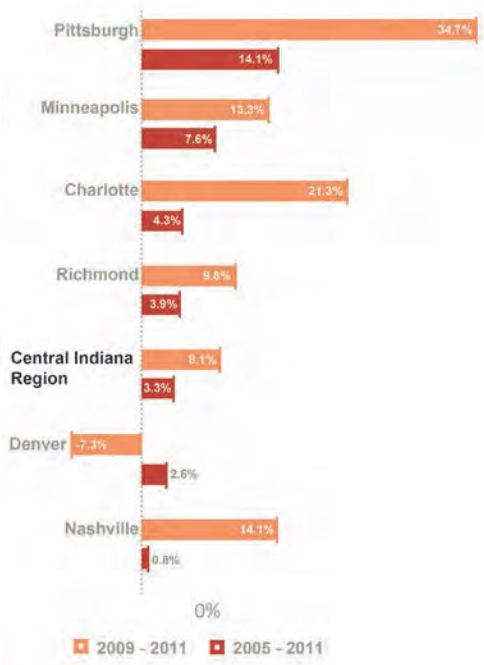
Geographic Peers



Central Indiana saw growth in per capita regional exports. The Region's growth in exports per capita was lower relative to geographic peer cities even though the Region's per capita exports in 2011 was higher than many peer cities.

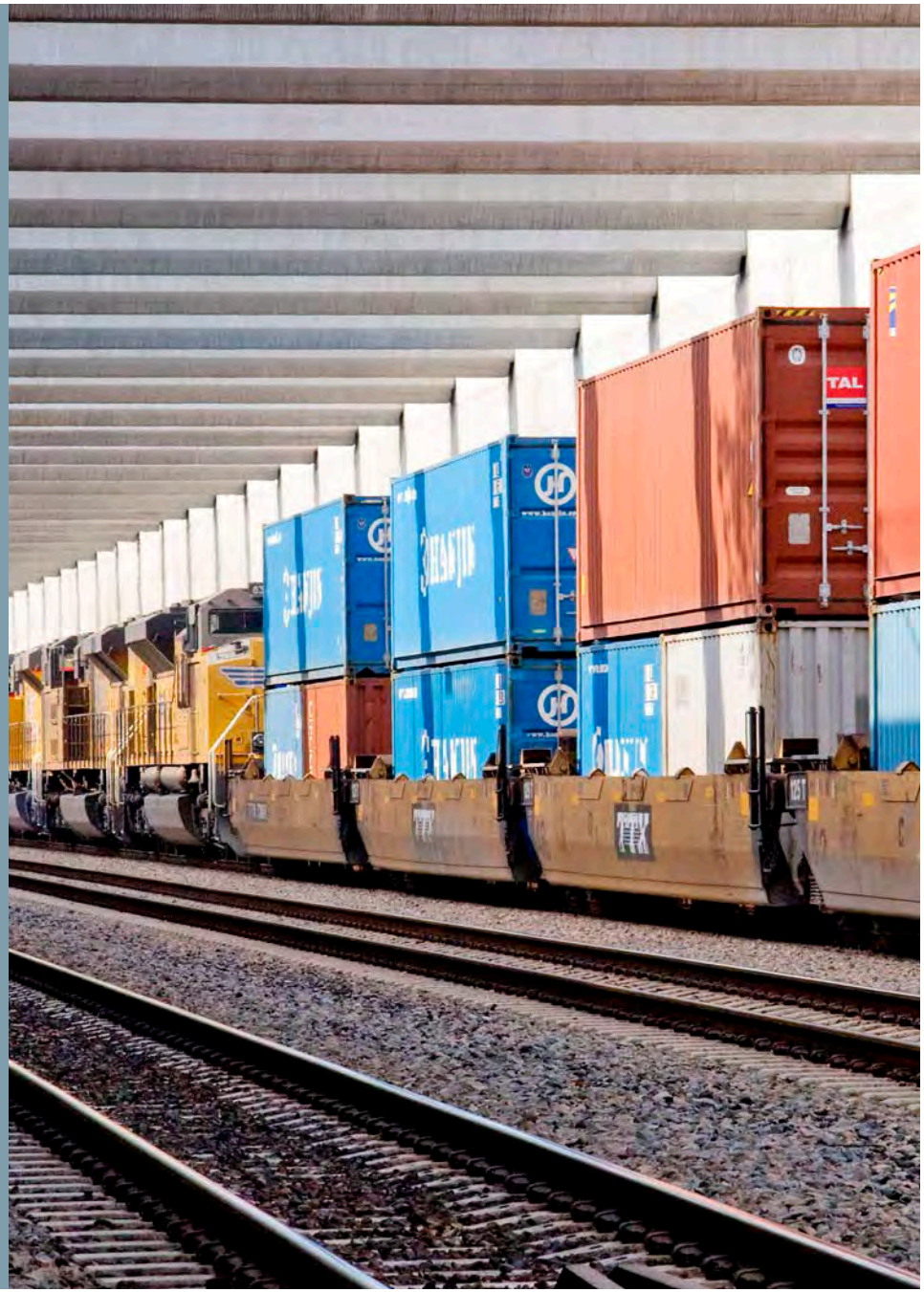
Source: International Trade Administration Exports by Metropolitan Area

Aspirational Peers



Central Indiana experienced positive growth in total regional exports per capita, but lower relative to aspirational peer cities.

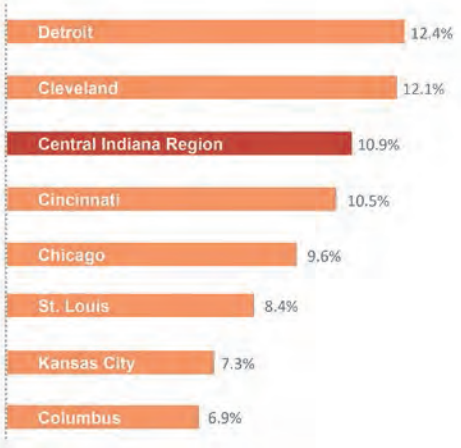
Source: International Trade Administration Exports by Metropolitan Area



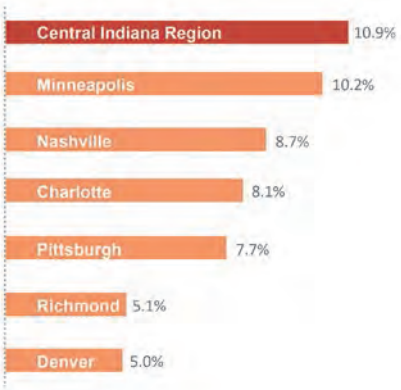
PEER CITIES

MANUFACTURING JOB LOSSES
Manufacturing Employment as a Percentage of Total by Metro Area, 2003 to 2012

Geographic Peers



Aspirational Peers

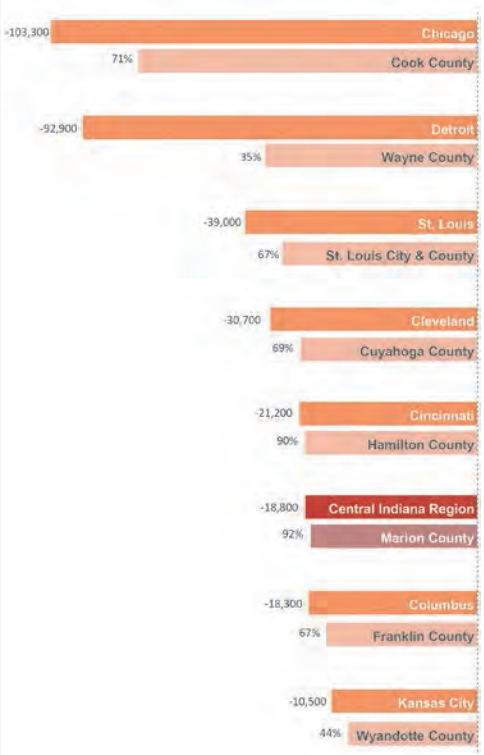


The Central Indiana region has a greater percentage of manufacturing jobs loss than the majority of other peer metros.

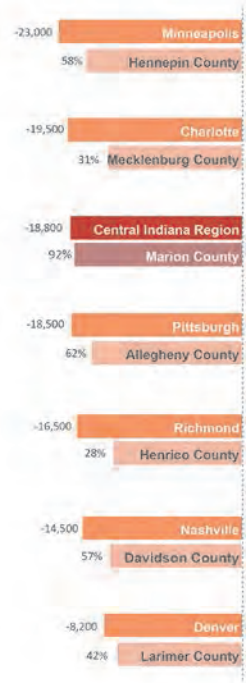
Source: Bureau of Labor Statistics

MANUFACTURING JOB LOSSES
Total Losses by MSA and % Total by Major County between 2012 and 2003

Geographic Peers



Aspirational Peers



The majority of Central Indiana's manufacturing job losses occurred in Marion County, with a level of concentration that is significant across the geographic peers.

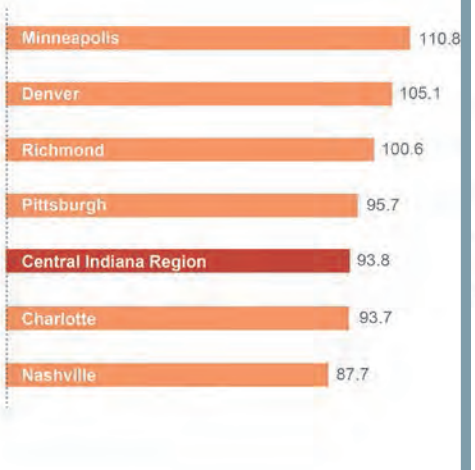
Source: Bureau of Labor Statistics

PEER CITIES COST OF LIVING COMPARISONS

COMPOSITE INDEX 2012

Geographic Peers

Aspirational Peers



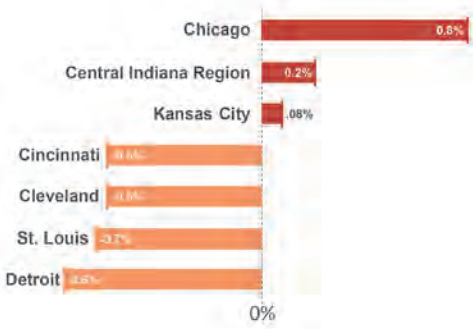
Central Indiana's 2012 cost of living composite index is lower relative to both geographic and aspirational peer cities, and is significantly lower than Chicago's.

Source: Center for Regional Economic Competitiveness Cost of Living Index, 2012 3rd Quarter.

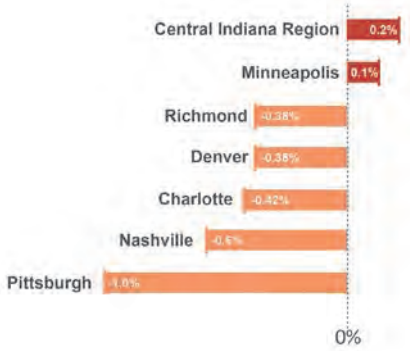
COMPOSITE INDEX ANNUAL GROWTH 2000-2012

Compound Annual Growth

Geographic Peers



Aspirational Peers



Central Indiana's total cost of living composite index, while lower than most geographic & aspirational peer cities in 2012, has increased in the past decade. While the cost of living of the majority of aspirational peer cities has decreased, the Central Indiana Region has experienced a slight increase.

Source: Center for Regional Economic Competitiveness Cost of Living Index, 2000 & 2012 3rd Quarter. *2000 data not available for Columbus, OH MSA

Advanced Manufacturing

MANUFACTURING SECTOR ANALYSIS

Trends across industry sectors for Marion County were evaluated, with a focus on manufacturing. The analysis focused on 50 industry sectors, ranging from grain and oilseed milling to medical equipment and supplies. For each sector, employment data was collected and then compared with sector specific national trends. The analysis focused on three periods of time:

- 2002 to 2007, addressing pre-recession growth by industry sector
- 2008 to 2010, addressing the impact of the "Great Recession"
- 2010 to 2012, addressing the period of economic recovery

This section begins with a review of broader employment trends for Marion County, and then dives deeper into manufacturing across Marion County to clarify the current status of specific manufacturing sectors. These analyses include the calculation of location quotients, which are used to compare employment levels between a defined market area to that of the United States, to gauge the local extent of concentration of a particular goods producing or service producing sector. Further discussion of the location quotient approach follows.

What is Advanced Manufacturing?

According to the President's Council of Advisors on Science and Technology Report on Ensuring American Leadership in Advanced Manufacturing, Advanced Manufacturing is, "a family of activities that:

a. depend on the use and coordination of information, automation, computation, software, sensing, and networking, and/or

b. make use of cutting edge materials and emerging capabilities enabled by the physical and biological sciences that involve new ways to manufacture existing products, and develop new products that are emerging from new advanced technologies."

The report also states that, "Advanced Manufacturing is not limited to emerging technologies; rather, it is composed of efficient, productive, highly integrated, tightly controlled processes across a spectrum of globally competitive U.S. manufacturers and suppliers.

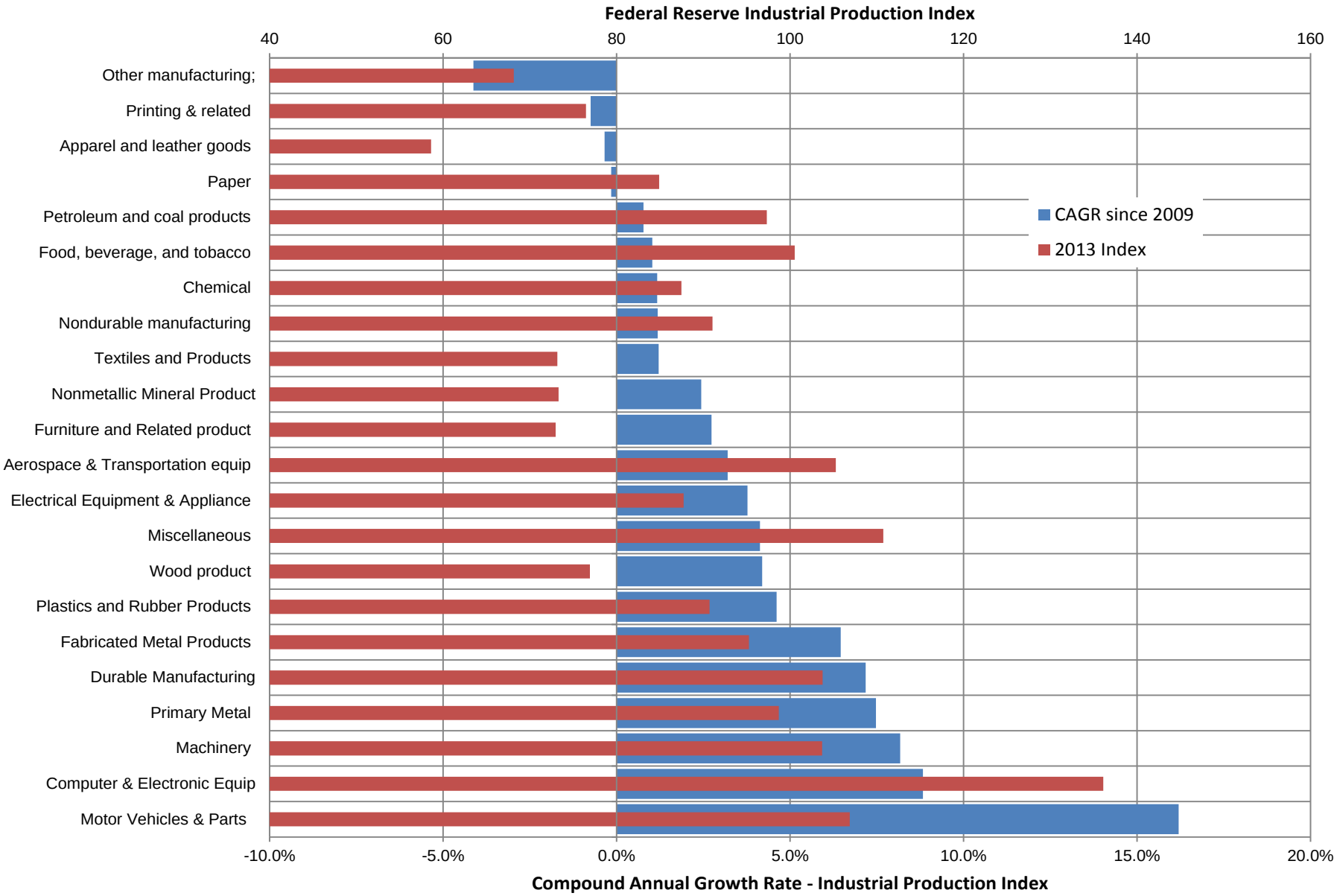
The Brookings Institution defines Advanced Manufacturing in more deliberate terms in their 2014 publication Powering Advanced Industries, State by State, with a specific focus on industry sectors that, "sustain above-average R&D spending as a share of total sales and employ a workforce in which the average worker is expert in at least one discrete Science, Technology, Engineering, and Math (STEM) field". Brookings researchers identified 23 sectors that meet these criteria.

3254 - Pharmaceuticals and medicine
3332 - Industrial machinery
3333 - Commercial & service industry machinery
3336 - Engine; turbine, & power transmission equipment
3341 - Computer and peripheral equipment
3342 - Communications equipment
3343 - Audio and video equipment
3344 - Semiconductors and other electronic components
3345 - Navigational; measuring; electro-medical; and control instruments
3346 - Magnetic and optical media
3352 - Household appliances
3353 - Electrical equipment
3359 - Other electrical equipment & components
3361 - Motor vehicles
3363 - Motor vehicle parts
3364 - Aerospace products and parts
3391 - Medical equipment and supplies
5112 - Software publishers
5179 - Other telecommunications
5182 - Data processing and hosting
5415 - Computer systems design
5416 - Management; scientific & technical consulting
5417 - Scientific research and development

MANUFACTURING SECTOR ANALYSIS - US PERSPECTIVE

US MFG SECTOR INDEX IMPORTANCE AND COMPOUND ANNUAL GROWTH SINCE 2009

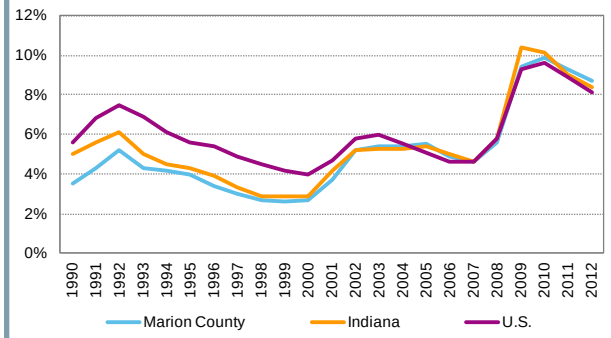
ADVANCED MANUFACTURING



The Federal Reserve generates monthly, quarterly and annual manufacturing production indexes, which are useful in highlighting changes in industry production by sector. The above chart reinforces both annualized growth in the index since 2009, as well as the sectors with the largest indexes through the end of 2013. For example, the industrial sectors that have expanded the fastest since 2009 include automotive, computers & electronic equipment, machinery, fabricated metal products, and electrical equipment and appliances. At the same time, sectors with the highest 2013 index include computers & electronic equipment, and aerospace.

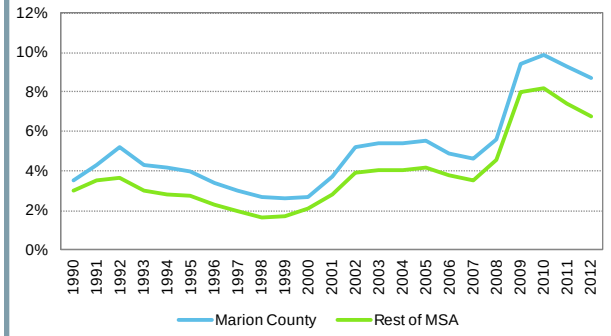
MARION COUNTY MANUFACTURING SECTOR ANALYSIS

UNEMPLOYMENT



Source: BLS

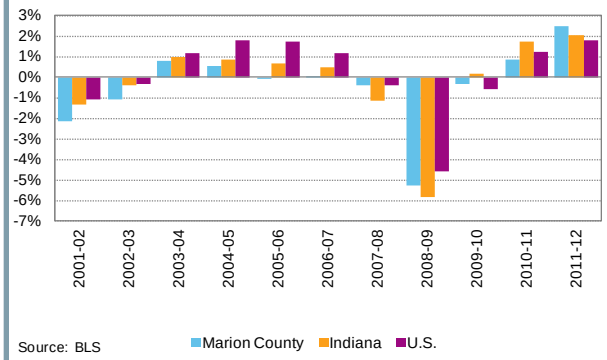
Through 2005, average annual unemployment rates in Indiana and Marion County were below national averages. Since 2008, annual unemployment rates in Marion County have been higher than U.S. averages, peaking at 9.9% in 2010 compared to 9.6% for the U.S. Although unemployment in Indiana has also been higher, the State started its recovery earlier and faster compared to Marion County.



Source: BLS

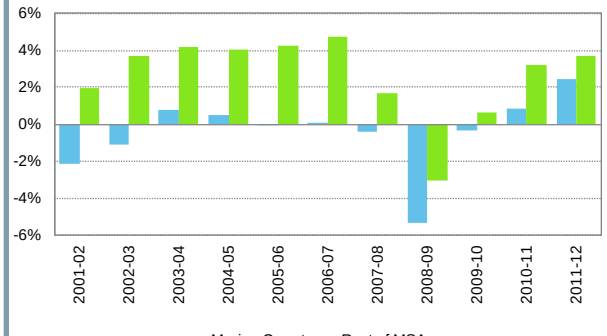
Average annual unemployment rates in Marion County have exceeded MSA averages since 1990. Through 2008, the average differential between the county and the rest of the metropolitan area was 1%. During the recent recession, this gap has widened to almost 2% in 2011 and 2012.

CHANGE IN EMPLOYMENT



Source: BLS

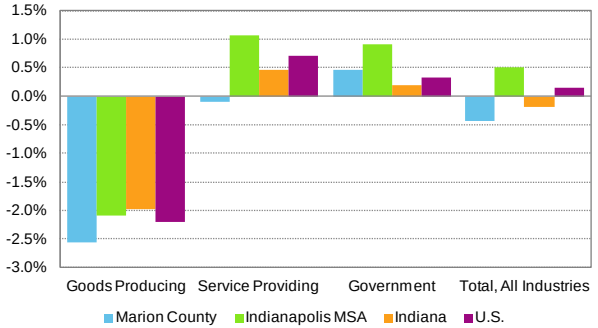
Annual changes in employment show that Marion County, when compared to Indiana and the U.S., had deeper declines and less job growth in recent history. The "Great Recession" impacted the statewide economy more significantly than Marion County.



Source: BLS

Contrasts between Marion County and the rest of the Indianapolis-Carmel MSA are apparent, with job growth occurring unevenly across the MSA. Between 2001 and 2008, Marion County experienced job loss in multiple years while the rest of the region saw growth. The recent recession impacted Marion County harder and longer than the MSA.

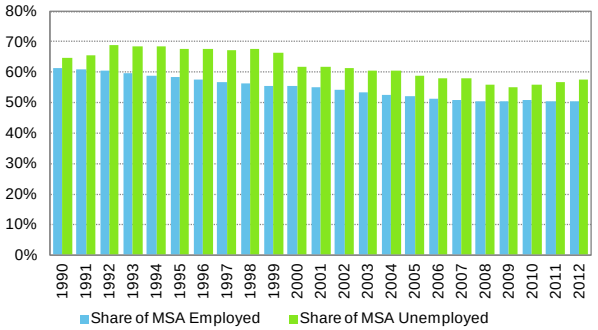
EMPLOYMENT SHIFT, 2001 - 2012



Source: BLS

The chart above reflects employment data for 2001, 2007, 2010 and 2012. Since 2001, there has been a dramatic shift in employment. The number of jobs in goods producing sectors dropped at an average annual rate of 2.6% in Marion County, compared to 2.2% nationally. The only sector that grew in Marion Country from 2001 to 2012 was government.

EMPLOYMENT SHIFT, 1990 - 2012



Source: BLS

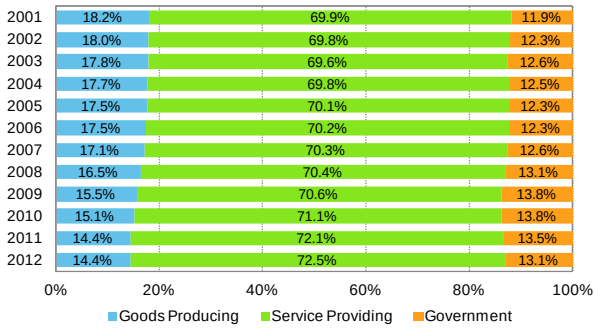
Marion County makes up a large but decreasing share of total employment in the Indianapolis MSA. The County also has a disproportionately higher share of unemployed persons, though this share is also declining. In 2012, Marion County residents accounted for 51% of the employed and 57% of the unemployed residents of the MSA.

ADVANCED MANUFACTURING

MARION COUNTY MANUFACTURING SECTOR ANALYSIS

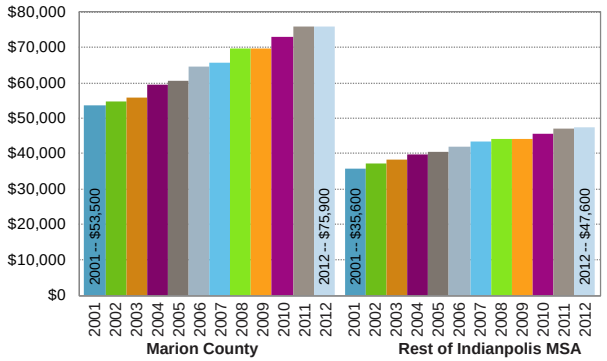
ADVANCED MANUFACTURING

GOODS PRODUCING SECTOR DISCUSSION



Source: BLS

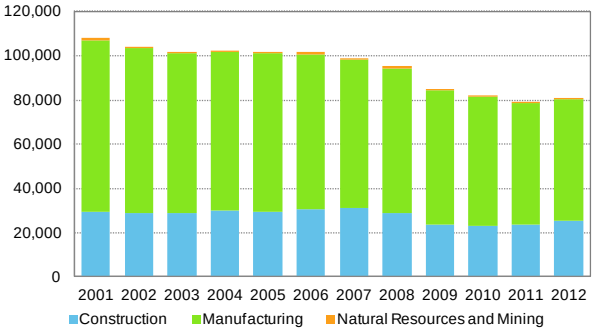
Between 2001 and 2012, Marion County lost nearly 28,000 jobs. Of those, 26,800 were in goods producing sectors. In 2001, jobs in goods producing sectors represented 18% of all jobs, which fell to 14% by 2012 where a vast majority and increasing share of jobs were in service providing sectors.



Source: BLS

While almost 66% of all MSA goods producing jobs are located in Marion County, about 75% of goods producing wages are paid in Marion County. Average wages in goods producing jobs are higher in Marion County than in the rest of the Indianapolis MSA. Between 2001 and 2012, average wages grew faster in the Marion County compared to the MSA (3.2% annually on average compared to 2.7%).

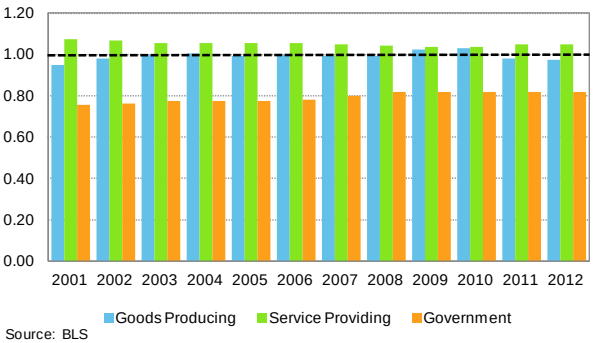
GOODS PRODUCING SECTOR DISCUSSION



Source: BLS

Marion County's goods producing sector is dominated by manufacturing. Though each industry (construction, manufacturing, and natural resources / mining) lost jobs over this time frame, the majority of the 26,800 jobs lost were in manufacturing (84%). For Marion County, there were 77,500 manufacturing jobs in 2001, falling to 54,900 jobs by 2012.

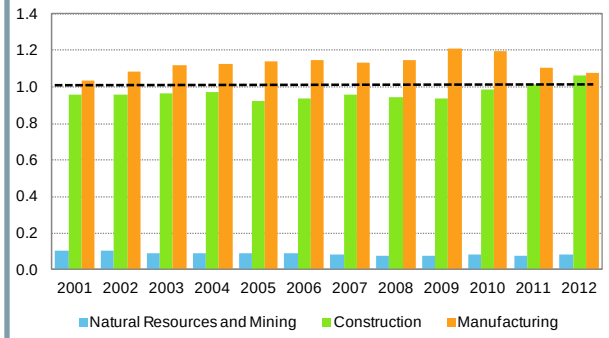
LOCATION QUOTIENTS



Source: BLS

Location quotient analysis shows that service sector employment is strong in Marion County compared to the U.S. Despite employment drops in goods producing sectors, the share of jobs in Marion County has been relatively stable, with some declines since 2010. The share of jobs in the government sector is lower in Marion County than in the U.S.

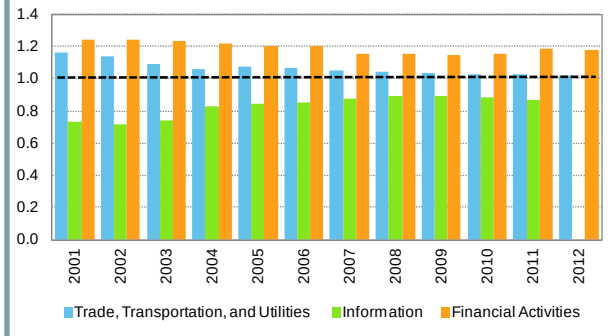
LOCATION QUOTIENTS



Source: BLS

Manufacturing remains a strength in Marion County, with a higher than average share of the workforce employed in this sector with location quotients (LQ) greater than 1.0 In 2012, 9.8% of Marion County jobs were in manufacturing. This compares to a national average of 9.0%.

LOCATION QUOTIENTS

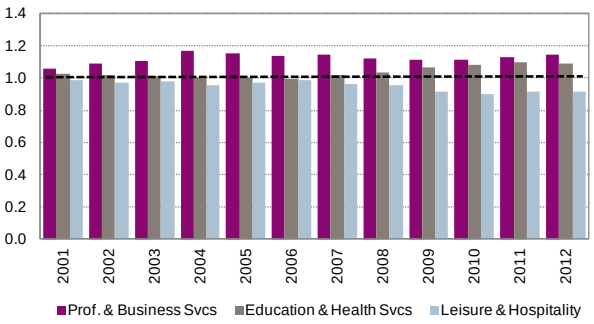


Source: BLS

Marion County has a proportionately larger share of its workforce in Trade, Transportation and Utilities as well as Financial Activities. Jobs in the Information sector have grown in comparison with the U.S. average.

MARION COUNTY MANUFACTURING SECTOR ANALYSIS

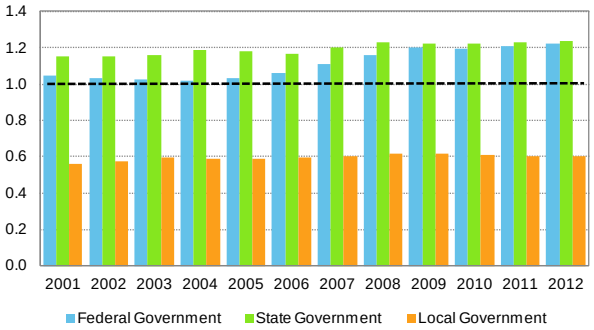
EMPLOYMENT LOCATION QUOTIENTS



Source: BLS

The share of workers in Marion County's Leisure and Hospitality sector has shrunk over time, relative to the U.S. average since 2001. Over the same time period, the share of workers in Education and Health Services has increased as compared to the national average.

EMPLOYMENT LOCATION QUOTIENTS



Source: BLS

There is a higher proportion of federal and state government workers in Marion County than the U.S. average. At the same time, there is a considerably lower share of local government officials in the County, compared to US averages.

ADVANCED MANUFACTURING

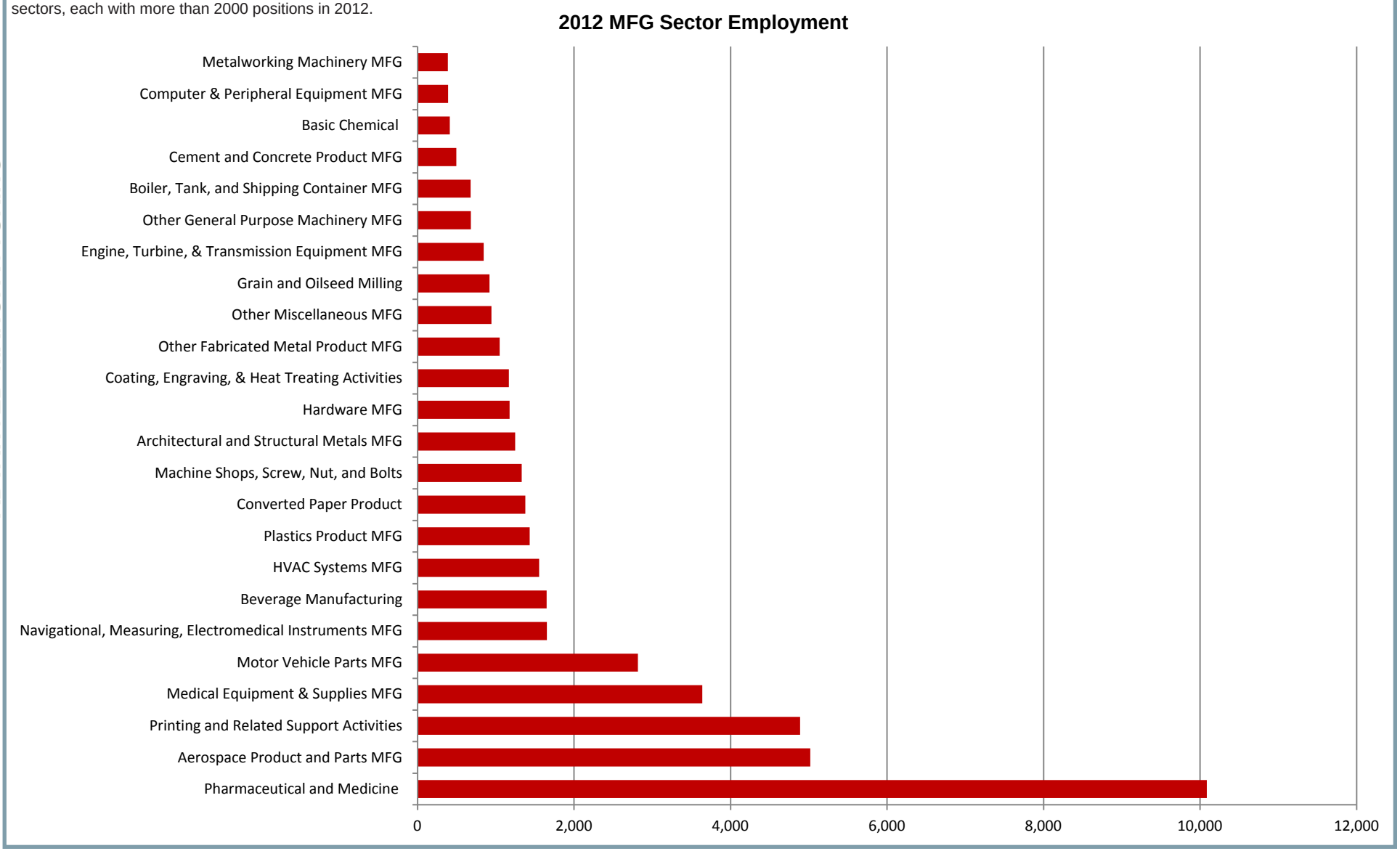
MARION COUNTY DETAILED SECTOR CHANGES - LOCATION QUOTIENT APPROACH

Location quotients are used to compare employment levels between a defined market area to that of the United States as a whole, to gauge the local concentration of a particular goods producing or service producing sector. The assumption is that, all things being equal, a local market should have the same distribution of workers as the nation as a whole. In general, a location quotient greater than 1.0 means that the local economy has a larger than expected share of jobs and indicates that the sector is likely exporting those goods and services outside of the local market. A location quotient less than 1.0 indicates that the number of jobs is proportionally lower than the larger market, and therefore goods are being imported to meet local demand. The analysis is based on employment by sector data compiled and provided by the Indiana Business Research Center.

ADVANCED MANUFACTURING

MARION COUNTY MFG SECTORS BY 2012 EMPLOYMENT

The chart below summarizes manufacturing sectors ranked by 2012 employment. Pharmaceuticals, aerospace products, printing, medical equipment and motor vehicle parts make up the largest sectors, each with more than 2000 positions in 2012.

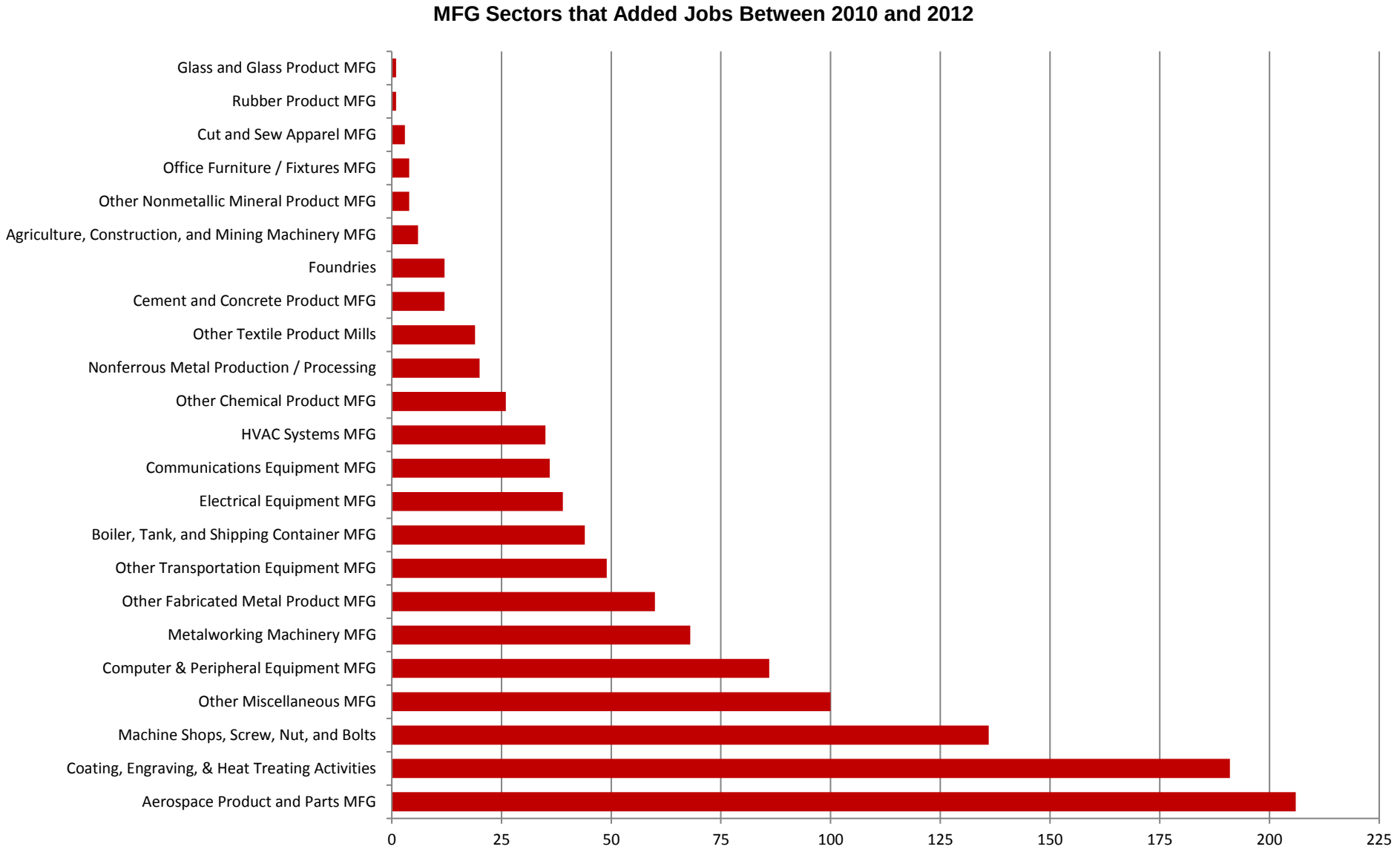


MARION COUNTY DETAILED SECTOR CHANGES - LOCATION QUOTIENT APPROACH

MARION COUNTY MFG SECTORS WITH NEW JOBS BETWEEN 2010 AND 2012

The chart below summarizes MFG sectors that added jobs from 2010 to 2012. Aerospace and coating / engraving and heat treating led the market in job creation during this period. Increases in aerospace are linked with Rolls Royce; their January 2014 announcement about job cuts is notable in this context. The key point here is that the majority of industry sectors are experiencing only modest job creation since 2010.

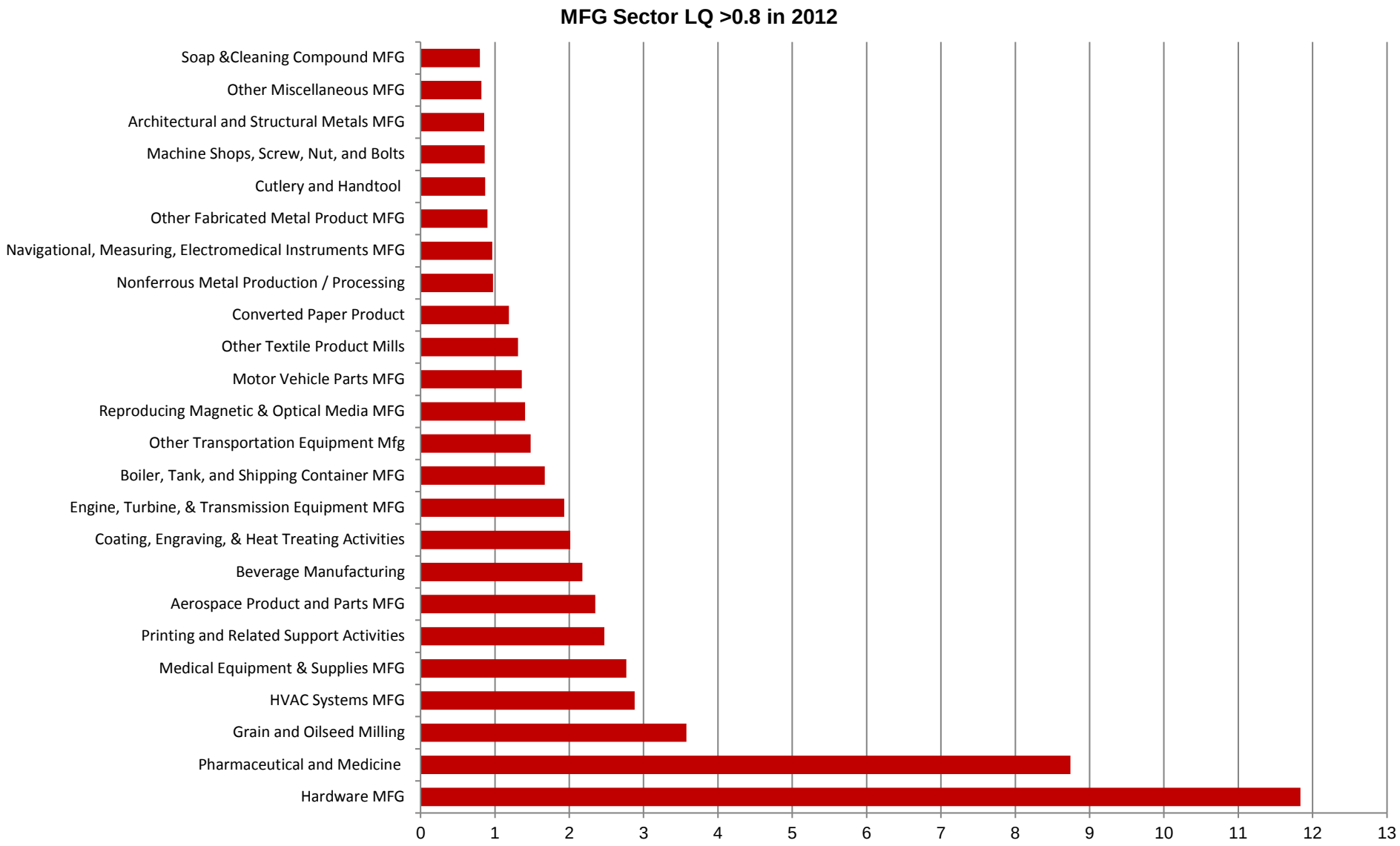
Sectors such as coatings, engravings, and machine shops are important local industrial services. Around the country, many communities have been known at some point as the "tool and die capital of the world". Many of these suppliers have been hard hit by manufacturing transition over the past 30 years; efforts to understand the current position of the supplier base locally will be important, as these companies drive the significant multiplier impact generated by manufacturing.



MARION COUNTY DETAILED SECTOR CHANGES - LOCATION QUOTIENT APPROACH

MARION COUNTY MANUFACTURING SECTORS LQ > 0.8 IN 2012

The chart below summarizes MFG sectors with a location quotient greater than 0.8 in 2012. The 0.8 threshold was used in part to understand the MFG sectors that are on the verge of carrying greater economic weight locally. Moving forward, as part of a business retention and expansion strategy it will be important to identify companies that have potential to grow.

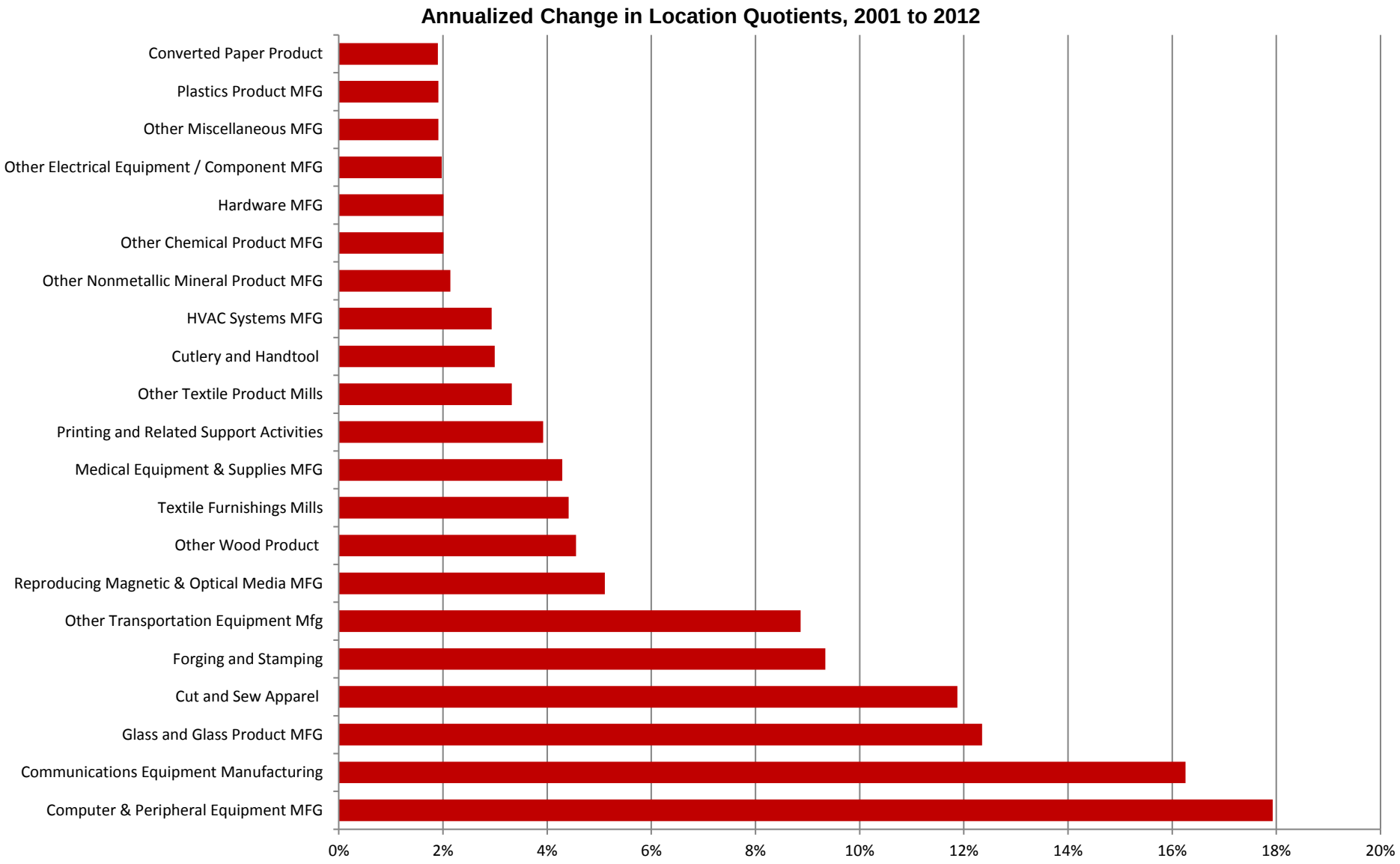


ADVANCED MANUFACTURING

MARION COUNTY DETAILED SECTOR CHANGES - LOCATION QUOTIENT APPROACH

MARION COUNTY ANNUALIZED RATE OF GROWTH IN LQ SINCE 2001

The chart below summarizes MFG sectors which saw the fastest rate of growth in their location quotients between 2001 and 2012. Sectors with faster growing location quotients are likely adding jobs faster than the US average.



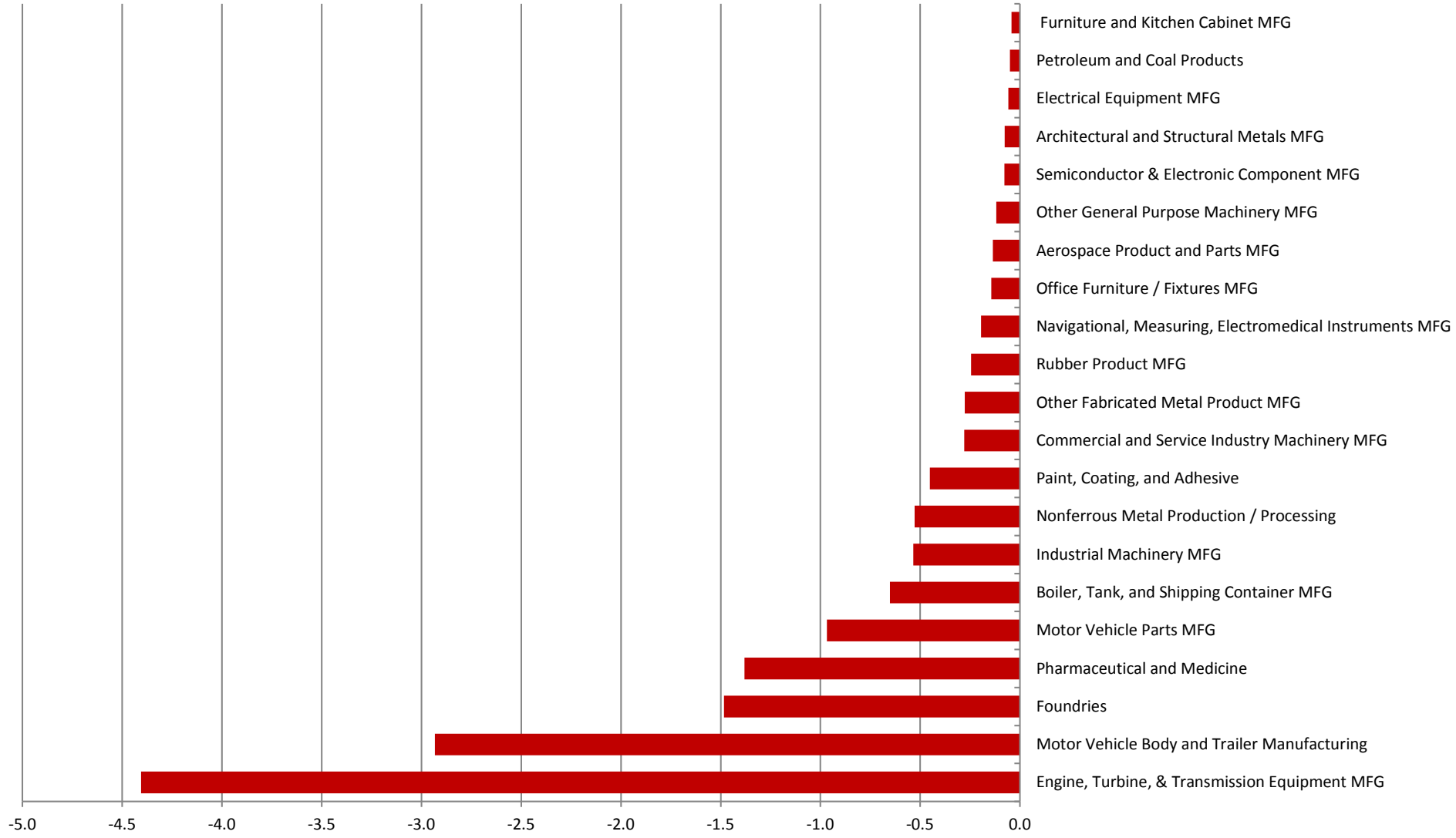
ADVANCED MANUFACTURING

MARION COUNTY DETAILED SECTOR CHANGES - LOCATION QUOTIENT APPROACH

MARION COUNTY MANUFACTURING SECTORS DECREASES BETWEEN 2001 AND 2012

The chart below summarizes MFG sectors with a location quotient that decreased between 2001 and 2012. These sectors would be targets for deeper dives to understand what is changing in each sector

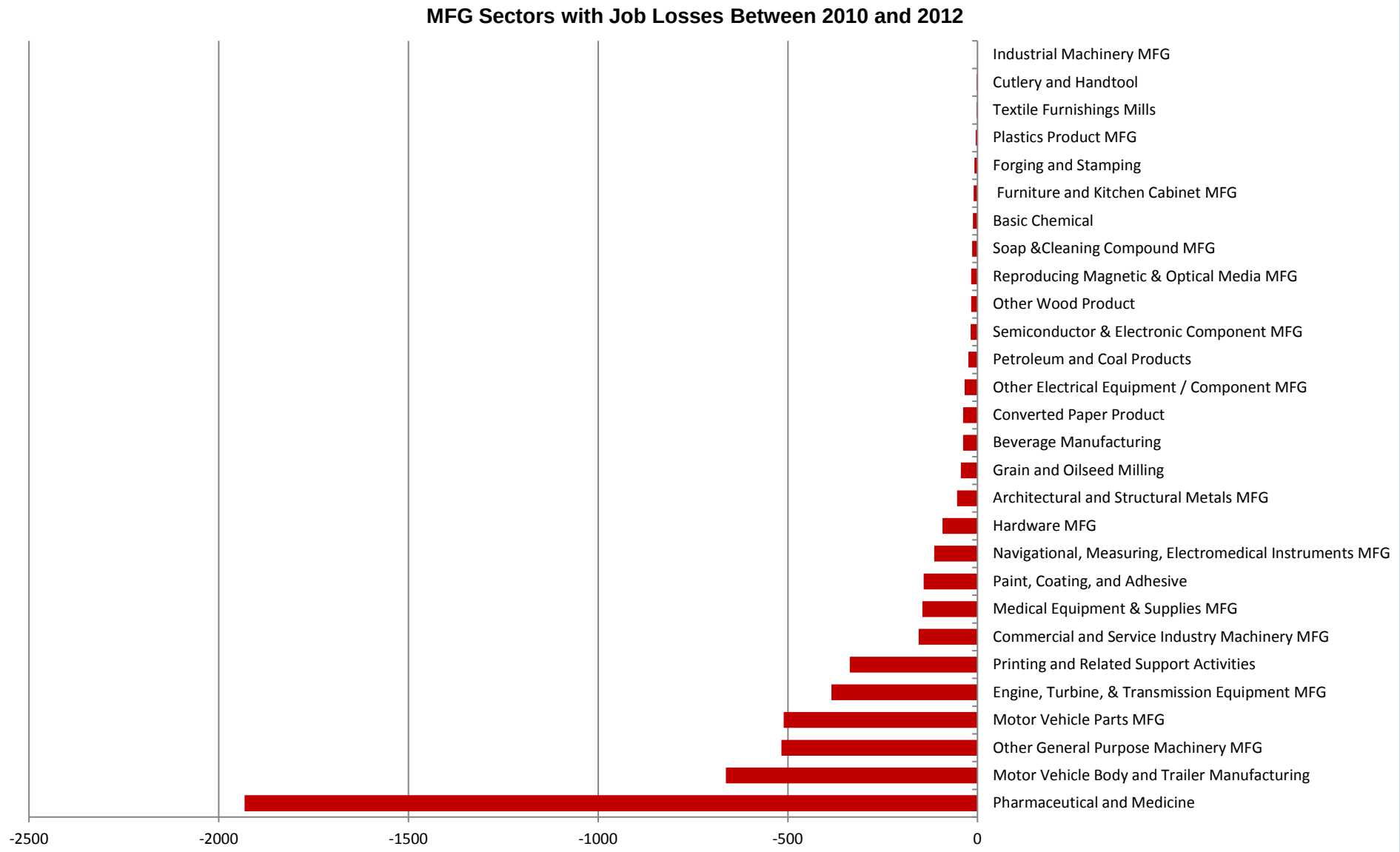
ADVANCED MANUFACTURING



MARION COUNTY DETAILED SECTOR CHANGES - LOCATION QUOTIENT APPROACH

MARION COUNTY MANUFACTURING SECTORS WITH JOB LOSSES BETWEEN 2010 AND 2012

The chart below summarizes MFG sectors with job losses between 2010 and 2012. These sectors would be targets for deeper dives to understand what is changing in each sector

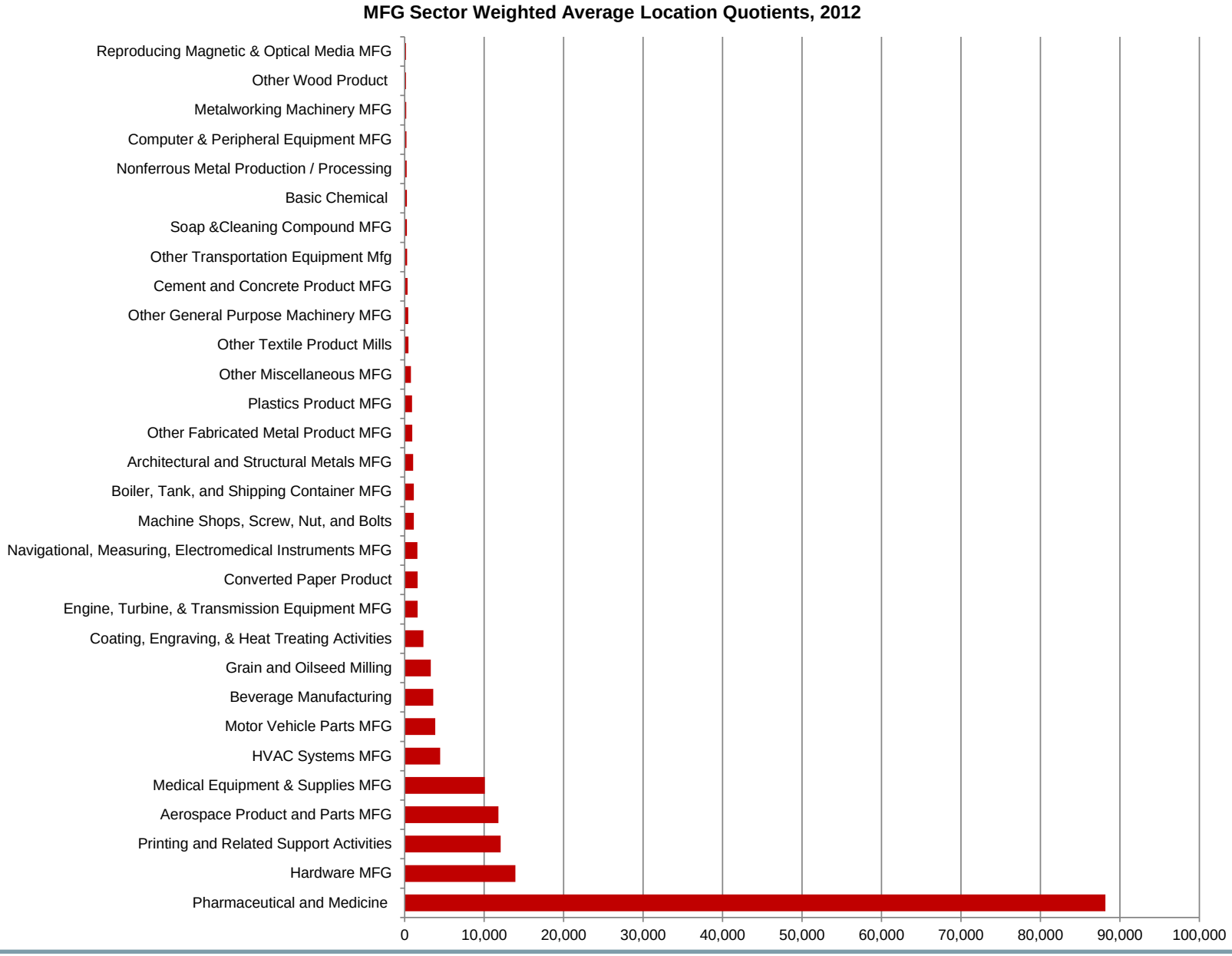


ADVANCED MANUFACTURING

MARION COUNTY DETAILED SECTOR CHANGES - LOCATION QUOTIENTS

MARION COUNTY MFG SECTOR LOCATION QUOTIENT ANALYSIS

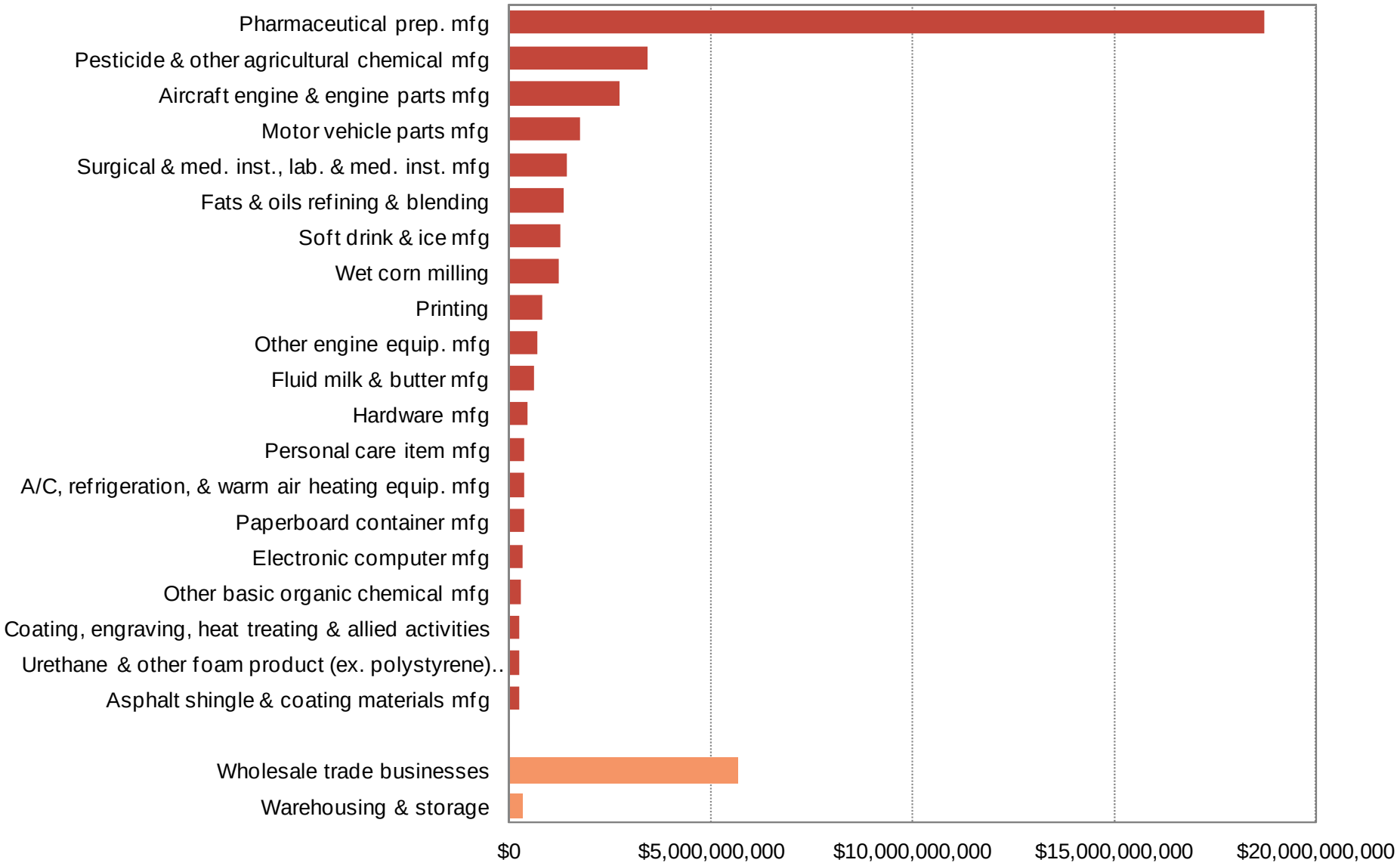
The chart below summarizes weighted LQ's for 2012, where the location quotient for each sector is multiplied by the number of jobs in that sector. The resulting values are intended to only reflect the relative weight or importance of each sector to the county economy. At the broadest level, the chart reinforces the dramatic and outsized economic weight attributed to Pharmaceuticals and Medicine. More disconcerting is the drop in weighted LQ that the Pharmaceutical sector saw from 2001 to 2012, falling from 131,238 to 88,193; again, the precise numbers here matter less then the deeper relationship they speak to, over-dependence on a single sector.



MARION COUNTY DETAILED SECTOR CHANGES

MARION COUNTY LARGEST TOTAL OUTPUT IN MANUFACTURING SECTORS (in sectors with more than 100 employees)

2012 data from IMPLAN for Marion County shows the total output (i.e., sales) for the top 20 manufacturing sectors as they compare to wholesale trade and warehousing and storage sectors. In 2012, the pharmaceutical manufacturing sector had nearly $20 billion in total output, accounting for 15 percent of the total county output.



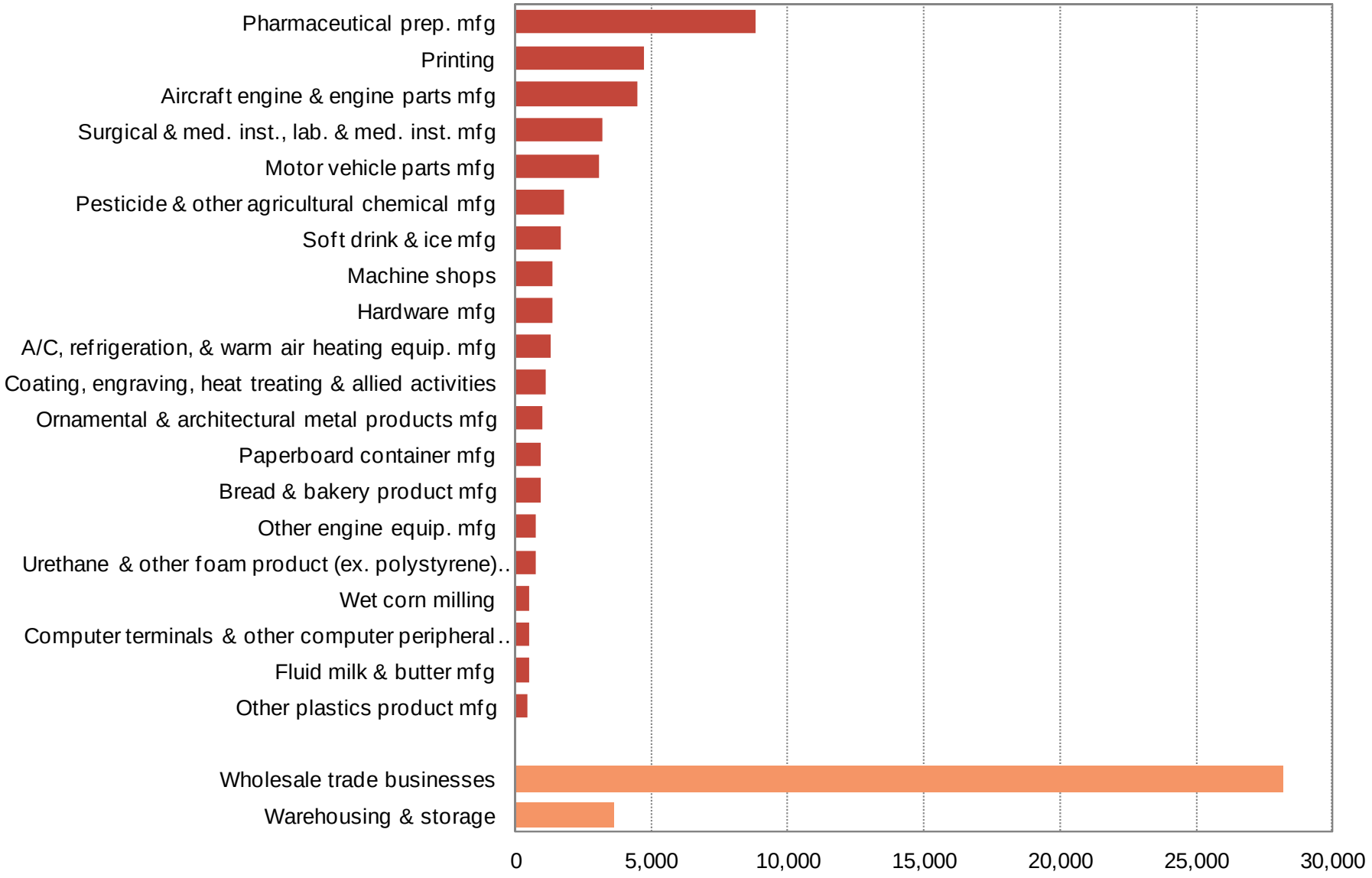
Source: IMPLAN

ADVANCED MANUFACTURING

MARION COUNTY DETAILED SECTOR CHANGES

MARION COUNTY LARGEST EMPLOYERS IN MANUFACTURING SECTORS (in sectors with more than 100 employees)

Among manufacturing sectors in Marion County, the pharmaceutical sector is the largest with 8,800 employees during 2012. The next largest sector is printing with 4,700 employees. This compares to more than 28,100 employees in the wholesale trade sector.



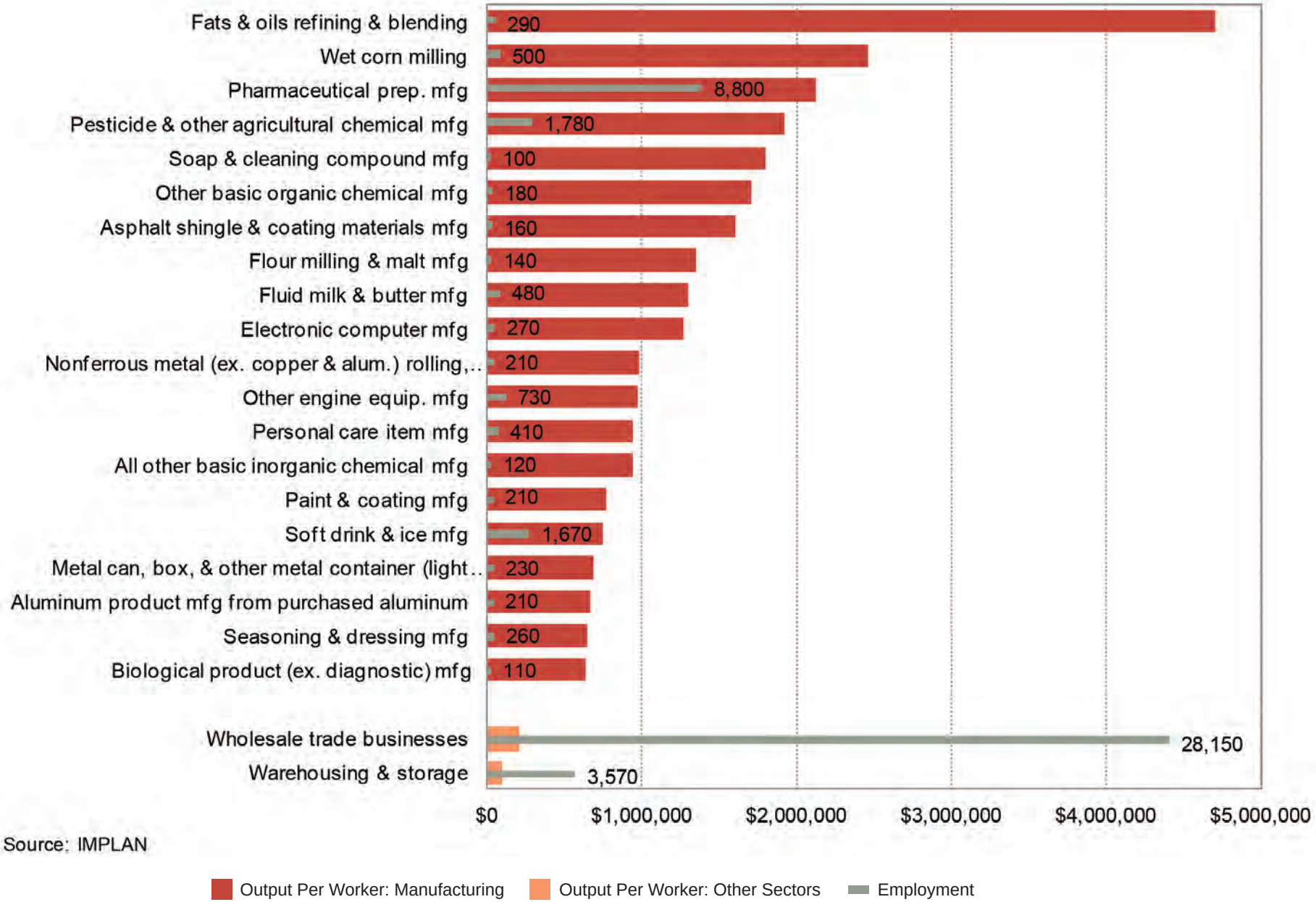
Source: IMPLAN

ADVANCED MANUFACTURING

MARION COUNTY DETAILED SECTOR CHANGES

MARION COUNTY HIGHEST OUTPUT PER WORKER IN MANUFACTURING SECTORS (in sectors with more than 100 employees)

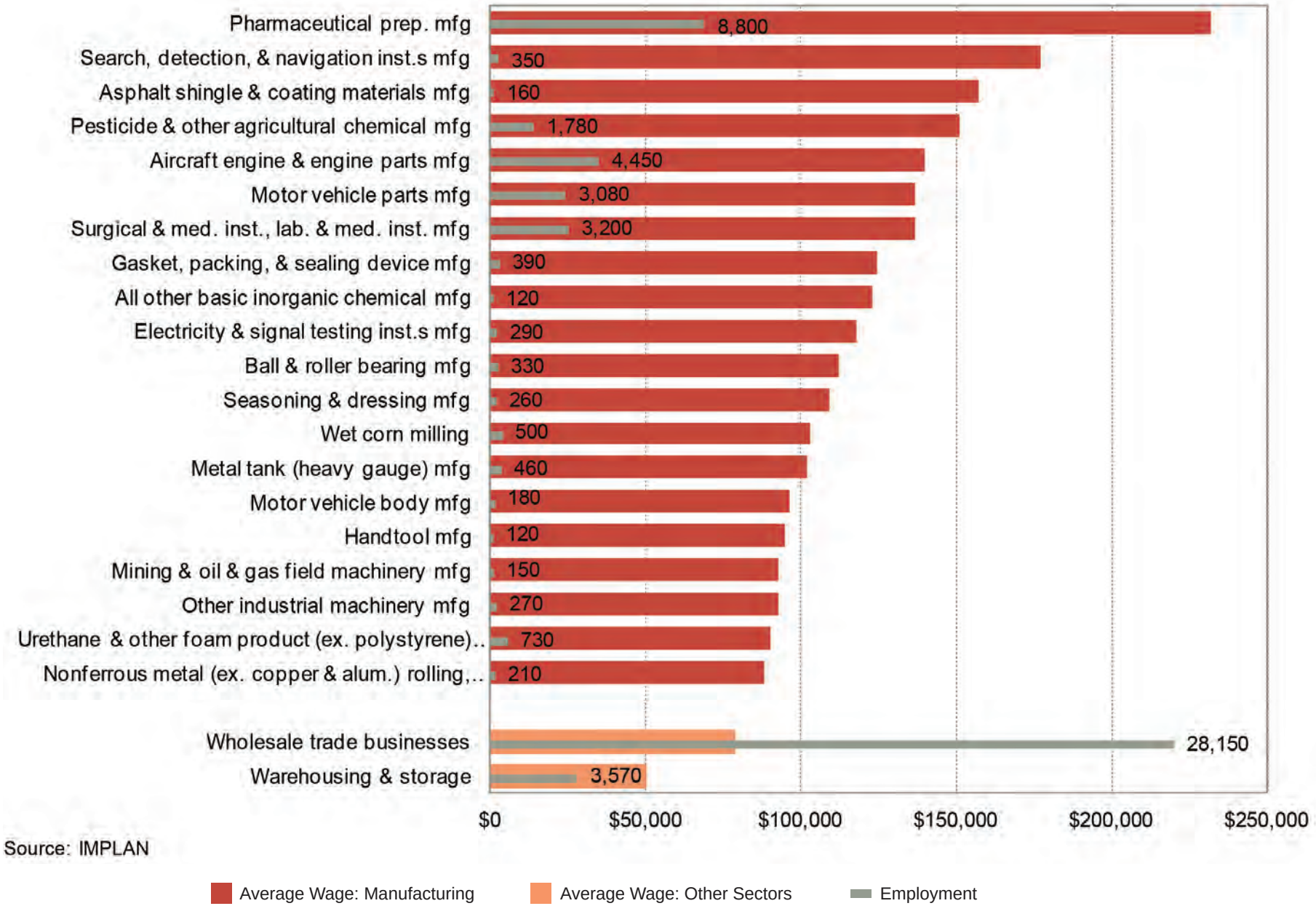
Output per worker was highest in fats and oils refining and blending at $4.7 million per worker. This sector employed 285 people in 2012. Output per worker in the pharmaceutical preparation manufacturing sector was the 4th highest at $2.1 million per worker. However, it is the largest manufacturing sector with 8,800 employees.



MARION COUNTY DETAILED SECTOR CHANGES

MARION COUNTY HIGHEST AVERAGE WAGE IN MANUFACTURING SECTORS (in sectors with more than 100 employees)

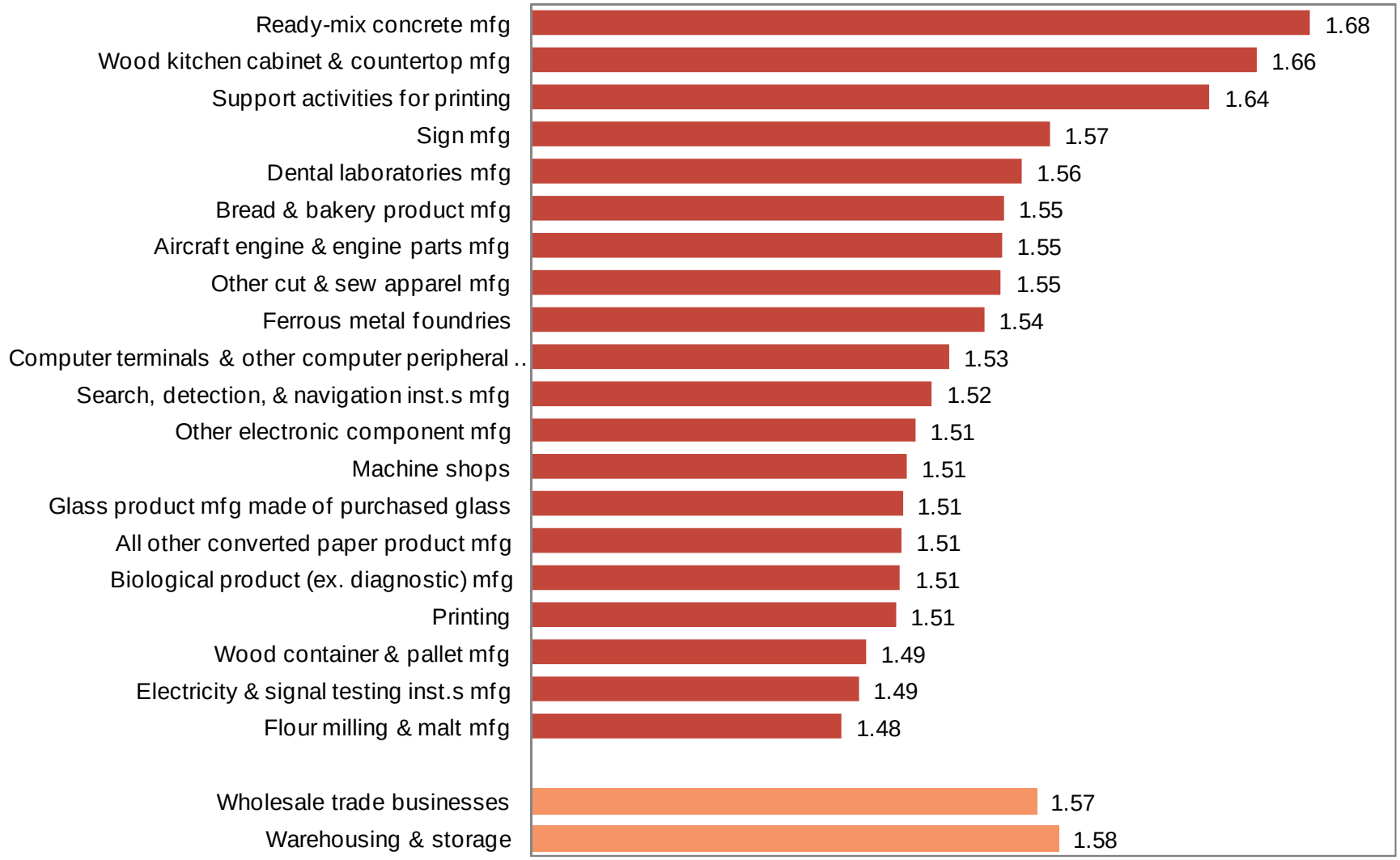
The average wage for workers in the pharmaceutical preparation manufacturing sector was $231,900 in 2012 in Marion County. With 8,800 employees, total wages were $2 billion in 2012.



MARION COUNTY DETAILED SECTOR CHANGES

MARION COUNTY LARGEST OUTPUT MULTIPLIERS IN MANUFACTURING SECTORS (in sectors with more than 100 employees)

Among Marion County's manufacturing sectors, ready-mix concrete manufacturing has the largest multiplier, 1.68, followed by wood kitchen cabinet and countertop manufacturing. For every $100 generated by ready-mix concrete manufacturers, an additional $68 is generated in supporting industries for a total economic impact of $168.



Source: IMPLAN

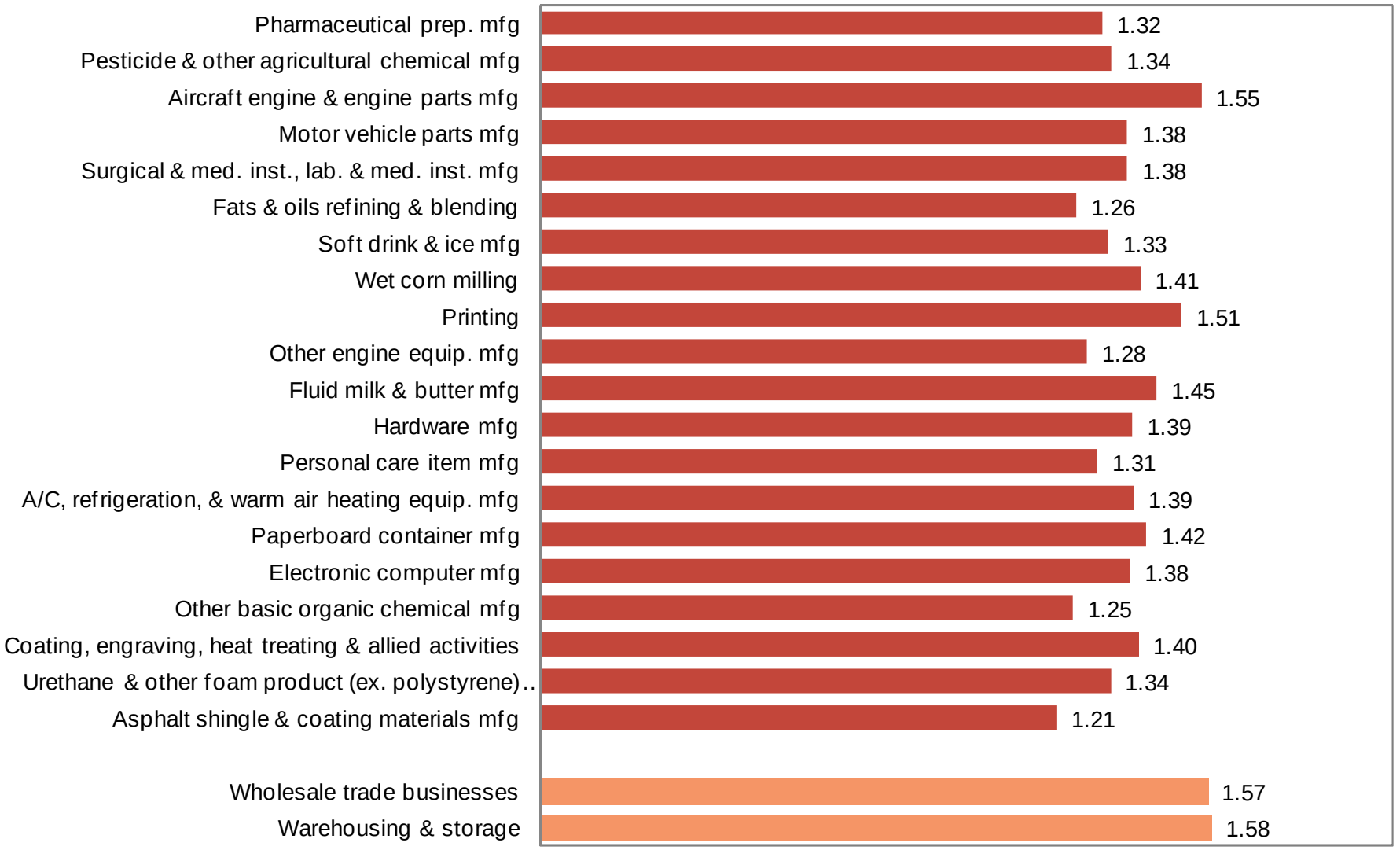
ADVANCED MANUFACTURING

MARION COUNTY DETAILED SECTOR CHANGES

MARION COUNTY LARGEST OUTPUT MULTIPLIERS IN TOP PRODUCING MANUFACTURING SECTORS (in sectors with more than 100 employees)

Pharmaceutical manufacturing, the sector with the largest total output, has a multiplier of 1.32. This may indicate that its suppliers may be located outside Marion County which results in some leakage and a therefore a lower multiplier.

ADVANCED MANUFACTURING

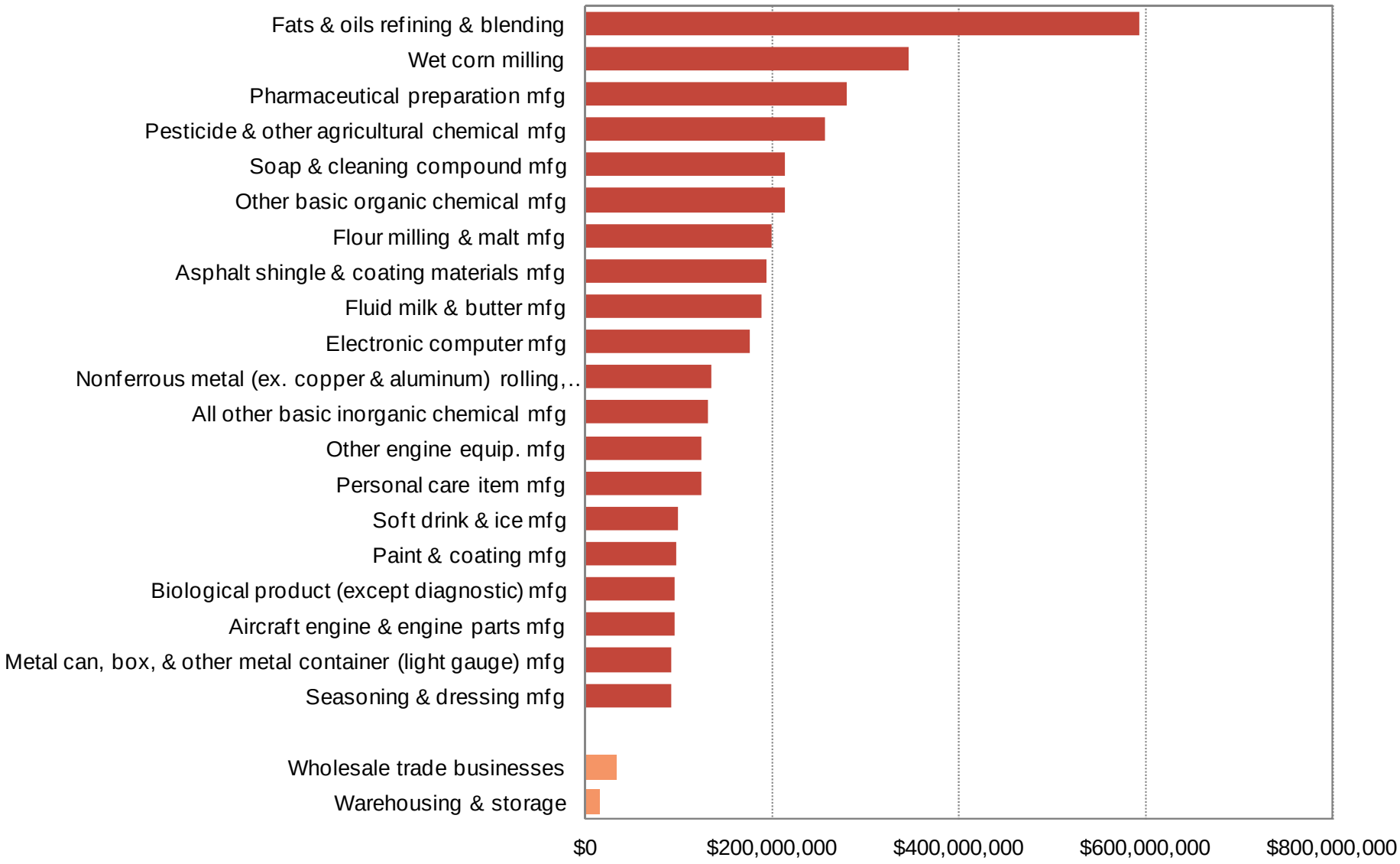


Source: IMPLAN

MARION COUNTY DETAILED SECTOR CHANGES

MARION COUNTY MANUFACTURING SECTORS WITH THE LARGEST TOTAL ECONOMIC IMPACT IF THEY GROW BY 100 JOBS

In Marion County, if the fats and oils refining and blending sector were to grow by 100 jobs, the total economic impact in the county is estimated at nearly $600 million. In the pharmaceutical sector, the impact of 100 new jobs would be $281 million.



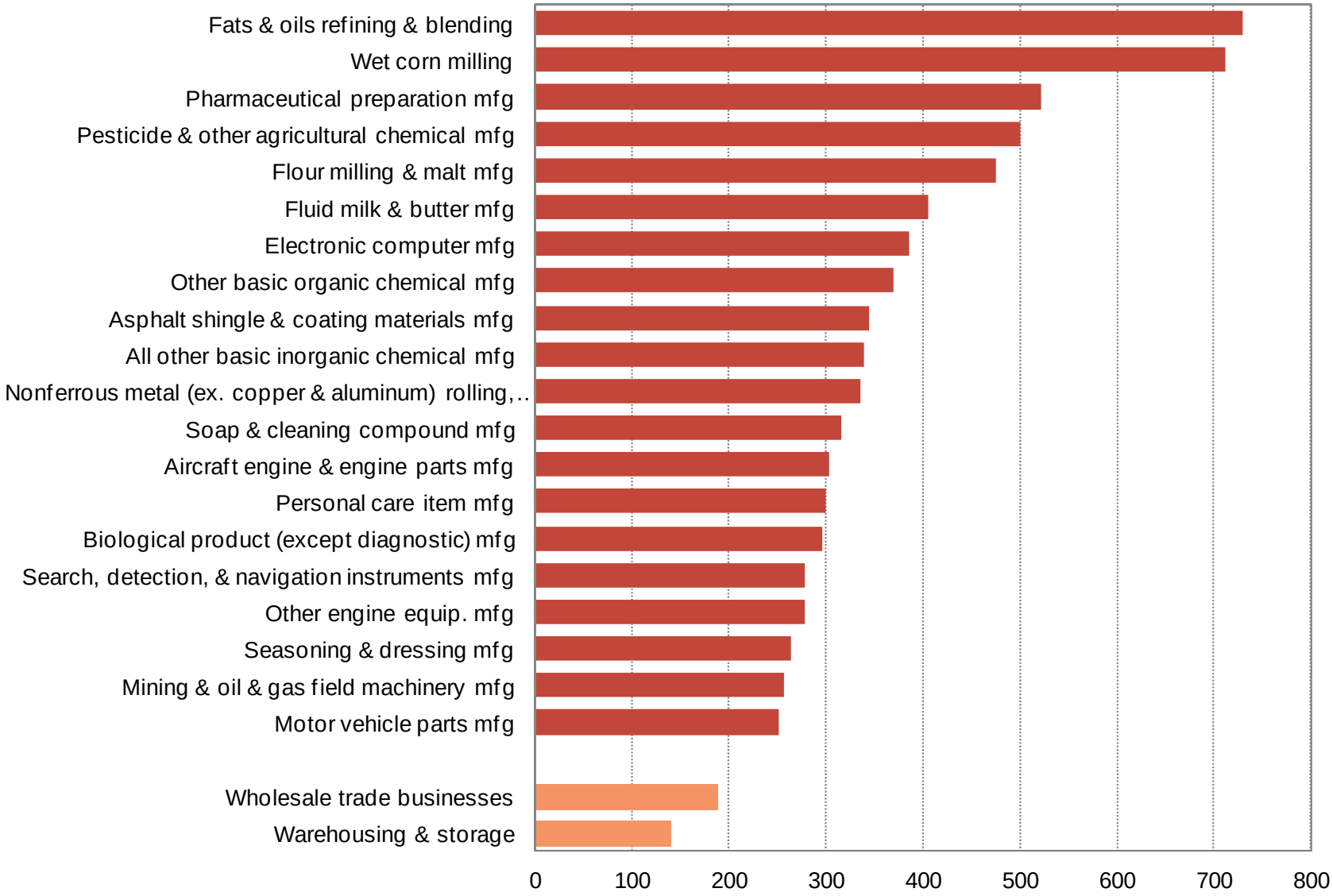
Source: IMPLAN

ADVANCED MANUFACTURING

MARION COUNTY DETAILED SECTOR CHANGES

MARION COUNTY MANUFACTURING SECTORS WITH THE LARGEST TOTAL EMPLOYMENT IMPACT IF THEY GROW BY 100 JOBS

Adding 100 jobs to the fats and oils refining and blending sector could also have a large employment impact. The 100 additional jobs would support 630 others in Marion County for a total of 730 jobs.



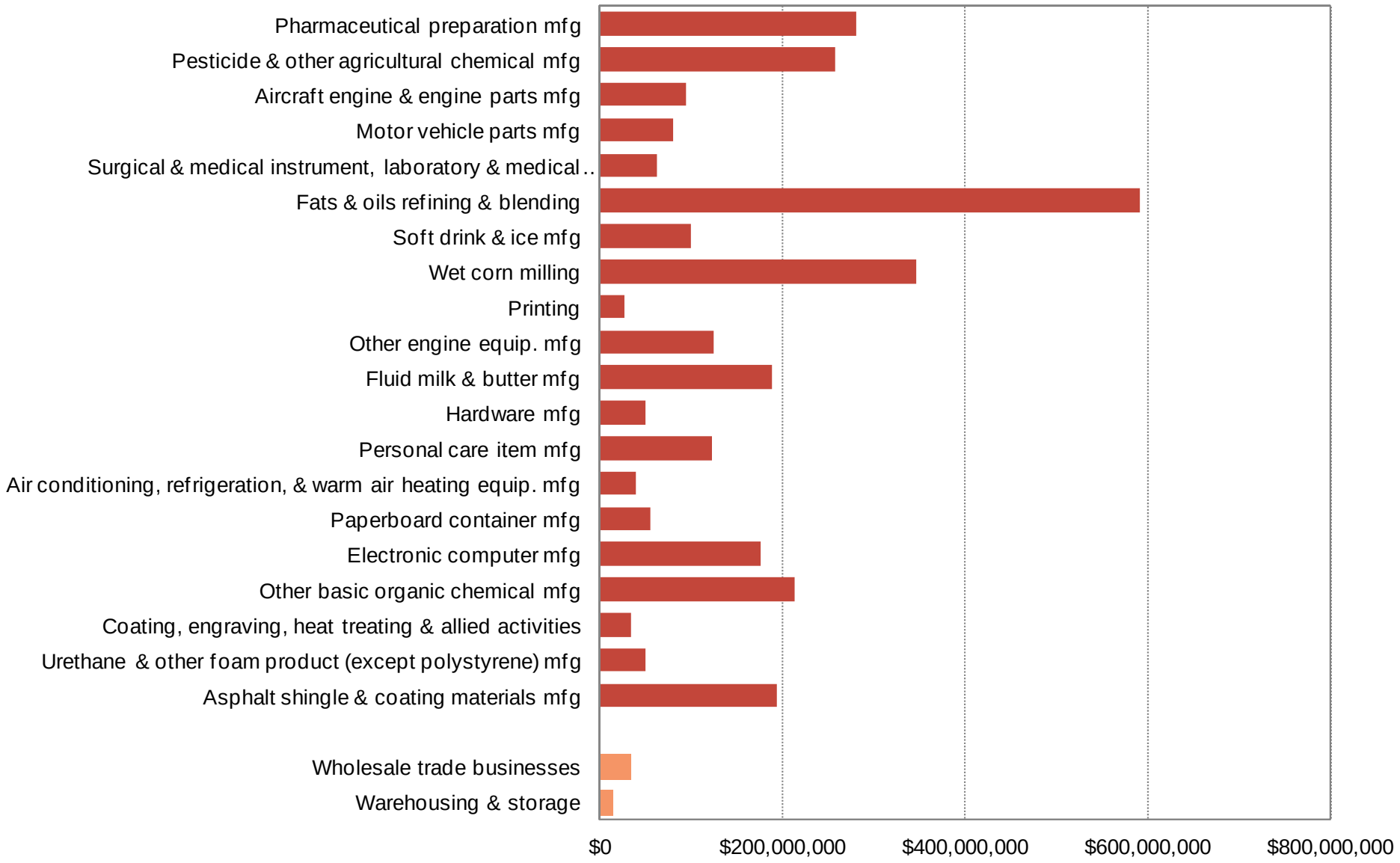
Source: IMPLAN

ADVANCED MANUFACTURING

MARION COUNTY DETAILED SECTOR CHANGES

MARION COUNTY IMPACT OF GROWING LARGEST MANUFACTURING SECTORS (AS MEASURED BY TOTAL OUTPUT IN 2012) BY 100 JOBS

When looking at the largest manufacturing sectors in Marion County, there is a large difference in total economic impact if 100 jobs were added in each one.



Source: IMPLAN

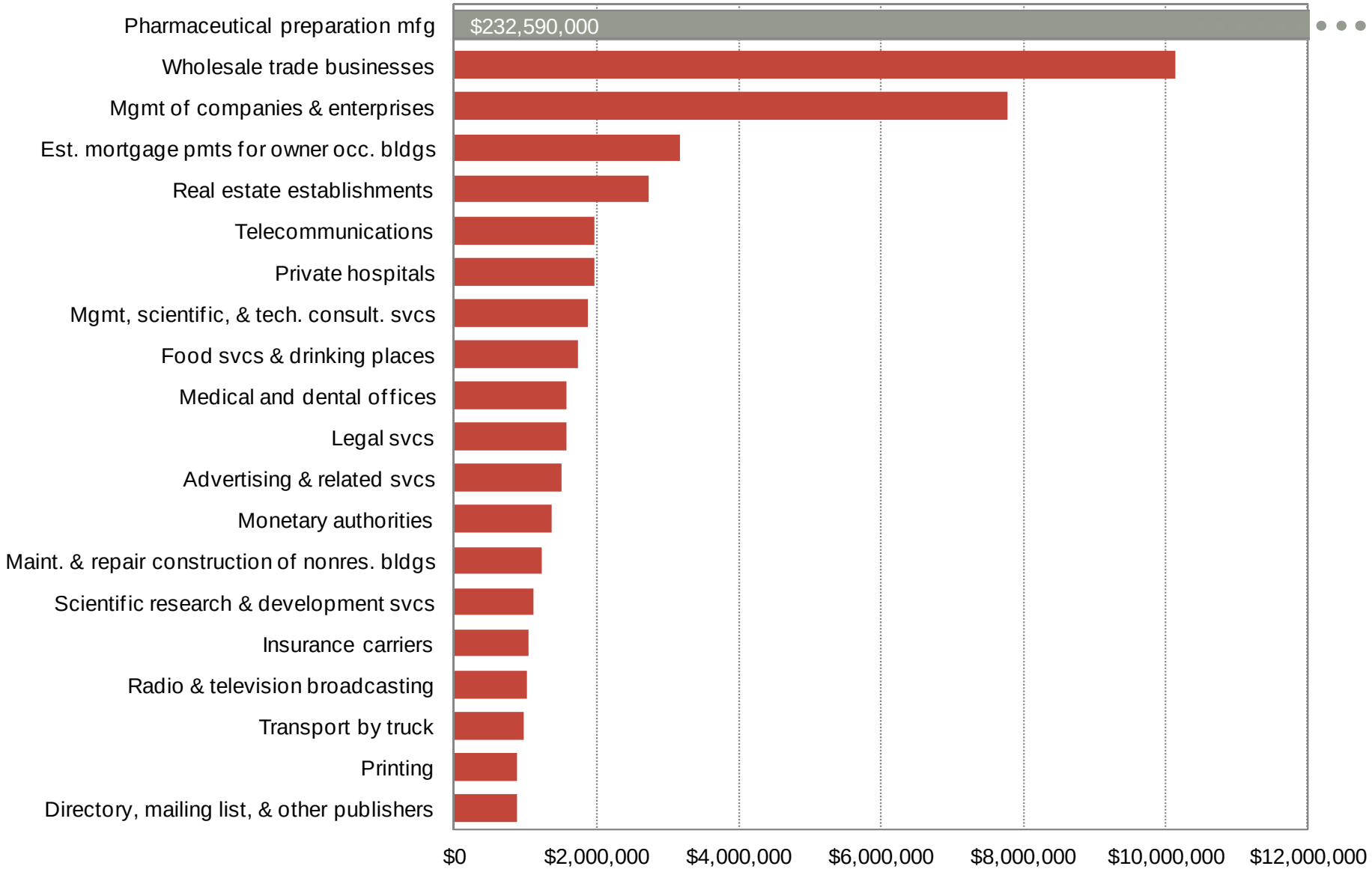
ADVANCED MANUFACTURING

MARION COUNTY DETAILED SECTOR CHANGES

ADVANCED MANUFACTURING

MARION COUNTY IMPACT OF ADDING 100 JOBS IN PHARMACEUTICAL PREPARATION MANUFACTURING SECTOR

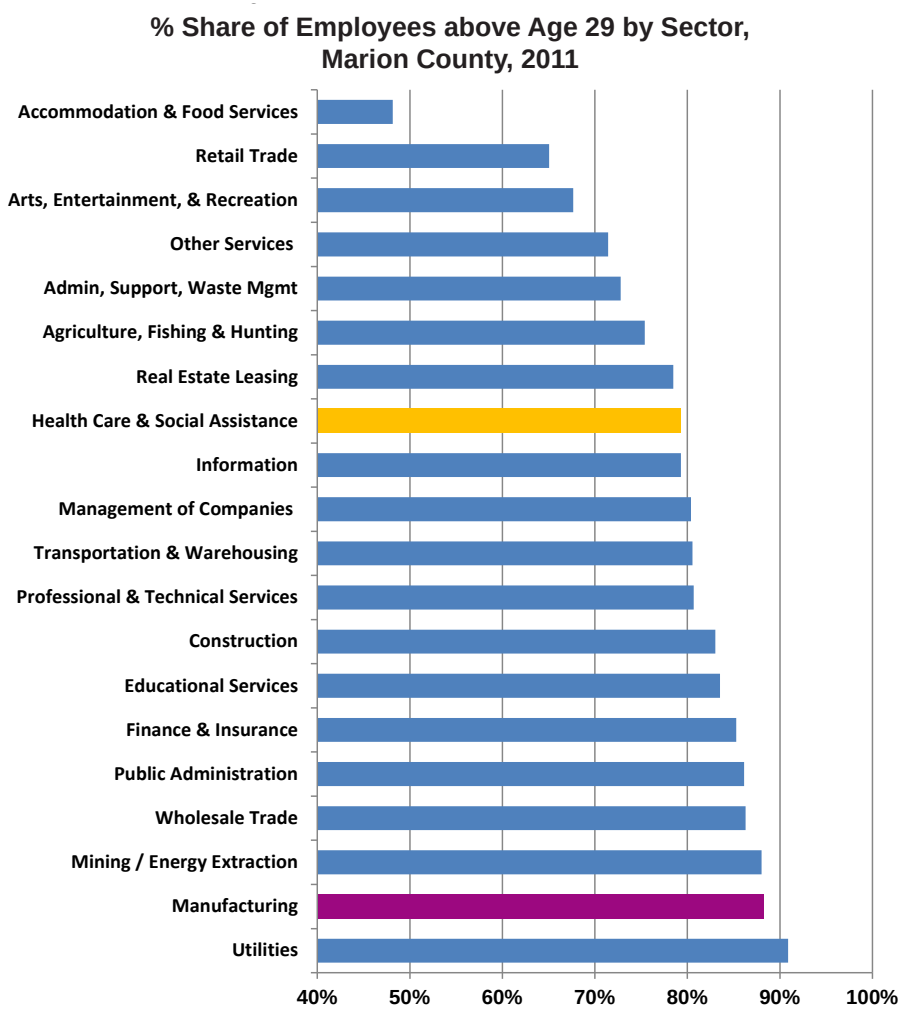
The total impact of growing the pharmaceutical preparation manufacturing sector in Marion County by 100 jobs is nearly $297 million. The largest sector impacted is itself at approximately $233 million. This chart shows what other sectors also gain including wholesale trade, real estate and other support services.



Source: IMPLAN

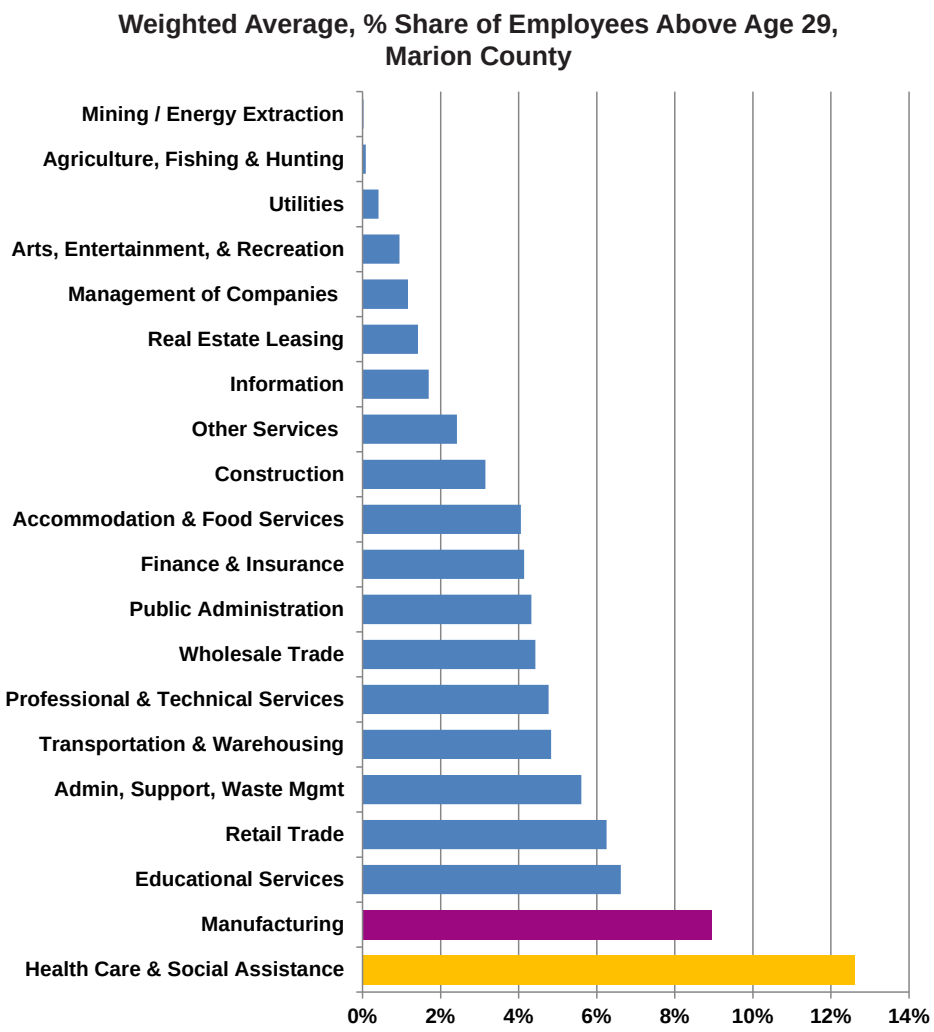
MARION COUNTY DETAILED SECTOR CHANGES

% Share of Employees Above Age 29 by Sector, Marion County, 2011



The chart above reinforces the reality that the average age of employees in manufacturing is quite old, with almost 90% of employees being above the age of 29 in 2011. This point reinforces both short-term (3-5 year) concerns regarding availability of skilled trades as well as structural (5 to 10 year) concerns as older workers retire and need to be replaced. Other cities have made significant investments in workforce training to address these concerns. In Wichita, KS, local officials were concerned enough about impending retirements that they supported the formation of an skilled training center focused on aerospace.

Weighted Average, % Share Employees Above Age 29 by Sector, Marion County



Similarly, the above chart looks at a weighted average of the percentage share of employees in sectors above age 29. Manufacturing is the second largest sector, with the most pressing retirement challenge. Using the weighted average approach, Health Care and Social Assistance emerges as the top category, which is due in part to the significantly larger number of employees in this sector, compared to manufacturing. In general, employees in the health care and social assistance sector are younger, compared to employees in manufacturing.

Future Manufacturing

FUTURE MANUFACTURING SECTOR DISCUSSION

This section of the report details trends regarding emerging sectors and technologies that are creating new economic opportunities in advanced manufacturing. The discussion builds from the reality of significant change which is unfolding across manufacturing today. Throughout history, manufacturing has been known as highly capital intensive, with high costs of entry which has tended to discourage new entrants. Moreover, manufacturing is driven by a constant need for process innovation, i.e. finding cheaper and faster ways to build the same thing or make it better/ safer. Sources indicate that these incremental innovations need to occur on a regular basis, driven by communication with suppliers and customers, whose needs and expectations change constantly. Given the high costs involved, more radical innovation has tended to be discouraged.

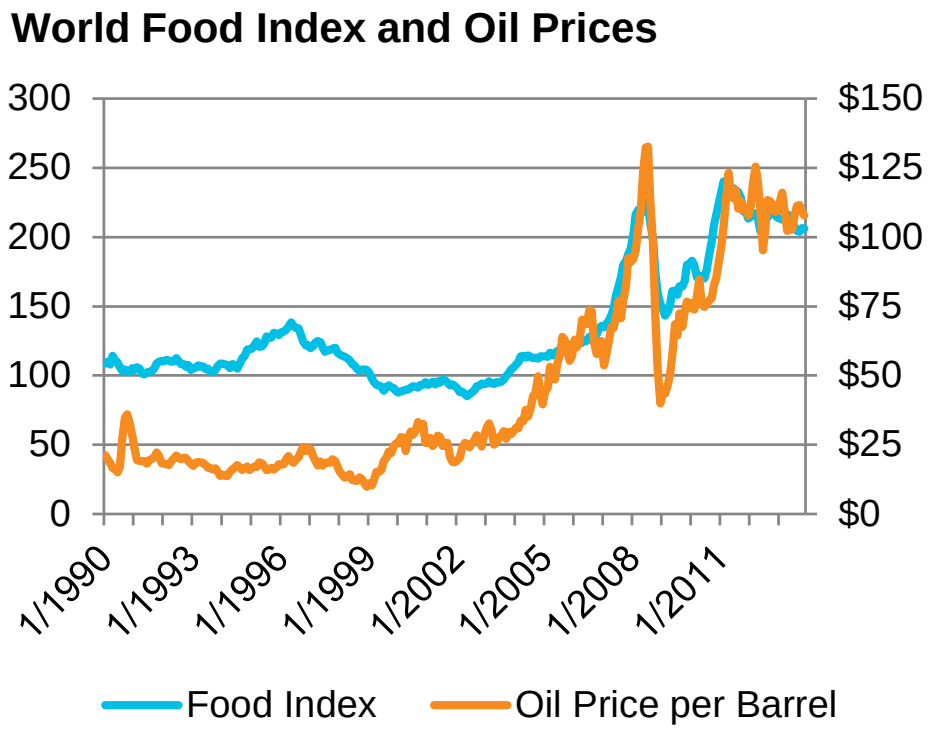
For Indianapolis, as the Great Recession fades into the past, it is clear that there are a number of potentially radical innovations that have the potential to reduce barriers to entry and expand opportunity. Concepts under discussion include:

- Urban agriculture / local food
- Anaerobic digestion for power generation
- The future of automotive
- 3D printing
- Autonomous vehicles
- Solar Power

URBAN AGRICULTURE

Growing food within cities is experiencing a resurgence in many places across the United States. Urban Agriculture (UA) has many advantages:

- Proximity to markets. Both food and food waste are located near population centers.
- Up to 40% of food in the U.S. is wasted; this can be used to create renewable energy through anaerobic digestion. Food waste is the number one material disposed in U.S. landfills.
- Growing demand for local food. Benefits of local food include fresher food and support for the local economy.
- Adaptive re-use of available land. Sites for UA include defunct industrial buildings or vacant land lots.
- The World Bank concluded that the largest driver in food price increases is the price of oil. Oil is used to run farm equipment, for food transportation, and in fertilizers. UA reduces the total "food miles" produce travels from farm to table, which reduces the amount of oil products used for transportation.



Source: UN FAO (food index with 2002-2004=100), US EIA (oil prices) for Brent oil (a worldwide benchmark). Data in nominal prices. The World Food Index is a measure of monthly change in international prices of a basket of food commodities. it consists of the average of five commodity group price indices, weighted with the average export shares of each of the groups for 2002-2004.

ANAEROBIC DIGESTION

UA is a way to integrate the technology of anaerobic digestion (AD) into the urban setting. AD essentially converts food and other waste into biogas, a renewable energy source, and fertilizer, an input into agriculture. Urban agriculture operations can become closed-loop energy systems, using no power from the grid while simultaneously producing a variety of food.

AD is the process of anaerobic bacteria breaking down organic matter within a contained, oxygen-free environment. The organic material transforms into biogas and sludge. In the UA context, inputs can include food waste, brewery byproducts, and livestock manure. The biogas produced, a mixture of mostly methane and carbon dioxide, can be 1) used directly as energy on-site; 2) burned to produce electricity on-site; 3) sold and piped off-site; 4) burned to produce electricity and sold off-site; 5) flared, if produced in excess.

The sludge produced can be used as fertilizer within the operation or sold for additional revenue. Most of these options either reduce operation costs or increase revenues to the operation. These options positively impact the entity's economic position.

URBAN AGRICULTURE: OPPORTUNITIES

Opportunity #1: Increase Local Employment and Income Multiplier Effect

Producing food within communities increases the local multiplier effect: dollars spent on local food flows to the UA workers, which increases wealth within the community. Studies in Iowa concluded that restaurants buying food from local sources has a job income multiplier of 1.54, compared to 1.2 for other restaurants.

Most UA operations expressly support building the local employment base. Two large UA entities, Growing Power in Milwaukee, WI and The Plant Chicago, focus on employment in distressed areas. The Plant Chicago also supports entrepreneurial activities. A focus on craft goods (canned goods, beer, beekeeping, etc.) and innovative methods/ products create value-added products with a higher margin. On a larger scale, a density of specialized craft skills can be leveraged to create an urban agriculture cluster unique to Indianapolis, which can further spur innovation and therefore economic activity.

Opportunity #2: Renewable Energy Production

Production of renewable energy is a key component in reducing greenhouse gas emissions worldwide. AD technology is taking root in many countries throughout the world, particularly Germany. As of 2010, the country has nearly 6,000 biogas plants, an increase of 600% over 11 years. Each year, 4.2 million tons of food waste and 4.5 million tons of landscaping waste is collected for biogas creation. In the United States, anaerobic digesters are found on farms at wastewater treatments plants, leaving the opportunity to convert the 40% of wasted food into energy within UA facilities.

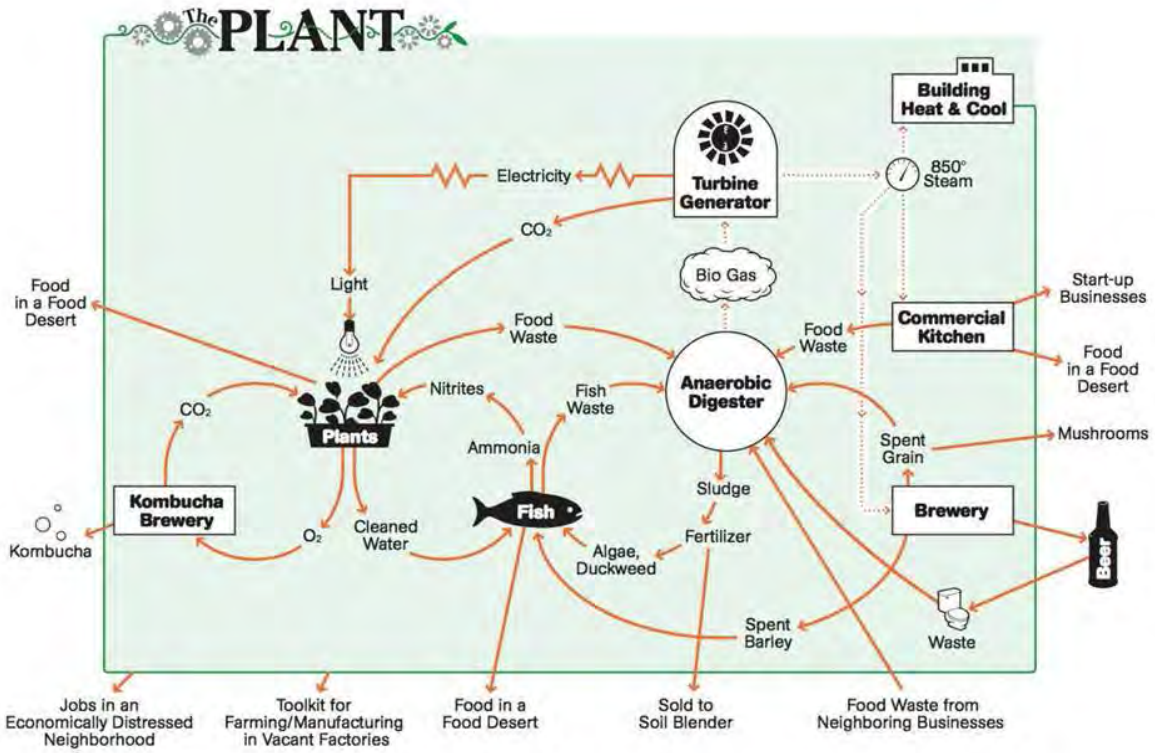
AD is a relatively untested technology within the context of urban agriculture and its financial feasibility is unproven. Therefore, for smaller urban farms, the highest and best use of biogas is directly and on-site. Utilization of the biogas has an energy conversion of 75-80%, as opposed to the 20-30% efficiency for electricity production from biogas.

Currently, the State of Indiana has a grant program for electricity producers to subsidize the costs of connecting to the energy grid. The legislature set a voluntary goal of 10% clean energy by 2025. Lapsed programs include grants for renewable energy production and purchase and a biomass feasibility study. The utility Indianapolis Power and Light recently closed applications for purchasing power from renewable energy facilities, including from biomass. Federal support includes an electricity production tax credit for closed-loop biomass systems and programs from the 2008 Farm Bill. Indianapolis has the opportunity to support the UA/AD industry through policy decisions. Growing Power collects 44 million pounds of food waste yearly in Milwaukee while The Plant Chicago has plans to use a digester to heat their operations.

URBAN AGRICULTURE: CASE STUDY

The innovative use of anaerobic digestion is already taking place across the world. In Chicago, Illinois, Plant Chicago uses anaerobic digestion as part of its business model. Some key facts about Plant Chicago include:

- A digester creates biogas, which is fed into a turbine generator. Outputs include steam heat for various operations and electricity for lights. The sludge is used as fertilizer and creates revenue.
- Plant Chicago is housed within a converted industrial building.
- Plant Chicago uses agricultural waste for many closed-loop systems. Within the aquaponics system, fish waste is used as food for plants. The oxygen produced by the plants is used in a kombucha brewery. In-house brewery waste is used within the anaerobic digester.
- Plant Chicago's social goals include employment and food opportunities in distressed neighborhoods.



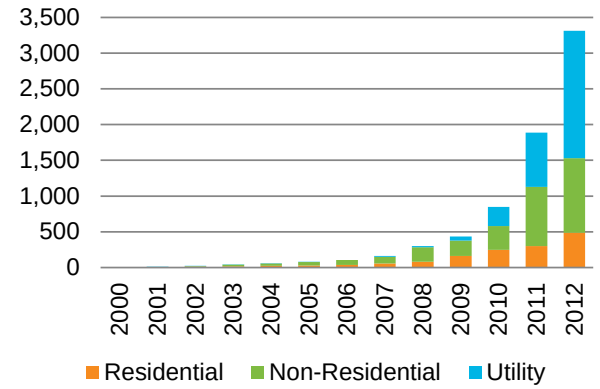
Source: http://www.plantchicago.com/wp-content/uploads/ThePlantDiagram.jpg

SOLAR POWER ON THE RISE

Dramatic decreases in the cost of solar panels have led to dramatic growth in the solar industry. Solar photovoltaic (PV) installations have exploded in recent years. The third quarter of 2013 was the second largest on record for the U.S. solar industry in terms of added capacity. The US share of worldwide solar capacity has also grown to nearly 12%.

The Solar Foundation (TSF) conducted a national survey of solar employers representing nearly 15,000 establishments. Although there are about 2,000 fewer establishments than last year, employment has increased. As of September 2012, there were over 119,000 solar workers in the United States, up 27% since TSF first tracked solar jobs in 2010. Solar employment is expected to grow by 17.2% over the next year to nearly 140,000 jobs.

The top three states by number of solar jobs are California (43,700), Arizona (9,800), and New Jersey (5,700). Together, these 3 states comprise half of U.S. solar jobs. There are 540 solar jobs in the state of Indiana. Compared to the U.S., Indiana has a greater share of jobs in manufacturing and a lower share in installation.



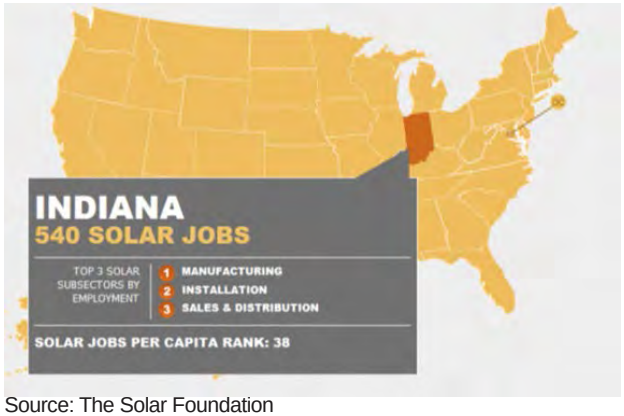
Source: Solar Energy Industries Association

LEVELIZED COST OF ENERGY AND GRID PARITY

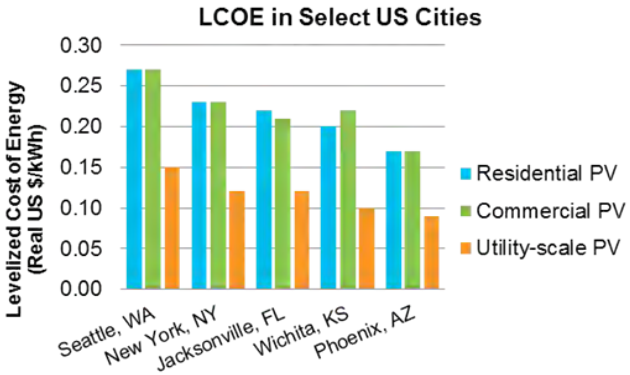
Solar researchers predict that solar is on the cusp of grid parity. The Institute for Local Self Reliance (ISLR) defines solar grid parity as the point when the cost of solar electricity without subsidies is less than or equal to the residential retail electricity rate. In order to compare solar with retail electricity costs, analysts calculate the Levelized Cost of Electricity (LCOE): the cost of solar averaged over a number of years of production.

The LCOE is highly sensitive to installation costs, operations and maintenance, system performance (location and orientation), and financing. LCOE estimates vary widely even under reasonable assumptions, so analysts often report installed costs instead. Electricity costs are also variable across the country, so some places will reach grid parity faster than others (Dynamic Grid Parity).

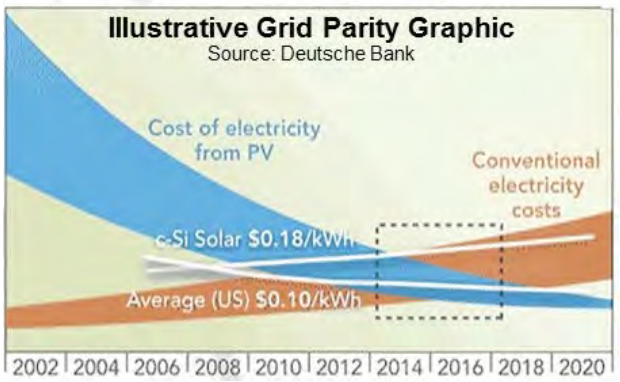
ISLR estimated the LCOE for US metropolitan areas assuming $4.00/Watt installed, cost of solar decreasing 7% per year, and grid electricity increasing 2% per year. Under these assumptions, Indianapolis is poised to be the 39th metropolitan area to reach grid parity, by 2021.



Source: The Solar Foundation



Source: NREL, 2011



SOLAR POWER MARKET

Reductions in PV costs and rising costs of conventional energy create a favorable market for solar in Indiana. In the U.S., the average price of a solar panel has declined by 60 percent since the beginning of 2011. The average cost of a completed PV system has decreased 16 percent over the past year to $3.00/W. Analysts at Deutsche Bank estimate that at $3.00/W, the LCOE is currently at $.11-$.16/kWh in 10 states that have already reached grid parity. While PV system costs decline, the average retail price of electricity in Indiana is climbing. As of October 2013, the average retail price of electricity in the state was $.1155/kW, up 15% from 2011 and up 123% from 2000.

Local and state agencies offer many financing resources and incentives to expand the market for solar. The City of Indianapolis' Green Building Incentive Program reduces permit fees for projects meeting green criteria. Indianapolis Power and Light offers rebates of up to $4,000 for small PV systems through its Renewable Energy Incentive Program. In the state of Indiana, solar systems are exempt from property tax. Indiana allows a personal income tax deduction of up to $1,000 to install a solar-powered roof vent or attic fan. The Indiana Office of Energy Development offers grants under the Community Conservation Challenge program to energy efficiency and renewable energy projects with a community partner.

Source: EPA

SOLAR POWER AND LOCAL ECONOMIC DEVELOPMENT

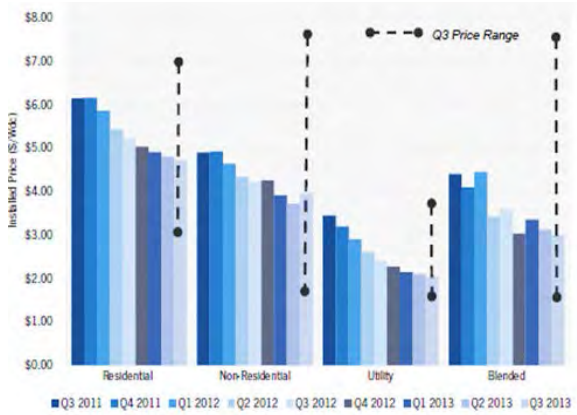
The local economy has much to gain from solar as a distributed generation system. Smaller solar PV projects (<50MW) actually tend to have shorter planning horizons, siting, permitting, financing, and transmission requirements than large projects. By taking into account the local context, distributed solar can be less environmentally disruptive. Distributed solar also has greater transmission efficiency, while the city benefits from reliability in the case of power demand surges.

Notable examples of local governments successfully supporting the local solar industry include the following:

- The City of Austin, TX offers an increased incentive from $2.50 per watt to $3.125 per watt for customers who install PV systems that include equipment manufactured in Austin.
- The County of Miami-Dade, FL gives relocation incentives to qualifying solar thermal and PV manufacturing, installation, and repair companies: up to $9,000 per new job.

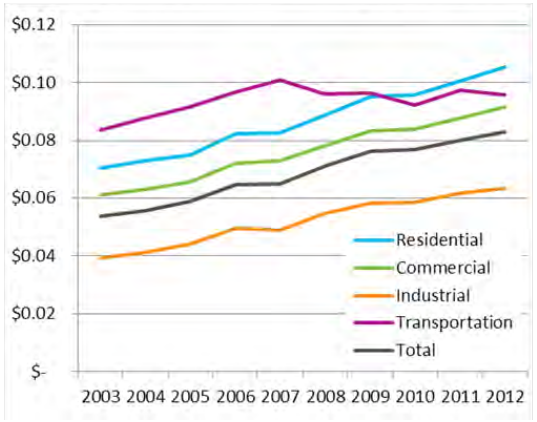
The industrial history of Indianapolis makes the City a potential candidate for "brightfield" development. In addition to commercial and residential roofs, industrial brownfield sites are being redeveloped into brightfields for solar arrays. For example, the City of Brockton, MA installed a brightfield on a what was formerly Brockton Gas Works manufactured gas plant. Because of contaminants, reuse options were limited. Today, 1,500 PV modules are installed on 27 acres. The system is projected to produce about 580 MWH of electricity per year. By converting the land into a revenue-generating asset, the project now funds local renewables businesses in MA.

Average Installed Price of Solar in US



Source: Energy Information Association

Average Retail Price Electricity by Sector in IN



Source: Energy Information Association

AUTOMOTIVE SECTOR IMPLICATIONS

While the US auto industry has been through several periods of economic disruption, the period from 2007 to 2013 is unique in many ways. By 2009, two of the three domestic automakers were forced to reorganize, both filing for Chapter 11 bankruptcy.

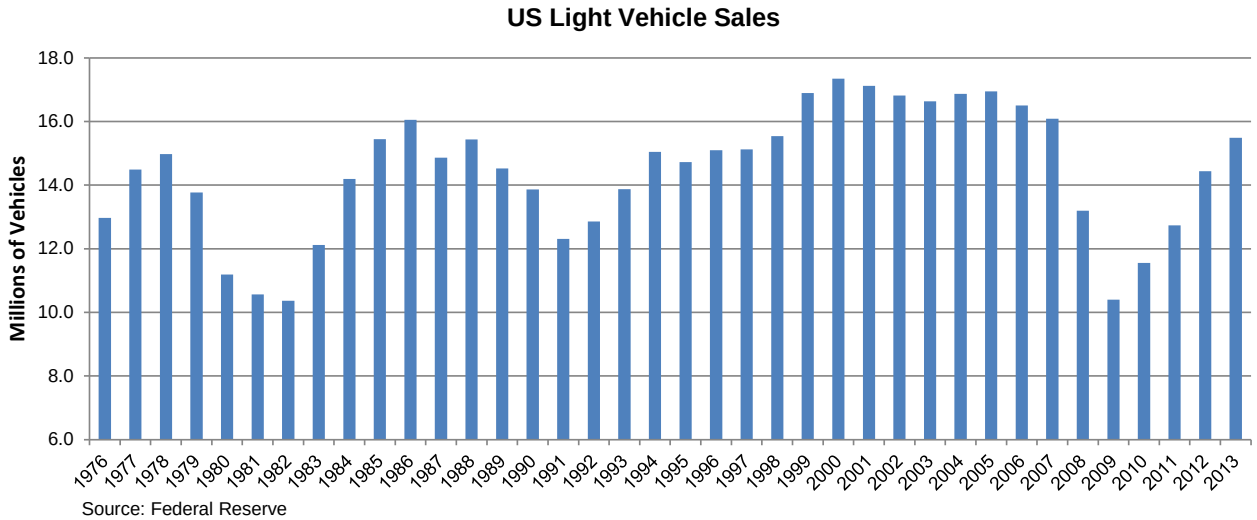
Although auto industry sales levels are recovering, current production remains below pre-recession levels. The resulting decrease in volume is a practical challenge for suppliers, who have needed to diversify to make up for reduced volume.

One result of the recession is that the auto industry has retreated geographically back towards its core, anchored by the I-75 and I-65 corridors (also known as "Auto Alley"), which extends down from Michigan through Indiana to newer assembly locations in the southeast. A majority of recently closed plants were on the periphery of the system.

The industry is still challenged by the reality of over-capacity, particularly in export markets.

On July 29, 2011, President Obama announced a new fuel standard for new light trucks and cars sold in the US. By 2025, all new cars and trucks will be required to meet a performance requirement equivalent to 54.5 miles per gallon. This requirement more than doubles the current Corporate Average Fuel Economy standard of 24.1 mpg, an active step in reducing the nation's dependence on foreign oil. This policy implies a structural change in the types of vehicles manufactured in the next 20 years and beyond, thus manifesting a potential demand for new investments in automobile production and retooling plants.

Dramatic shifts in production since 2006 point to deeper changes that the Auto Industry is now going through. The following elements need to be kept in mind. First, research shows that auto producers are looking at their production processes to reduce the number of activities required to build a car, with the goal of streamlining the assembly line, reducing costs, waste, and the amount of time needed to complete fabrication.



Source: Federal Reserve

The biggest change in this area is the emerging role of Tier 1 auto suppliers, who now provide larger car components (modules), such as dash boards, instrument panels, and seats to the big auto makers for final car assembly, as opposed to smaller individual car parts. While auto manufacturers had the in-house capacity to make all their car parts in the past, economic realities have changed this practice. The Japanese auto makers were the first to move to outside parts suppliers, which led to the formation of Denso, Inc. now one of the largest Tier 1 suppliers, producing heating, ventilation, and air conditioning systems for American, Japanese, and European car makers. Firms such as Magna and Eaton are now in position to theoretically compete with the "Big Three" and assemble cars.

The growth of Tier 1 suppliers is important for several reasons. First, to facilitate development of new models, the auto manufacturers are sharing more information with suppliers such as new car design information, with the expectation that the suppliers will develop in-house design and R&D capabilities to develop new components. As well, the contracts signed by the auto manufacturers are increasingly long-term, i.e. over the length of a model production run, with far greater emphasis on quality, compared to price. For the big auto companies, one additional benefit is that they are able to shift a larger share of factory retooling costs for new models to their Tier 1 suppliers.

As a second process improvement example, suppliers are adapting traditional assembly approaches to reduce costs. In one example, a traditional steel fabrication production process, called roll-forming, could be adapted to build truck beds. Before roll-forming, the truck bed was stamped from a sheet of steel. The problems with stamping were that it required a heavier gauge

steel which was more expensive, produced a product with inconsistent metal thickness and quality, and created excess waste. Sources indicated that the innovation of roll forming for this manufacturing process was significant in that it created a stronger , higher-quality product using lower gauge steel with lower cost, reduced weight and almost no excess waste.

The auto industry is actively moving forward on several technologies that can only be described as radical. Evolving fuel economy standards are a specific driver, pushing the industry toward stronger, lighter weight, lower cost materials, including composites, powdered metals, plastics, ceramics, and aluminum. Obviously, lighter-weight stronger materials are attractive to the industry, which is always aware of the fuel economy and car safety issues. Current announcements by Ford regarding their F-150 switching to an aluminum frame are a critical test in terms of market acceptance, covering insurance companies, dealers, and the buying public.

Equally significant is the growth of the electric vehicle segment, linked with cars such as the Chevy Volt, the Nissan Leaf, and Tesla. In general, while EV's are expected to follow hybrids in terms of market acceptance, there is emerging consensus that true plug-in EV's will be transformative, in part because their power trains require significantly less maintenance, and rely on a lower cost fuel (electricity).

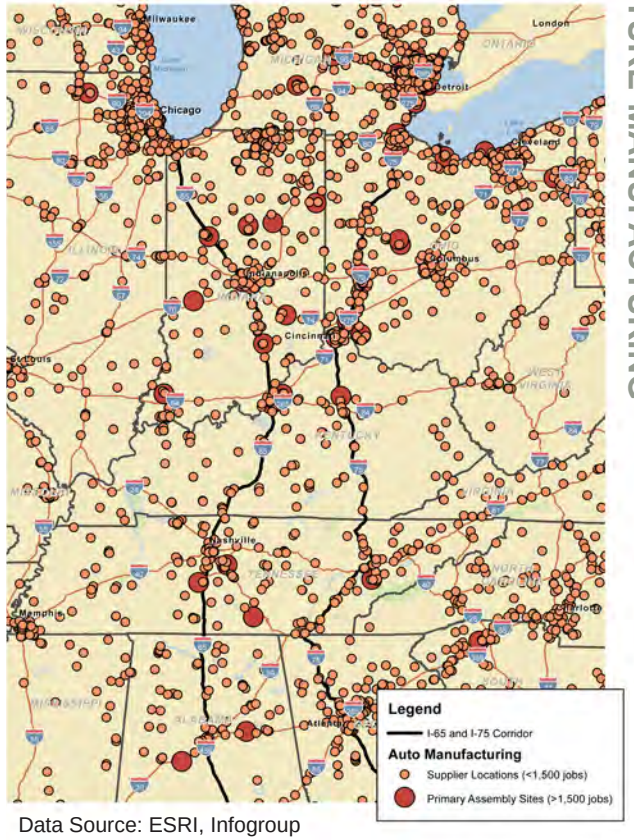
Ultimately, because the auto industry pulls information and resources from so many areas (materials, computers, aerodynamics, design, engineering, etc.) linkages to other industries and areas of the country and world are significant, and create opportunities for spin-off of new ideas. For this reason, the need for collaboration has grown, as cars and trucks are significantly more complex compared to 10 years ago.

One platform for collaboration is the United States Council for Automotive Research (USCAR), an umbrella organization supported by General Motors, Ford, and Chrysler which structures collaborative groups or consortia which focus on specific auto-related concepts. The organization currently has research programs in a large number of areas, including fuel cells, materials and composites (including carbon fiber), energy storage, electrical systems, software, and controls, aerodynamics, fasteners, and adhesives.

The need for research in these areas is on-going. On the manufacturing side alone, there is work looking at new welding technologies for aluminum, and new machining and forming techniques for steel. Also under research are new and more environmentally friendly painting processes, and efforts to streamline and standardize electrical systems and connections in cars.

This last point also speaks to evolving concerns with modern cars, which relate to their increasing complexity. Vehicle electrical distribution systems are complex, requiring as many as 2000 terminals, 300 connectors, up to 80 electronic control units, and 60 or more miniature light bulbs, which are not interchangeable between car platforms, or between companies. Newer models also come with more advanced computer systems and software, of which only a small portion relates to on-board entertainment systems. Of greater concern is the growing need / use of software to manage vehicle performance, safety systems, communications, engine and break systems, electronic control units, and overall emissions. That the 2010 recall of certain Toyota vehicles related in part to software concerns speaks to the growth of these systems.

Auto Industry Employment Along I-65 and I-75 Corridors



Data Source: ESRI, Infogroup

AUTONOMOUS VEHICLES AND AIRCRAFT

The benefits of a driverless vehicles are seemingly endless. Road capacity can increase, driving can be safer, the transportation system can be more energy efficient, and driving can be a reality for many non-driving elderly and disabled. Semi-autonomous vehicle technology is already available today: adaptive cruise control, collision warning, brake assist, self-parking, and blind spot monitoring. Incrementally, technology is developing and vehicles are entering public roads.

- **Google (Prius)**: During testing, Google's test fleet has logged over 500,000 miles on California roads.
- **Ford:** teamed with University of Michigan and State Farm Insurance to develop an autonomous Ford Fusion hybrid.
- **Nissan:** reached speeds of 50 mph on a 2 mile test drive on public roads without incident
- **Mercedes-Benz:** As of Sept 2013, a modified driverless S-500 had driven 62 miles on German city and highway roads.
- Driverless **"pods"** will transport people around Milton Keynes, U.K. at 12 mph on designated pathways in 2015.

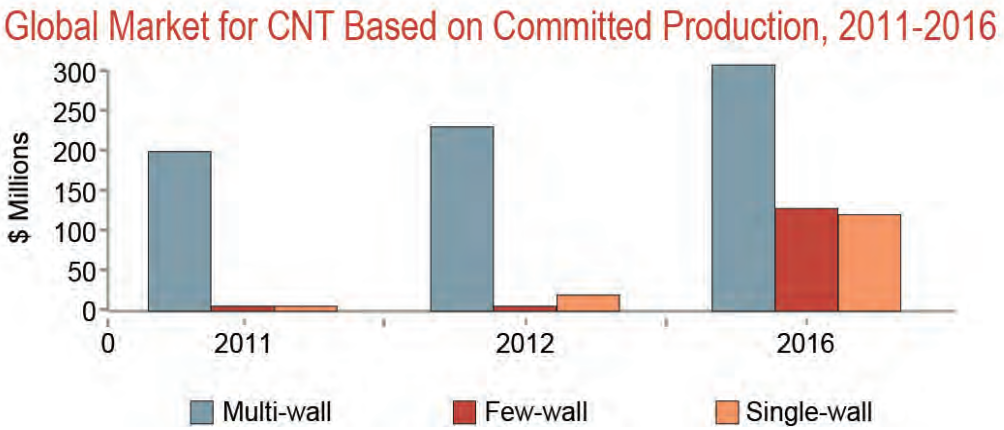
Growing use of unmanned drones in military applications have pushed unmanned aircraft research in public applications. Potential and existing applications include express package delivery, transportation to remote and disaster-struck locations, food delivery, wildlife monitoring, search and rescue, agricultural uses, and police surveillance. By 2025, the Association for Unmanned Vehicle Systems predicts that civil drones could boost the economy by up to $82 billion, including tax revenue from drone sales and over 100,000 direct and indirect jobs created.

NANOMATERIALS

Nanomaterials, sized less than 100 nanometers in size, take on different properties than their larger counterparts. The McKinsey Global Institute's (MGI's) Disruptive Technologies report predicts that carbon nanotubes, graphene, and quantum dots could have significant impacts on the global economy.

Nanotubes have applications related to the automotive, aerospace, and energy sectors, which further promote this strategic cluster. Using carbon nanotubes as the electrodes in capacitors provides more current and better electrical and mechanical stability than other leading materials. The tubes may store energy anywhere along the tube, not only at the ends, allowing researchers in labs in Stanford and MIT to research carbon nanotube ultracapacitors that would rival batteries for cars. The conductivity of carbon nanotubes could provide de-icing and lightning strike protection for plane wings. Graphene, or one-atom-thick sheets of carbon hexagons, could be used to potentially create highly efficient solar cells or to enhance charging and storage capacity of lithium-ion batteries in electric vehicles. Quantum-dot technology, when fully developed, has the potential to consume a fraction of the power LCD technology currently consumes.

Current industry reports argue that the global market for various carbon nanotubes grades was $192 million in 2011. In 2012, sources estimated that the market would generate $239 million. The market is projected to grow over the next five years at a compound annual growth rate (CAGR) of 22.4%, reaching $527 million by 2016. The expanding market is largely due to falling prices. According to MGI's report, ten years ago, the price of a gram of nanotubes was $1,000; today, a gram is as low as $50.



3D PRINTING

Additive manufacturing, or 3D printing, is the process of making a solid object from a digital model. 3D printing begins when a computer-aided design (CAD) file is converted to a surface tessellation file, then transferred to a 3D printer. The shape is then divided into horizontal slices which are added together.

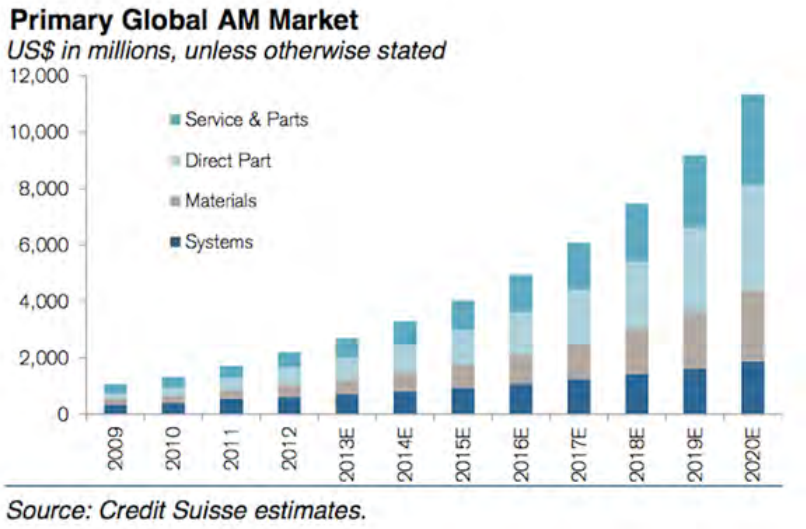
3-D printing applications exist in both the automotive and aerospace manufacturing fields. Aerospace engineers can use the technology for prototyping, tooling, and part manufacturing. Designers in the field have used such printers for concept modeling and prototyping. 3D printing has the unique advantages of scalability and capabilities in advanced manufacturing.

Users of 3D printing span many other industries, such as architecture, dental, and medical industries. One can produce detailed architectural models with an array of materials, including paintable rigid photopolymers or production-grade thermoplastics. Dental labs can produce crowns, bridges, stone models, and orthodontic appliances due to the combination of oral scanning, CAD, and 3D printing technologies. In the health care field, 3D printing easily enables production of surgical guides, prototypes, strong tooling, custom features, and end-use parts.

How is this industry expected to grow? According to Wohlers Associates' 2012 report, Additive Manufacturing and 3D Printing State of the Industry, sales of personal 3D printers grew 200 to 400 percent every year between 2007 and 2011. According to MGI's Disruptive Technologies report, prices for basic 3D printers using Fused Deposition Modeling technology have declined from $30,000 a few years ago to less than $1,000 for some models. Wohlers Associates says most of these low-cost machines are being sold to hobbyists, engineering students, and educational institutions.

The market for 3D printing, including end-use and intermediate parts was $1.7 billion in 2011 and rose 29% to $2.2 billion in 2012. The global sales of 3D printing products are expected to reach $6 billion by 2017 and $10.8 billion by 2021. Credit Suisse estimates that the demand for 3D printing in the aerospace, automotive, healthcare, and consumer sectors alone are sufficient to sustain 20-30% annual revenue growth. The expansion is said to be bolstered by a transition from prototyping to end use parts, as well as expansion of metals printing.

Access to 3D printing could lead some advanced manufacturing companies to produce more goods domestically, boosting the local economy. The combination of 3D printing and advanced robotics could make proximity to end markets and a skilled workforce more important factors than hourly labor rates. However, as the 3D printing process is highly automated, the industry is not expected to create many manufacturing jobs, but rather jobs in research and 3D design. Companies such as GE are already "printing" components of their jet engines, as one notable example.



Indy FastTrack

2014

A market-based, results-driven plan to increase private investment in four underutilized regional land assets that were vacated as a result of the severe destabilization of the automotive industry.

Align Manufacturing with Global Supply Chains

City of Indianapolis
Division of Planning
200 E. Washington Street, Suite 1821
www.indy.gov

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Indianapolis Gregory A. Ballard, Mayor GUIDON DESIGN AECOM

Align Manufacturing with Global Supply Chains 05

CORE FINDINGS

While the Midwestern economy is only beginning to recover economically from the Great Recession, it is apparent that there are deeper structural shifts underway that will also influence the pace and direction of economic recovery. These changes will influence the path forward for Central Indiana, with clear implications for future job creation. The conversation begins with the notion that transportation and logistics are a cost of doing business. As such, improvements to the transportation system, while not necessarily job producing, enhance the competitive position of a region to grow and create employment opportunities in other sectors. For companies involved in freight, implications relate to either reducing the cost of local interchange, or increasing the predictable velocity of freight movement.

For manufacturers and distributors, pressure to reduce costs is driving greater fuel efficiency, interest in alternative fuels, larger distribution buildings, closer physical alignment between intermodal yards and distribution centers, and interest in overweight truck routes to directly connect these assets. There is a need to focus on areas where intermodal connections between truck and rail can be improved, and how these nodes align with land use, particularly underutilized sites proximate to intermodal locations that have growth potential.

Recent experience points to the willingness of railroads (Class 1 and short lines) to invest in projects jointly with the public sector. For the private sector, critical questions relate to confirming benefits and ensuring that outcomes can be controlled.

Sustainability questions associated with freight movement are also moving to the forefront. As freight tends to concentrate in metropolitan areas, “negative externalities” tend to emerge, related to air emissions / air quality, including particulates associated with diesel emissions (PM 2.5), congestion resulting from “run-through” and “last mile” freight movements, and broader social justice and equity concerns. While sustainability arguments have not gained universal traction, experience reinforces the reality of how higher fuel prices are gradually pushing freight from air and truck toward rail and water. From an efficiency standpoint, one rail car can generally carry 112 tons of cargo, or 4,000 bushels of volume, while one truck can generally carry 26 tons of cargo or 910 bushels of volume.

Recent federal policy directives have reinforced basic concerns about US freight infrastructure planning. It is clear that transportation planning does not fully account for freight impacts, and that economic development and transportation programming are largely disconnected. With clear expectations for growth in freight volumes, deliberate responses are needed to resolve all-too-common misalignment between industrial land use and transportation in addition to capacity constraints and modal disconnects. For Indianapolis, key implications include the following:

- While Central Indiana ranked 32nd in total population in 2011, the area ranked 21st in total origin / destination freight tonnage, and 10th in inland port total origin / destination freight tonnage.
- Indianapolis was one of five US metros that ranked in the top 20 for both absolute freight tonnage by truck and the percentage share of freight tonnage by truck.
- As a logistics hub of national significance, Indianapolis must prepare for future growth in freight volumes. Over the next 25 years Central Indiana planners will need to anticipate more than 60% growth in freight volumes, with an increasing percentage of freight moving by rail and intermodal.
- More frequent and longer freight trains and more at-grade crossing delays point to need for more grade separations.
- While logistics can be a strategy for economic development, it is imperative that value be added locally, otherwise mitigating impacts caused by thru-traffic becomes necessary. This point reinforces the need to focus on advanced manufacturing rather than distribution and logistics.
- Central Indiana benefits from the I-40 / I-44 / I-70 Interstate corridor, the shortest, least-tolled route between LA and NYC for higher value goods moved by truck. Values per ton carried by truck along I-70 are higher compared to routes such as I-65 to Chicago.
- More than 60% of all manufacturing jobs in Indianapolis are located within a 1.5-mile buffer of the I-70 and I-465 South interstate corridors.
- The CN / Indiana Railroad partnership appears to be significant for Marion County.

Economic Drivers

Re-shoring of manufacturing is one of the key trends that is beginning to influence the US. The trend is linked with significant labor cost growth in China, rapid labor turnover in India, higher transportation costs and more unstable supply chains. Mexico has been the primary beneficiary of this trend through 2012, including states such as Chihuahua, linked with investments by firms such as Foxconn.

Another driver concerns automotive production. Since 2005, auto production in Mexico has surged, growing from a 10% share of North American production (including the US, Mexico, and Canada) to a 19% share by 2012). Importantly, both US and Canadian auto production decreased in share over the noted period, with Mexican growth in share occurring particularly rapidly since the onset of the recession in 2008, when a significant number of US automotive assembly plants began to close.

Recovery in automotive is also linked closely to the currently unfolding shift toward intermodal service for movement of parts and modules. An increasing share of automotive components are being moved by rail, using intermodal shipping containers.

On a more basic level, the **nature of manufacturing** has changed fundamentally. Where once heavy manufacturing facilities imported raw materials and turned them into finished goods in a single large facility, manufacturing is increasingly an additive process, with products moving through several assembly stages, taking place over large distances and multiple suppliers, linked by increasingly nimble supply chains.

New technologies (3D / Additive Printing) and advanced materials (powdered metals / composites, plastics, and adhesives) will continue to influence manufacturing processes. Using the automotive industry as one example, industry reports point to continued growth in the use of lighter-weight aluminum and reconfigured power trains, along with powdered metals, plastics and special adhesives in future cars.

In line with the above, **distribution** has changed drastically. Where once goods were manufactured, stored in warehouses, shipped to retailers' shelves, and sold, today goods are manufactured as they are needed; inventory is drastically cut down; and global supply chains provide just-in-time delivery. For many companies, "inventory" is more likely to be stored on a truck than in a warehouse.

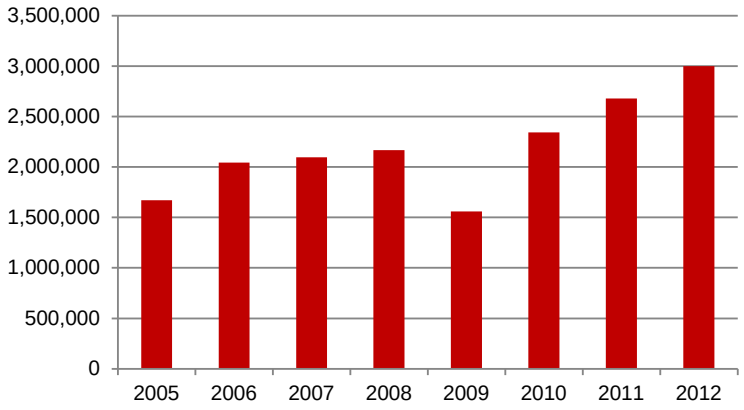
Growth of the Internet has also led to the emergence of larger order fulfillment centers run by companies such as Amazon and others. This point is magnified by continued growth in Internet based shopping. According to the US Census, electronic shopping accounted for more than 10% of retail spending in 2012. Fulfillment centers used to be the reserve of catalog businesses, but have been reborn for the 21st Century.

Federal regulations related to the railroads are continuing to shift. The industry is currently struggling with implementation of Positive Train Control (PTC) . Discussions within the Surface Transportation Board focused on the concept of reciprocal switching for "captive shippers" are also noted.

Workforce transitions, linked with impending Baby Boomer-generation retirements, will continue to challenge corporate America, and influence the economy as a whole. While the oldest Boomers turned 65 in 2011, by 2029, all of the Baby Boomer generation will be 65 and older. The railroad and manufacturing sectors are in the midst of pronounced generational changes, with considerable retirements coming in the next 10 years.

Air quality regulations will continue to impact transportation. While already twice as efficient as trucks in moving intermodal cargo, EPA air quality requirements will further transform rail transportation in the next 10 years. Growth in freight traffic directly relates to use of diesel fuel, with related concerns for particulates (PM 2.5), as well as broader social justice issues.

Annual Vehicle Production, Mexico

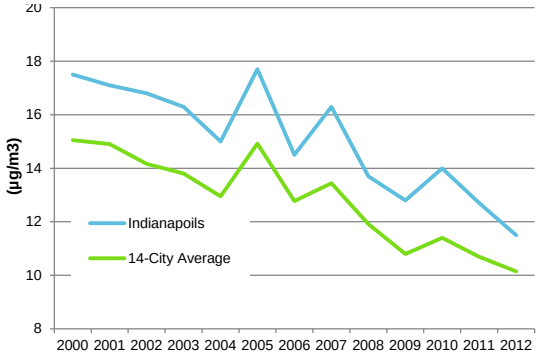


Air quality regulations are also impacting energy markets, linked with the impact of a reported 27 gigawatts of coal-fired capacity set to retire within the next several years. New extraction technologies have also increased the supply and lowered the cost of oil and natural gas, the latter of which is beginning to help manufacturing sectors that rely on natural gas as a feedstock. Even as domestic consumption has decreased, coal exports have grown dramatically. Growth has put pressure on existing export facilities and supply chains. Regions that produce lower-sulfur coal are likely to see growth in demand in coming years.

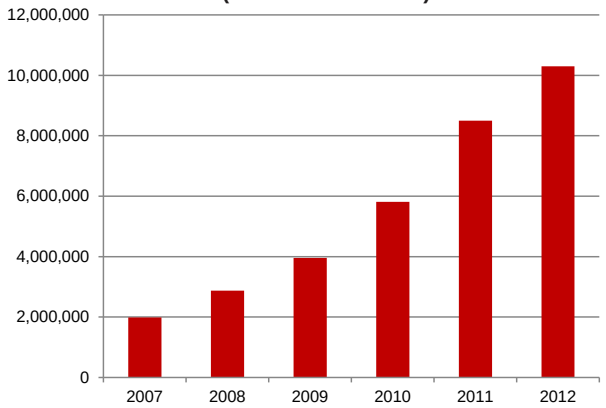
Manufacturers and retailers face continued pressure to keep shipping costs as low as possible, as transportation has consistently absorbed the largest share of logistics costs for companies. Drivers of higher costs include labor, as well as fuel, the latter of which has grown at rates well above the rate of inflation since 2007. While costs per gallon for low-sulfur diesel have grown at a rate of about 5.4% (annualized), rates for jet fuel have grown faster (about 6%). Increasing costs of jet fuel are one reason why air cargo growth has recently slowed, as cargo has diverted to expedited ground transportation.

From a trucking standpoint, there is greater emphasis on maximizing the volume and weight that an individual truck can carry. This point is impacting manufacturing production processes as well, better aligning manufacturing with transportation modes and costs. One clear outgrowth has been the emergence of Third Party Logistics Providers (3PL), who help companies optimize freight modes, carrier loading & scheduling, warehouse management, and outsourcing of some business functions, including customer returns and repairs. These companies now serve an estimated 80% of Fortune 500 companies, according to JOC.

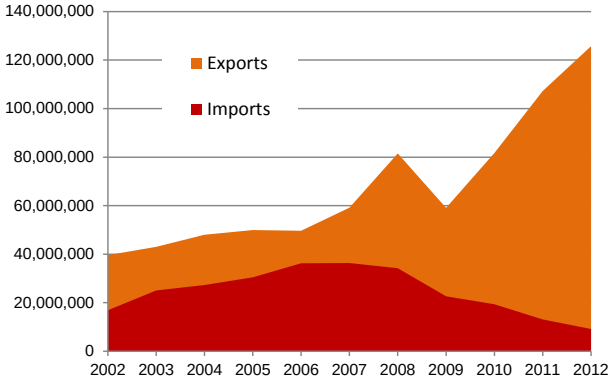
PM 2.5 Average Annual Emmissions, By Metro Area



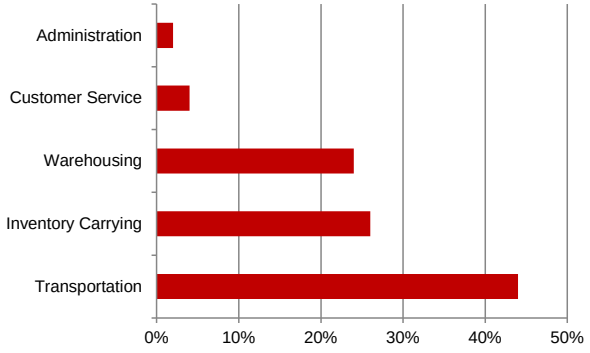
U.S. Natural Gas Withdrawals, Shale Gas (Millions Cubic Feet)



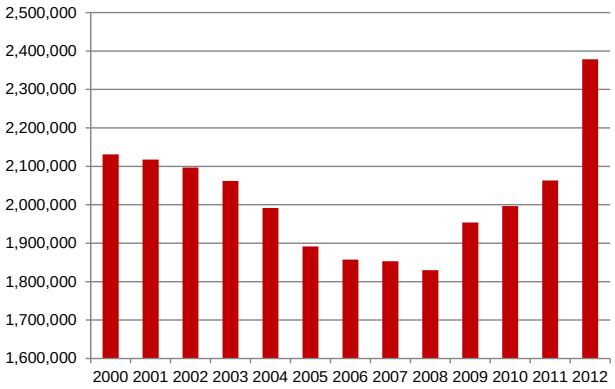
U.S. Coal Imports and Exports, Millions of Short Tons, by Quarter



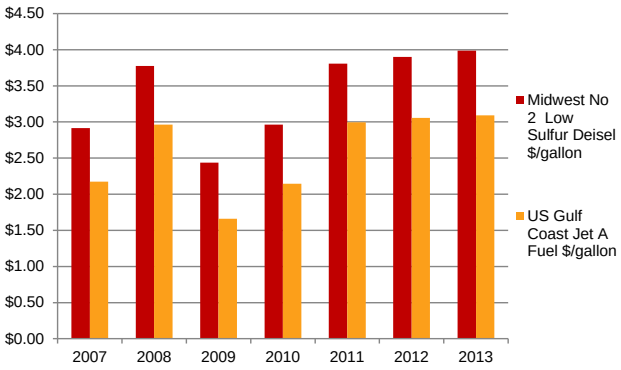
Logistics Costs % of Manufacturing Sales, 2012



U.S. Production of Crude Oil (Thousands of Barrels)



Fuel Price Comparisons, $/Gallon



More importantly, 3PL's are increasingly helping companies add value to partially assembled products along their supply chains. Research completed by JOC indicates that about half of surveyed 3PL's (more than 380 companies) in 2013 provide sub-assembly services. For Indiana, 3PL's are having an increasing impact. According to Conexus, specific examples include:

- Ingram Micro, located in Plainfield, is a 3PL that provides support services to the telecommunications industry. They received cell phones from a manufacturer, program software, and then package and distribute directly to manufacturer's customers.
- Integrated Distribution Services (IDS) is a 3PL also located in Plainfield. They work with Hanes underwear, receiving and sustaining inventory and responding to customer orders for specific items, which are packaged and shipped.
- MD Logistics in Plainfield works with Bayer; receiving supplies of pills, bottles and labels from Bayer which are then packaged by MD and distributed to customers. Life Science Logistics in Brownsburg provides a similar service for other Pharmaceutical companies.

For Indy FastTrack, key points include the following:

- 3PL's are exerting more influence over how value gets added along supply chains.
- While all distribution buildings look the same, 3PL's can be providing additional value added services, which could otherwise support higher wages as well.

INTERMODAL IMPACTS

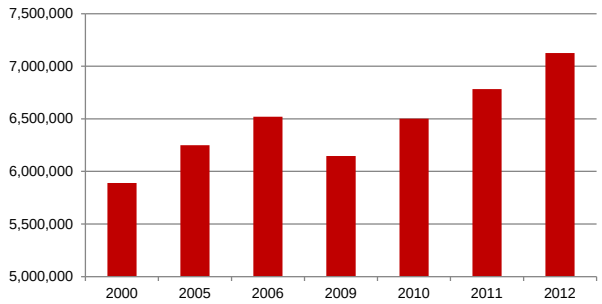
Containerization of freight has dramatically reduced transportation costs. Worldwide, the number of shipping containers (20-foot equivalent units or TEU) continued to grow between 2000 and 2010 in spite of the recession. According to the US Army Corps of Engineers, the number of shipping containers, increased from about 25 million to about 31.5 million, or about 3% annual growth. IHS Global Insight predicts that the number of imported TEU's will increase from 17 million in 2011 to 60 million in 2037.

Across North American ports, the recent emergence of deep water ports in Mexico and Canada is notable. The Port of Prince Rupert in Western Canada has seen dramatic growth in TEU since 2006. The shift in share relates in part to higher costs linked with more stringent environmental emissions, particularly in California ports, as well as underlying trends related to re-shoring and near-shoring. For Mexican ports, current shifts in supply chains by companies such as Nike have shifted production from China to other Asian countries, as well as to Mexico.

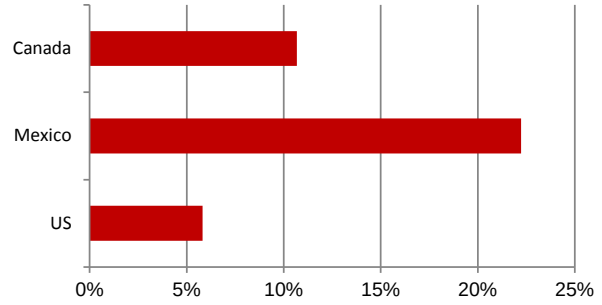
Containerized commodities for export to Asia is viewed as a growth area with Midwestern implications. In 2011, 7% of U.S. grain exports moved by container (U.S. Department of Agriculture), up strongly from 2010. A share of end-users are concerned about a confirmed origin, and are prepared to pay a premium for container service.

For the Midwestern US, Intermodal discussions begin and end with the Chicago Area, one of three metropolitan areas served by six Class I freight railroads. The number of intermodal lifts has steadily increased particularly since 2009, led by railroads such as Canadian National (CN) and Norfolk Southern (NS).

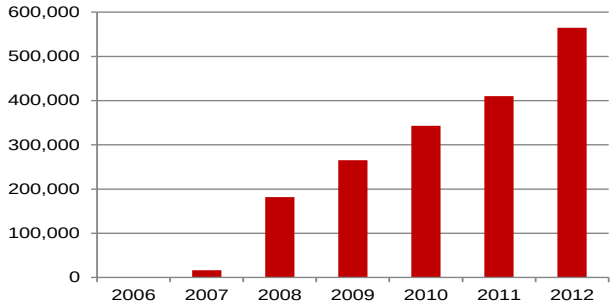
Total Intermodal Lifts, Chicago Area, 2000 to 2012



Annualized Growth, TEU's, Pacific Coast Ports



TEU Growth, Port of Prince Rupert



Congestion in Chicago has encouraged several ideas for rail bypasses around the city, with the CN acquisition of the EJ&E (a smaller short-line railroad) providing the only clear bypass at present. Cities such as Indianapolis traditionally have been tightly connected to Chicago's intermodal yards, with many import and export containers needing to be "drayed" from Chicago, at added cost to local shippers.

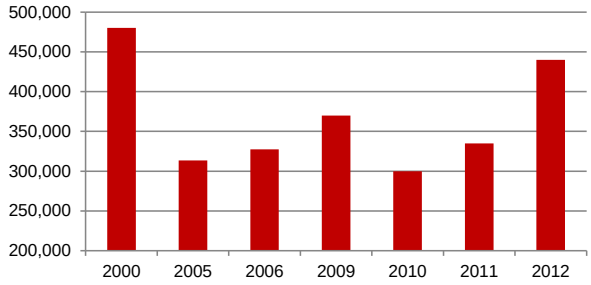
For Indianapolis, there are three related rail conversations:

1. The recently initiated intermodal partnership between the Indiana Railroad and CN is potentially quite significant. CN's growth in intermodal car loads (11.8% annual growth since 2009), and TEU's at Prince Rupert (10.5% annual growth since 2009) reflects this railroad's strategic position, essentially connecting deep water ports on three coasts with Indianapolis.

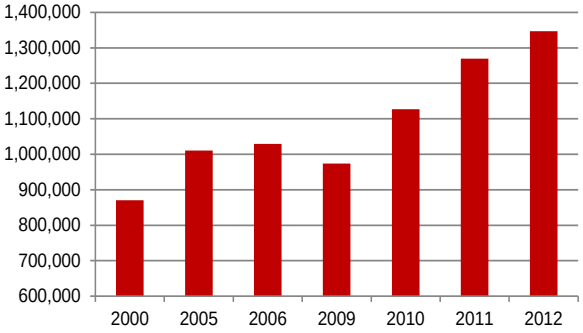
2. CSX is the primary Class I railroad serving Indianapolis. While Indianapolis does not site on any of the defined primary CSX freight corridors, analysis suggests that their Avon Yard, located on the western edge of Marion County, is significant to the CSX system. Over the last several years, Indianapolis has sustained itself as the fifth busiest CSX yard in their system, in terms of units processed.

3. The recently announced partnership between CSX and the Louisville & Indiana Railroad includes $90 million in investment to upgrade track along a route that parallels I-65. The improvements will enhance CSX connectivity to the south, particularly to places such as Cincinnati.

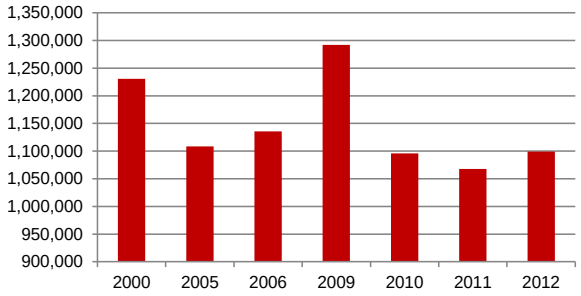
Canadian National, Lifts by Year, Chicago



Norfolk Southern, Lifts by Year, Chicago



CSX Railway, Lifts by Year, Chicago



INFRASTRUCTURE IMPACTS

The Panama Canal expansion includes a new parallel set of locks with a greater draft, and deeper navigational channels. The improvements will allow ships larger than the current Panamax standard to pass, creating potential savings and opening up new markets. According to the U.S. Army Corps of Engineers, in 2012 these ships made up 16% of ship inventory, but now account for about 45% of intermodal cargo capacity.

For the Midwest, some experts presume that the expanded canal will gradually benefit agricultural markets, given that a reported 44% of U.S. soybean exports already pass through the Panama Canal, primarily to Asian markets.

Port reactions to these investments vary. For example, while Gulf & East Coast ports are contemplating investments to support larger ships, analysis suggests that at present, only a small number of US ports have been dredged to the 50-foot standard required for post-Panamax vessels, including West Coast ports (LA/Long Beach, Oakland, and Seattle), as well as the East Coast ports of Norfolk and Baltimore. A project is currently underway to deepen the main channel and container berths at the Port of NY/NJ to the 50-foot standard, along with raising the height clearance of the Bayonne Bridge; the port of Miami is making similar plans. The Port of New Orleans, including terminals up to Baton Rouge, can only support ships that draw up to 45 feet; the Port of Houston is in a similar situation.

There remains a fair amount of uncertainty where post-Panamax ships will sail as they enter the fleet in larger numbers. Research suggests that ship owners are likely to be motivated to keep these assets at sea to minimize unloading time, suggesting that a smaller number of U.S. ports will see significant increases in activity, which will have ripple effects on land side port facilities, trucking companies, and railroads.

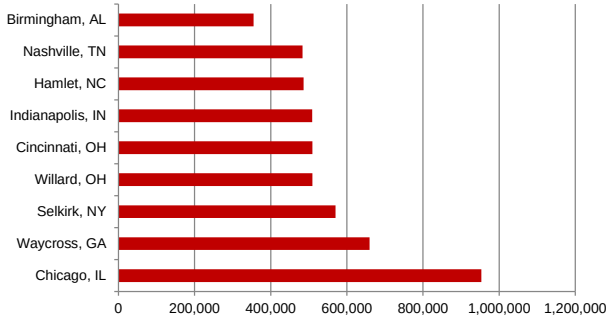
Class I Railroads are reacting to the canal expansion by investing in infrastructure and capacity, either through direct capital outlay or through public private partnerships. Since 1999 BNSF has invested $1.8 billion to increase capacity on its southern Transcon which now provides double-track service from Los Angeles to Chicago. CSX is developing its $842-million-dollar National Gateway project which will create double-stack container capacity along three rail corridors linking Mid-Atlantic ports to Ohio and Chicago.

NS recently completed a major upgrade to the Heartland Corridor, which effectively doubled container-train capacity from Norfolk to Chicago. The project involved raising tunnel clearances on 28 tunnels and removal of 24 overhead obstructions in Virginia, West Virginia, Kentucky and Ohio, at an estimated cost of $191 million, shared between NS and impacted state governments.

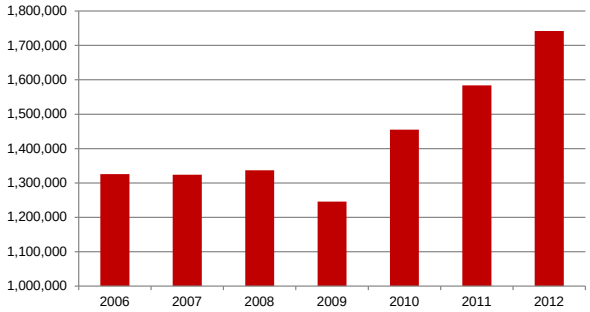
NS is working on the Crescent Corridor project with 13 states focused on 2,500 miles of rail infrastructure. The project, with a reported cost of $2.5 billion, will expand capacity from New Orleans and Memphis, through Birmingham, Chattanooga, Knoxville, and Charlotte, to connect with Philadelphia and New York.

Even as the Class I's are benefiting from these corridor improvements, their local networks and yards continue to be a challenge, both in terms of operations and capital investment priorities. For cities, implications link with the reality that freight trains are getting longer, with consequences for older rail yards and at grade crossings. As well, many older yards are not equipped to deal with growth in intermodal.

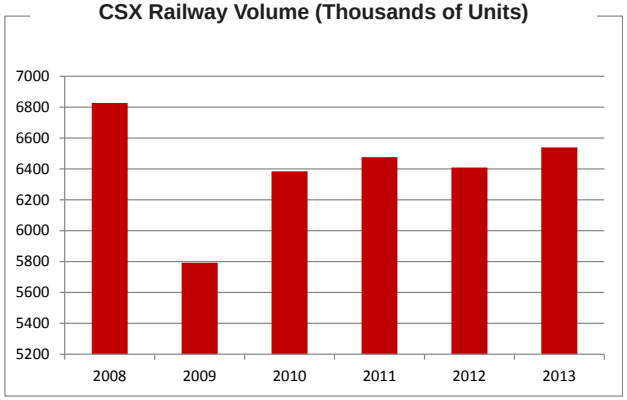
CSX Rail Yards, Units Processed, 2012



CN System Intermodal Car Loads



CSX Railway Volume (Thousands of Units)



From a Midwestern rail standpoint, the regional freight movement system is not standing still.

CREATE is beginning to solve freight bottlenecks in the Chicago area, one of three places where six Class 1 railroads meet. CREATE includes more than 70 projects with a $3-billion-dollar price tag.

NS is partnering with CN on the Mid-America Corridor, to reduce transit time between Chicago, St. Louis and Memphis. The goal of this corridor partnership is to share track between the three gateway cities.

The CN continues to digest their acquisition of EJ&E, and announced an intermodal yard expansion in Joliet, IL in 2012. Given the fragmented nature of the freight system, it is difficult to predict how freight movement will adjust to these improvements. However, given plans by the CN to expand container traffic through the Port of Prince Rupert from about 500,000 TEU's to a reported 4 million by 2015, it is reasonable to assume that CN container traffic to Chicago and Memphis will increase over time.

Across the Central U.S., Chicago, St. Louis, Memphis, and New Orleans serve as critical interchange points for cargo and containers originating from the Atlantic, Gulf Coast, and Pacific Coast. While Chicago is starting to implement rail efficiencies, these other critical nodes remain behind. St. Louis recently completed a freight planning effort that identified existing Mississippi River rail bridges as a future constraint to growth in rail traffic. As St. Louis is a key interchange point for eastern traffic on CSX, infrastructure decisions made locally could impact freight flows through Indianapolis. Current plans by IDOT for high-speed rail do include evaluation of alternatives to expand rail capacity across the Mississippi.

While Chicago remains a key node in the national freight movement system, Class 1 Railroads (particularly eastern) are appreciating the possibility of having traffic avoid Chicago, and route through Kansas City, St. Louis, Cincinnati, Memphis, or Louisville. A share of east-bound rail connections from St. Louis do connect through Indianapolis.

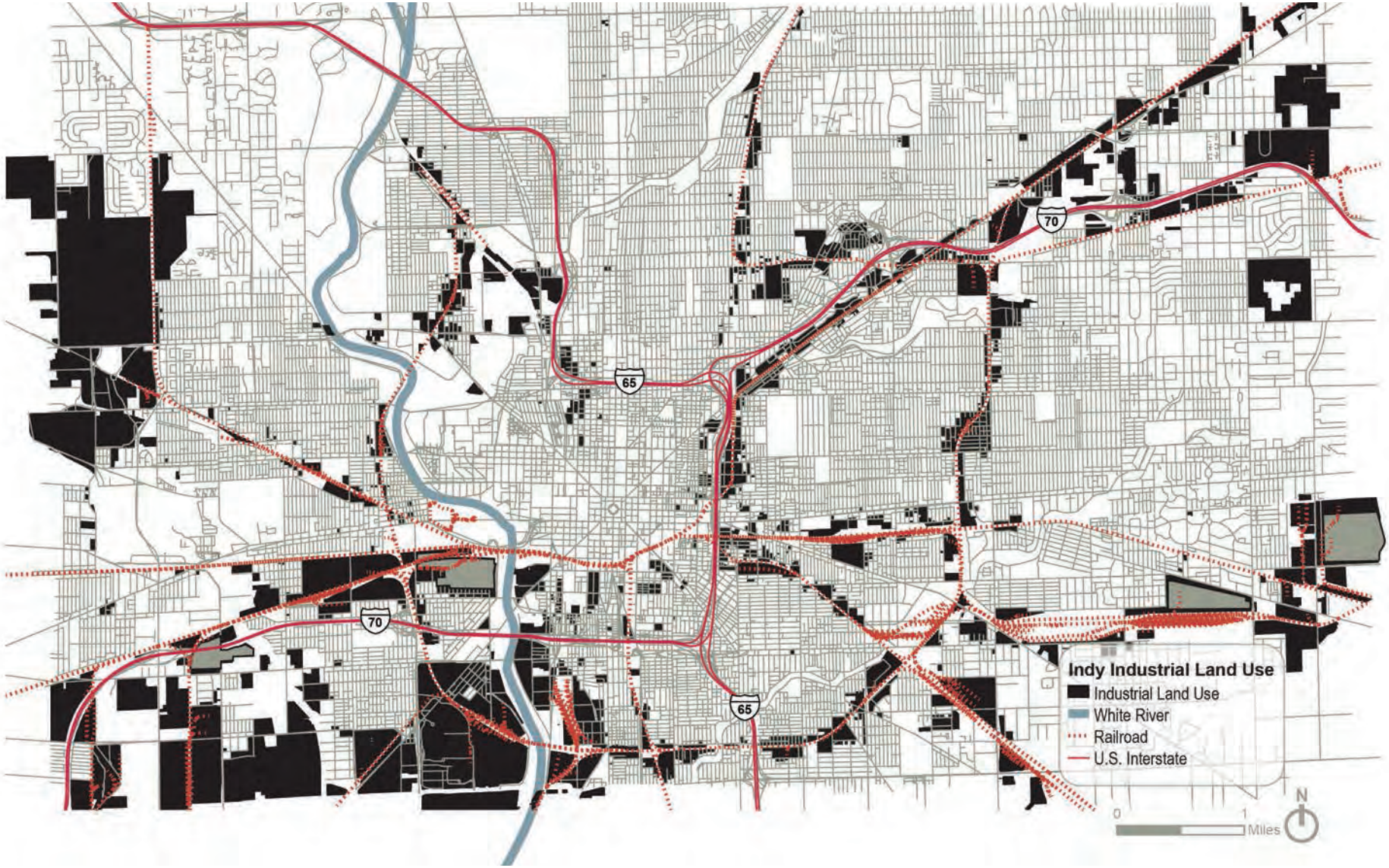
LOCAL FISCAL IMPACTS

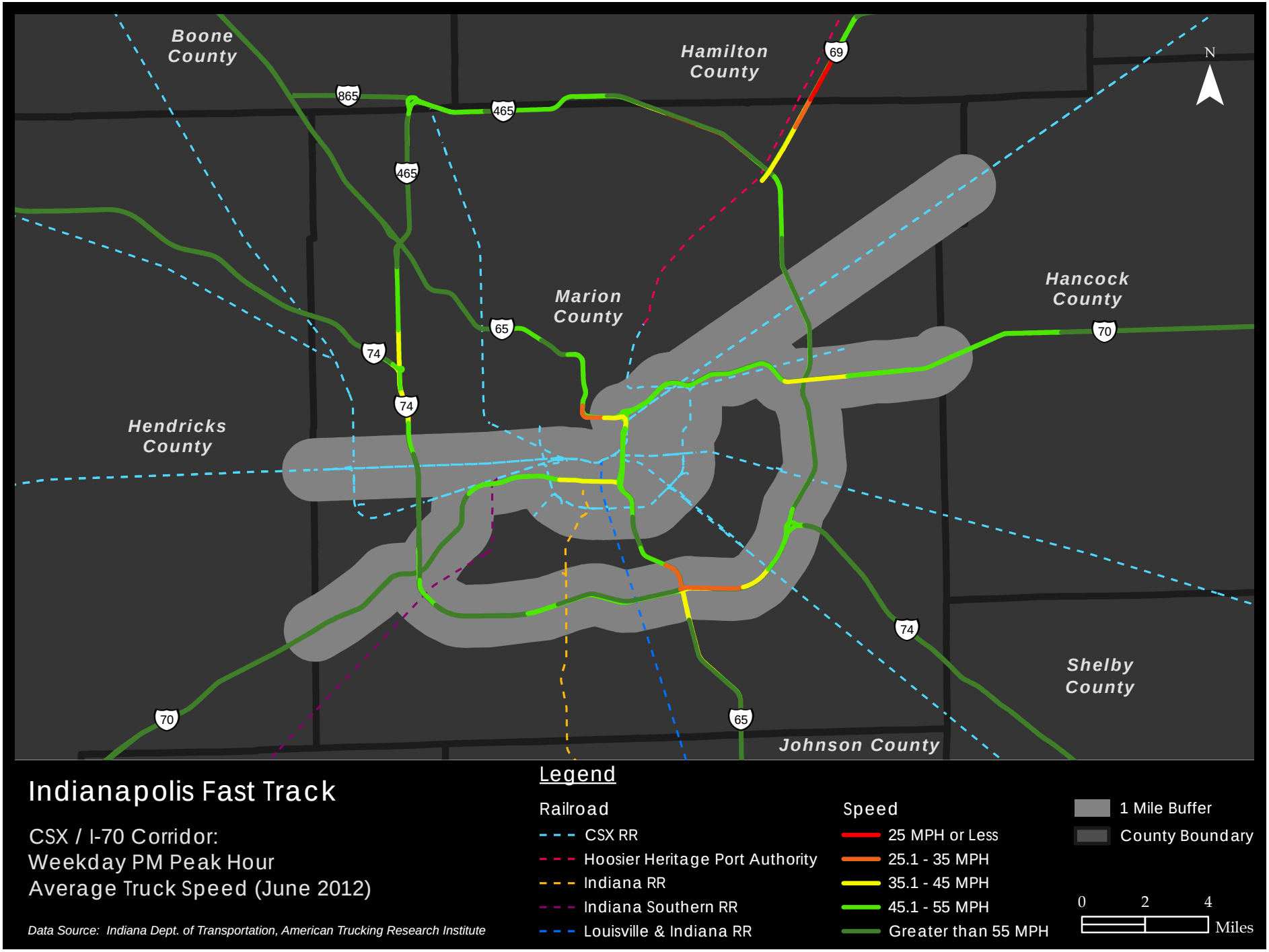
One remaining element with local implications in Marion County concerns the assessed value of railroad property. The table below summarizes recent trends for valuation of all railroad operating property around the county, representing an increase in value from about $22 million to $26 million between 2011 and 2013. Railroad property is valued differently compared to traditional real estate (i.e houses or office buildings), with values linked to the financial performance of the railroad, linked with miles of track. Through this approach, most railroad operating property is valued for tax purposes at lower unit rates (per acre / per square foot). However, while the railroads have been consistently reducing the amount of owned miles of track, their stock valuations have grown, resulting in higher assessed valuations for property tax purposes. When looked at from a tax increment financing standpoint, the possibility of growth in valuations against a base year for railroad property has merit as a funding source for railroad improvements, including grade separations, spurs, and connections.

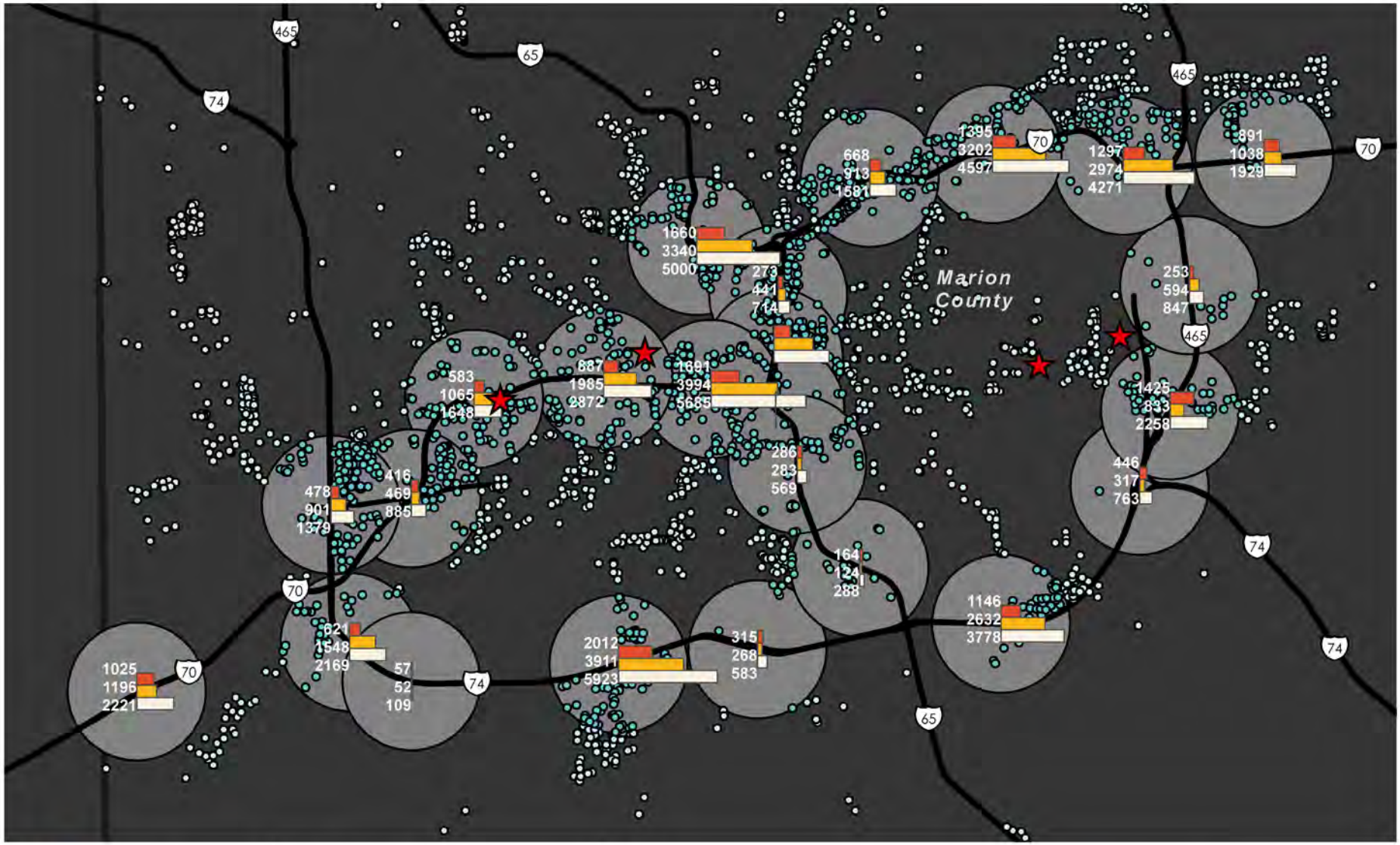
Railroad Property Assessed Valuation in Marion County			
	2011	**2012**	**2013**
CSX Transportation	$21,690,000	$22,740,320	$25,372,760
Indiana Southern Railroad	$545,970	$533,510	$510,550
Louisville & Indiana Railroad	$265,870	$266,420	$327,870
Norfolk Southern Corp	$17,100	$17,100	$17,100
Southern Indiana Railway	$0	$0	$0
	$22,518,940	$23,557,350	$26,228,280
Estimated Property Taxes Paid @ 3% of Assessed	$675,568	$706,721	$786,848

Freight Movement and Land Use Alignment

The Industrial Land Use context is shaped by clear expectations that freight volumes through metropolitan areas such as Indianapolis will only increase over time, and that the all-too-common misalignment of land use and transportation will otherwise increase costs and create other “negative externalities”, if not managed deliberately. It is also apparent that the connection between freight movement, land use and climate change will become increasingly important, with growing awareness of air quality impacts on adjacent / at risk populations.




Boone County
Hamilton County
Marion County
Hancock County
Hendricks County
Shelby County
Johnson County
865
465
465
69
65
74
74
70
74
70
65
N
Indianapolis Fast Track
CSX / I-70 Corridor:
Weekday PM Peak Hour
Average Truck Speed (June 2012)
Data Source: Indiana Dept. of Transportation, American Trucking Research Institute
Legend
Railroad
CSX RR
Hoosier Heritage Port Authority
Indiana RR
Indiana Southern RR
Louisville & Indiana RR
Speed
25 MPH or Less
25.1 - 35 MPH
35.1 - 45 MPH
45.1 - 55 MPH
Greater than 55 MPH
1 Mile Buffer
County Boundary
0 2 4
Miles



Indy FastTrack

Department of Metropolitan Development Indianapolis

AECOM

Date: 3/9/2014

I-70 / I-465 Corridor:
Industrial Properties and
Interchange Ramp Volumes

DRAFT

Legend

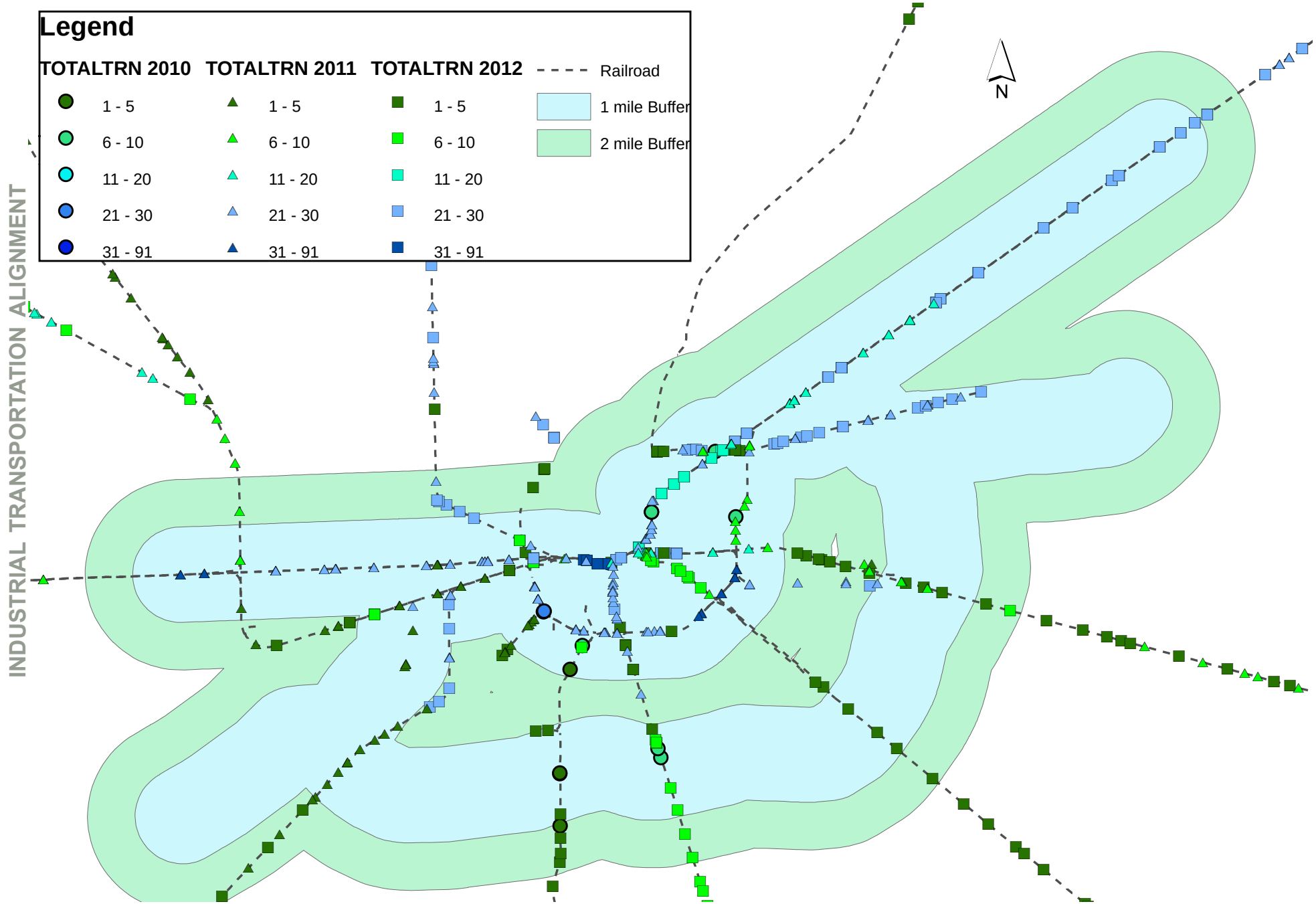
- Fast Track Sites
- Industrial Prop. within 1 Mile of Interchange
- Industrial Prop. more than 1 Mile from Interchange
- County Boundary

Data Source: Indiana Department of Transportation, CoStar

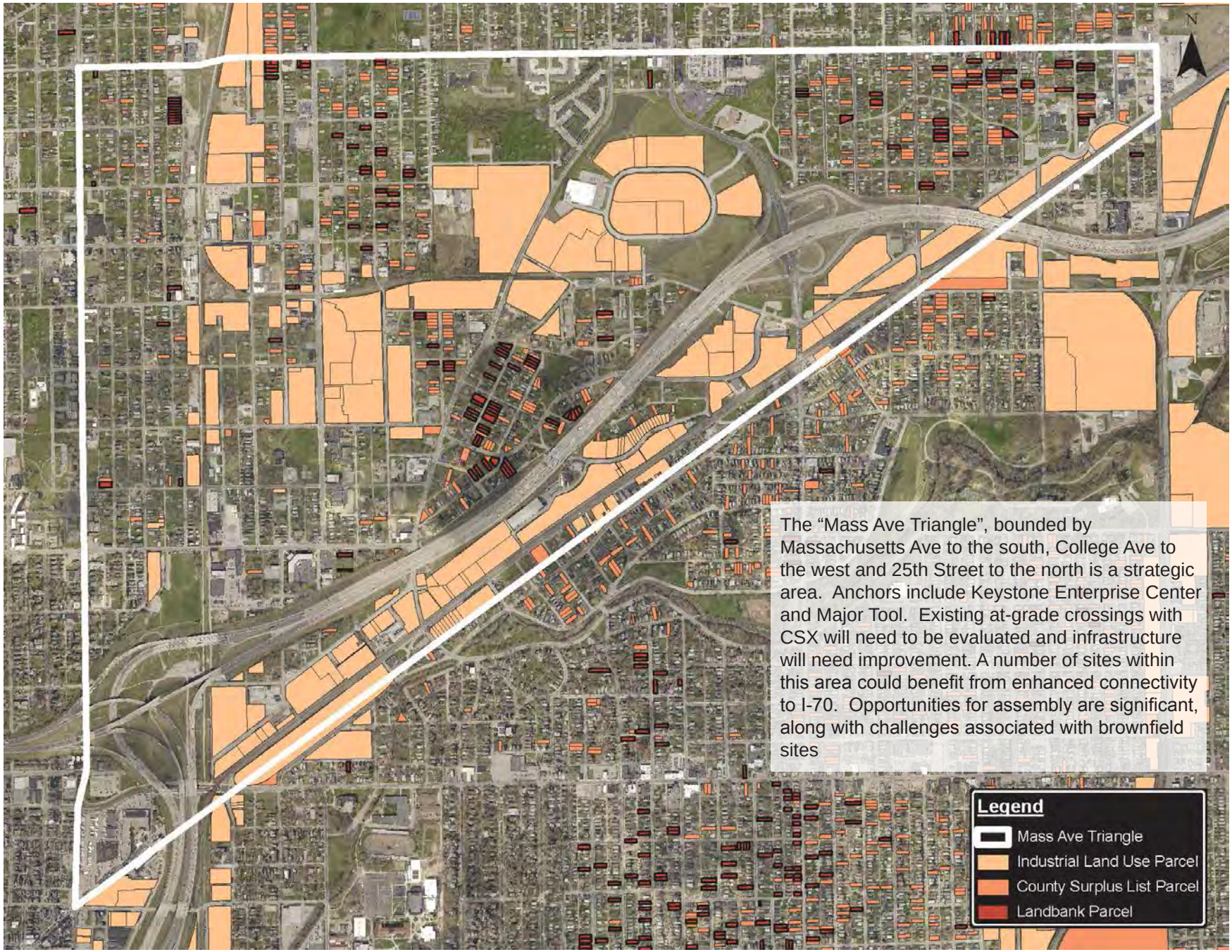
Interchange Ramp Volumes

- 3,000
- Single-Unit Trucks
- Combination Trucks
- Total Commercial Vehicles

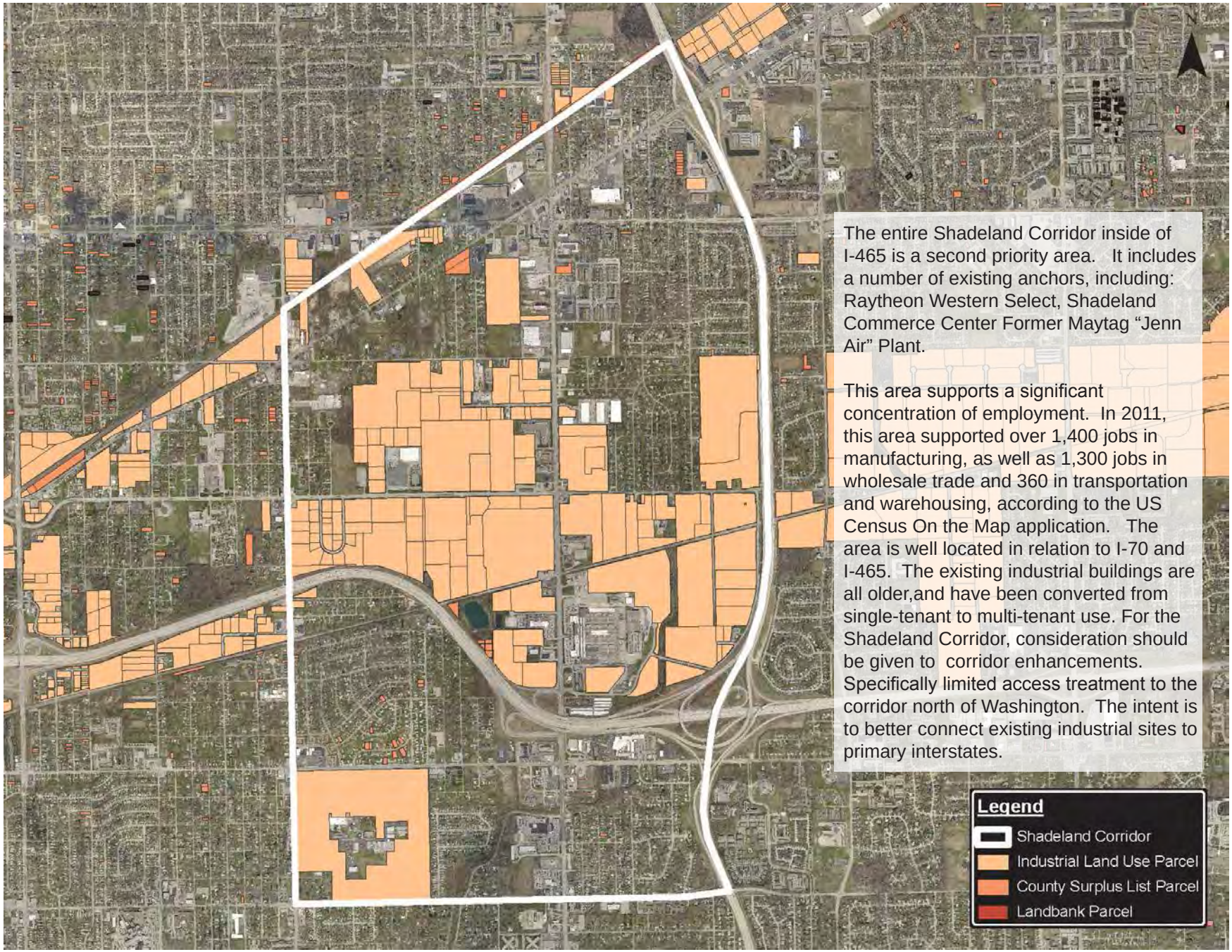
RAIL VOLUME WITHIN 1 AND 2 MILE BUFFER OF I-70 AND I-465 CORRIDOR



INDUSTRIAL LAND USE IMPACTS - MASS AVE TRIANGLE



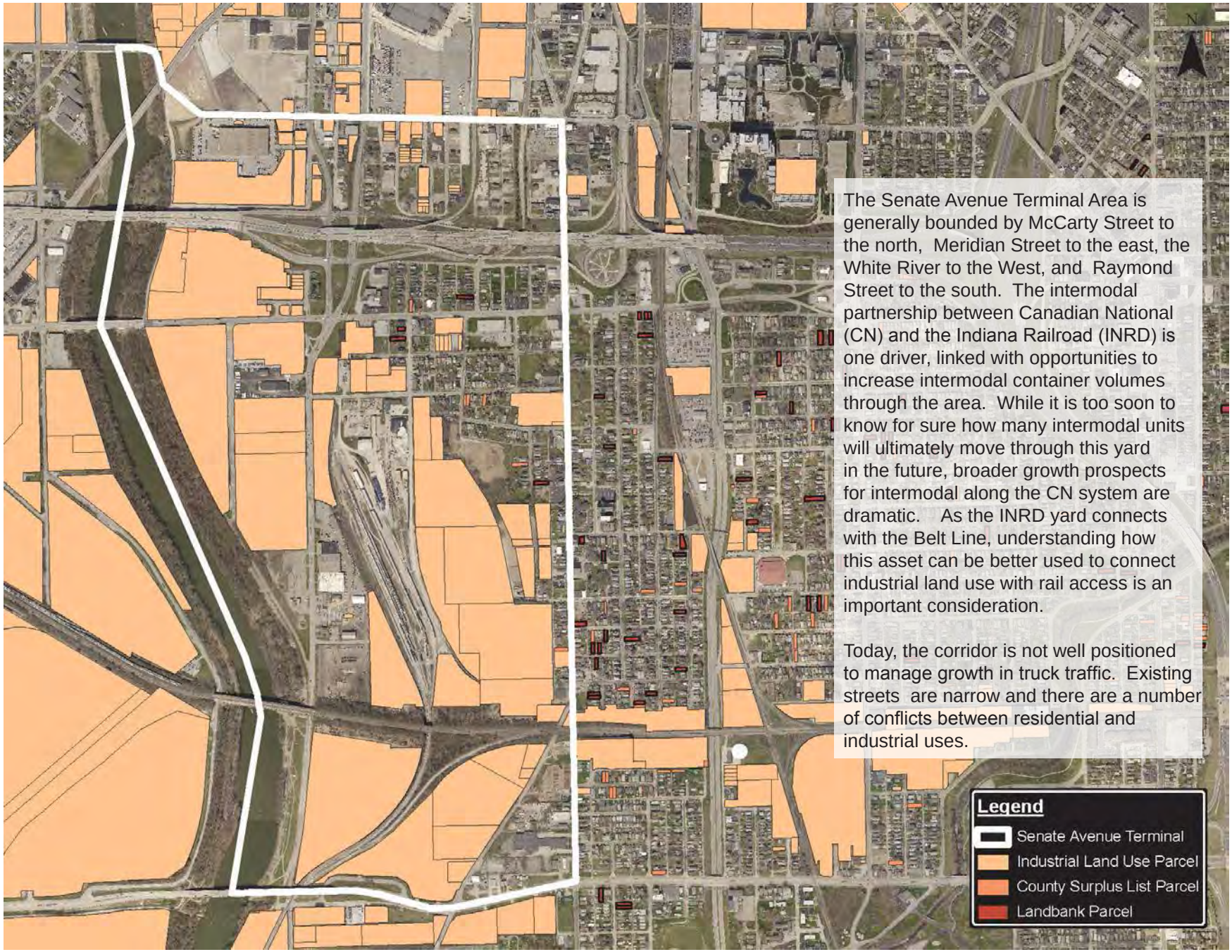
INDUSTRIAL LAND USE IMPACTS - SHADELAND CORRIDOR



The entire Shadeland Corridor inside of I-465 is a second priority area. It includes a number of existing anchors, including: Raytheon Western Select, Shadeland Commerce Center Former Maytag “Jenn Air” Plant.

This area supports a significant concentration of employment. In 2011, this area supported over 1,400 jobs in manufacturing, as well as 1,300 jobs in wholesale trade and 360 in transportation and warehousing, according to the US Census On the Map application. The area is well located in relation to I-70 and I-465. The existing industrial buildings are all older,and have been converted from single-tenant to multi-tenant use. For the Shadeland Corridor, consideration should be given to corridor enhancements. Specifically limited access treatment to the corridor north of Washington. The intent is to better connect existing industrial sites to primary interstates.

INDUSTRIAL LAND USE IMPACTS - SENATE AVENUE TERMINAL

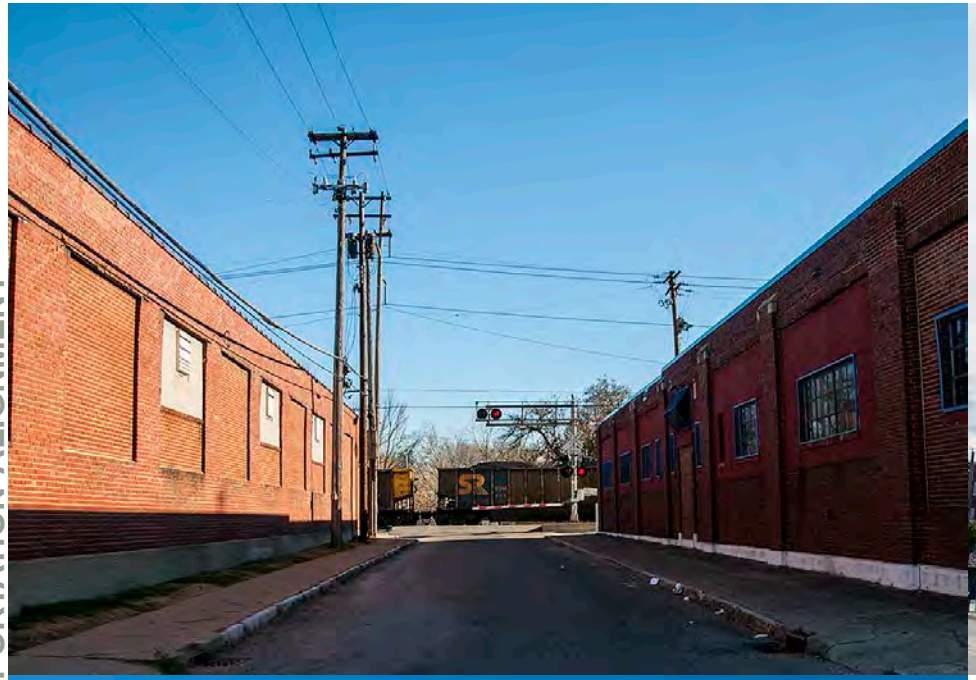


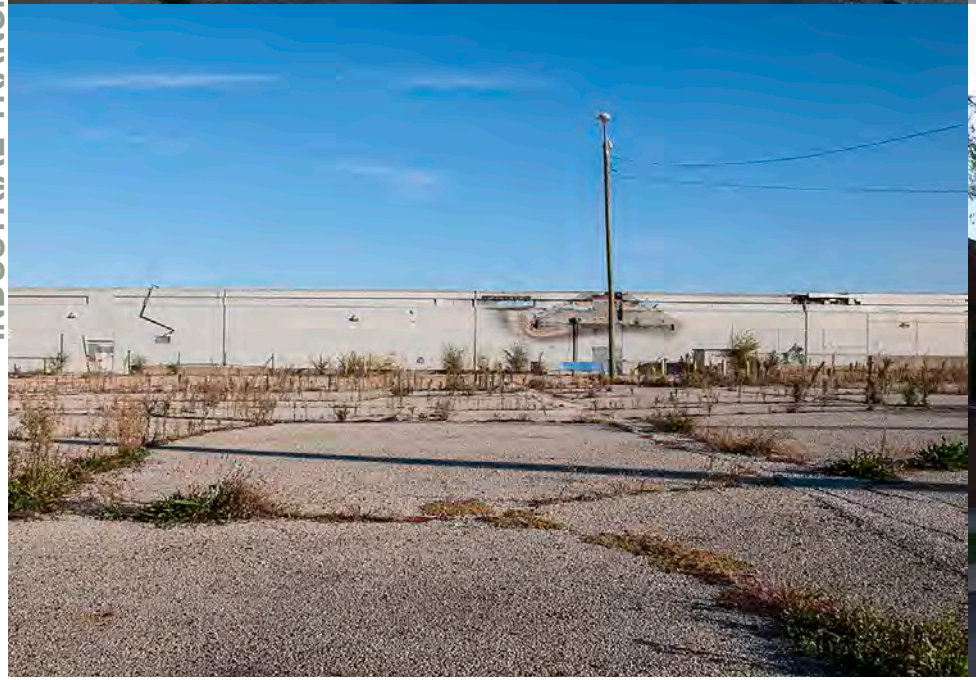
The Senate Avenue Terminal Area is generally bounded by McCarty Street to the north, Meridian Street to the east, the White River to the West, and Raymond Street to the south. The intermodal partnership between Canadian National (CN) and the Indiana Railroad (INRD) is one driver, linked with opportunities to increase intermodal container volumes through the area. While it is too soon to know for sure how many intermodal units will ultimately move through this yard in the future, broader growth prospects for intermodal along the CN system are dramatic. As the INRD yard connects with the Belt Line, understanding how this asset can be better used to connect industrial land use with rail access is an important consideration.

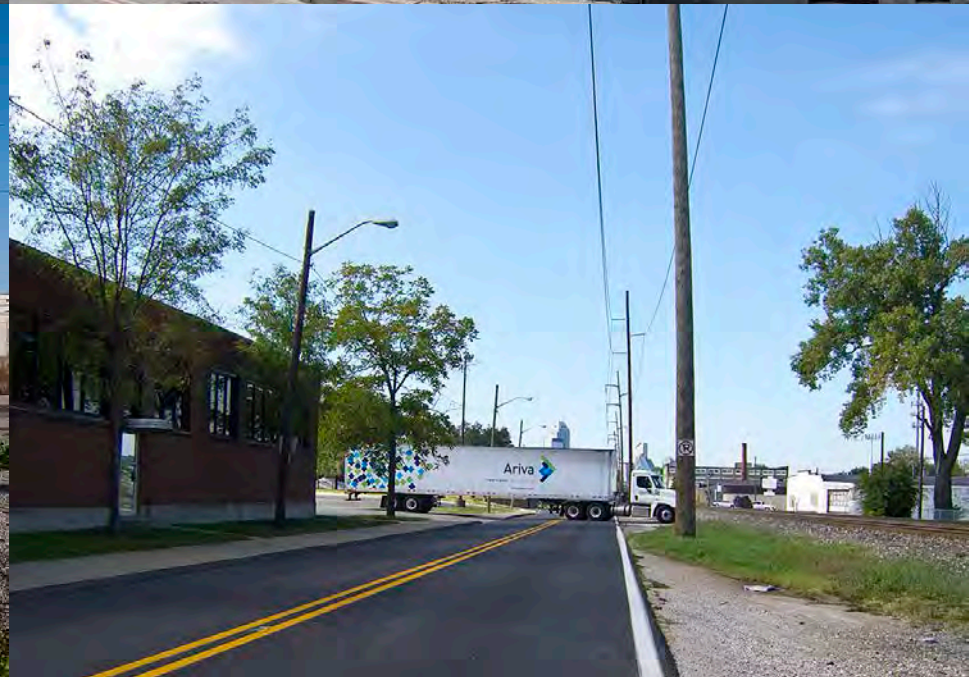
Today, the corridor is not well positioned to manage growth in truck traffic. Existing streets are narrow and there are a number of conflicts between residential and industrial uses.

INDUSTRIAL LAND USE IMPACTS

INDUSTRIAL TRANSPORTATION ALIGNMENT







Indy FastTrack

2014

A market-based, results-driven plan to increase private investment in four underutilized regional land assets that were vacated as a result of the severe destabilization of the automotive industry.

Onward: Action Plan

City of Indianapolis
Division of Planning
200 E. Washington Street, Suite 1821
www.indy.gov

This report was created by AECOM in coordination with and for the City of Indianapolis.
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Indianapolis
Gregory A. Ballard, Mayor

GUIDON DESIGN

AECOM

ONWARD: ACTION PLAN

When Indy FastTrack started in October of 2012, there was a clear need to focus on four specific industrial sites. Now 14 months later, the effort has sharpened its focus as a deliberate and multi-faceted economic development strategy for advanced manufacturing and freight transportation. The effort is defined by recommendations that deliberately expand the capacity of existing organizations to foster an environment where organic growth in capital spending, wages, and employment associated with advanced manufacturing can occur. Recommendations include the following.

EXPAND DMD ORGANIZATIONAL CAPACITY AND RESOURCES

Use Indy FastTrack to lay the groundwork for a Regional Comprehensive Economic Development Strategy (CEDS)

- The CEDS is an essential step in being positioned for future financial support from the US Economic Development Administration (EDA).

Use Indy FastTrack to Leverage EDA Support for Implementation of FastTrack Phase II

- Use EDA resources to expand organizational capacity within the City of Indianapolis Department of Metropolitan Development, enabling it to properly serve as the Redevelopment Authority of the City of Indianapolis.
- The Authority must have an expanded role in land acquisition, clearing title, building demolition, brownfield remediation, and land assembly.
- The Authority must be willing to enter the chain of ownership and/or facilitate conveyance of sites to related entities in strategic situations, and partner with related organizations (LISC, Develop Indy, the Land Bank, etc.) to ensure that acquisition/ remediation strategies are targeted, maximizing limited resources.
- Prior to the recession, industrial land absorption across Marion County averaged about 170 acres per year. Moving forward, DMD and its partner organizations need to identify and begin to secure 50 to 100 acres of land for new infill development per year, beyond the FastTrack sites.

Create a Fully Integrated City / County GIS Platform to Support DMD Redevelopment

- Economic development officials need a complete view of property ownership in order to make effective long-term decisions regarding redevelopment. The Marion County Assessor is viewed as critical to making any needed database/GIS improvements.
- Assessed valuations and opportunities for growth in value are at the heart of the conversation.
- The inventory needs to include freight corridors, as well as areas where industrial, commercial, and residential land uses interact; railroad-owned property,including easements, needs to be included.

Enable Legislation Priorities

There are fundamental fiscal constraints that impact the City of Indianapolis' ability to implement identified economic development efforts associated with FastTrack; constraints which ultimately limit the City's future rate of growth, and by association the rates of growth in Central Indiana, and the entire state. Targets for enabling legislation conversations with the State of Indiana are apparent:

- Redefine and retool local and state economic development incentives to better align with business retention, expansion, and incubation. Resolve the mismatch between state economic development incentives (focused on tax credits for job creation), and manufacturer priorities (capital investments for retooling).
- Seek a temporary, five-year economic development sales tax to fund county-wide improvements in transportation infrastructure and workforce development.
- Evaluate opportunities for implementation of synthetic or non-geographic-based TIF districts linked with brownfield property and railroad property across Marion County.
- For a city the size of Indianapolis, the lack of home rule status is a practical constraint in terms of local revenue generation.

Develop a Brownfield Redevelopment Program (BRP) Strategy

The Brownfield Strategy is an extension of existing DMD policy, which over the last three years has shifted from reactive to deliberate, using a combination of carrots and sticks to work with and increasingly compel property owners to clean up sites through litigation. This program also remains resource challenged, with funds currently being derived from grants or litigation proceeds.

As state law regarding brownfields now emphasizes a site-specific, risk-based approach, the FastTrack strategy builds from the requirement for a strengthened GIS platform, one that can aid policy makers in establishing four classifications of brownfield sites, with the goal of moving a majority of sites from category 1 (unknown) to category 2, 3, or 4:

1. Sites which had historical uses commonly associated with environmental contamination but the actual environmental conditions are unknown

2. Sites where contamination is both known and extensive, and there is a clear need to secure the site for the long-term

3. Property that can be readily reused for industrial development, including the Ford/ Visteon, Navistar, and Chrysler Foundry sites

4. Property that has potential for higher-value commercial reuse or transitioned to other land uses consistent with the location

The strategy also acknowledges the physical proximity between pre-1950's industrial plants and the residential neighborhoods where their workers worked. With the loss of these industrial anchors, these residential enclaves are increasingly isolated, incompatible with remaining industrial activity / truck impacts, and potentially contaminated the legacy of proximity. The City should evaluate its existing brownfield and industrial inventory to determine what, if any, vacant residential property can be aggregated to expand the amount of available industrial property.

The plan recommends several concepts that have potential to expand resources for remediation and reuse for sites in categories 3 and 4:

- Creation of a "synthetic" brownfields tax increment financing (TIF) district linked with an estimated $1.002 billion in assessed valuation across Marion County that is currently locked up in brownfield property (about 1.8% of countywide assessed value). The intent of a synthetic brownfields TIF is to use tax increment financing to unlock this value. The premise behind "synthetic" TIFs is that they do not have formal geographic boundaries. Implementation would likely require state enabling legislation.

- For a smaller group of brownfield property owners who are current with their property taxes and plan to maintain the status quo with their property indefinitely, look at the resulting stream of property taxes over a 20 to 50-year future period; to evaluate whether resulting tax payments can be used to support debt service that can remediate these sites and put them into more productive use in the near term. This approach is only realistic if a redevelopment authority can take a long-term view with specific properties.

While both ideas noted above do involve re-allocation of existing property taxes from the General Fund, the amounts are modest (about 2% of county-wide valuation), and the opportunity for enhanced valuation through reuse from just a portion of what could be a $1-billion-dollar pool of property is significant.

The study recommends that City staff implement an alternative permitting process for known and suspect brownfield sites, primarily to ensure that existing buildings are demolished only under specific circumstances, and with the specific approval of DMD / Brownfields staff.

One additional brownfield resource element relates to solar power. Although solar is clearly not a legislative priority in Indiana at present, ongoing decreases in installed cost per watt are placing solar power on a trajectory toward parity with coal-fired electrical generation. The US Environmental Protection Agency has established a new program called "Re-powering America's Land" to focus attention on the use of renewable energy sources on contaminated sites; projects in other communities have been implemented on RCRA and Superfund sites. Also, companies such as Brightfields LLC are proposing brownfield solar projects as interim (20 year) uses, particularly for heavily contaminated sites that also have access to more robust utility grid connections. While the economics of solar are still improving, the idea of aligning larger brownfield sites with utility-scale solar installations has promise and should be considered as an interim (20-30 year) site strategy. Importantly, opportunities for solar in Indiana are linked with policy decisions at the Indiana State Legislature.

Refocus Transportation Investments Where Manufacturing Jobs can be Sustained

As the City prepares to initiate Plan 2020, decisions regarding the Comprehensive Plan and the Thoroughfare Plan move to center stage. Deliberate steps need to be taken to align future transportation spending and manufacturing land use to ensure that limited transportation dollars are used to unlock the value of strategic sites that can support non-retail job growth. The emphasis here is on sites that are proximate to I-70 and I-465 south and or directly adjacent to rail assets. Specific target areas include:

- Harding Street from I-465 to Washington Street should be evaluated in the thoroughfare plan. This includes further study of grade separations for CSX and the Belt Line in that area.
- The length of Shadeland Avenue inside of I-465, should be evaluated with the end goal being a limited access corridor that can better connect sites with I-70.
- The “Mass Ave Triangle”, bounded by Massachusetts Ave to the south, College Ave to the west and 25th Street to the north is a strategic area. Existing at-grade crossings with CSX will need to be evaluated and infrastructure will need improvement. A number of sites within this area could benefit from enhanced connectivity to I-70.
- Property surrounding the Indiana Railroad, Senate Avenue Terminal is expected to see growth in intermodal-related activity and should be addressed in the thoroughfare plan.
- Evolving CSX plans for a new intermodal yard separate from their Avon Yard need to be seen as a priority opportunity for new industrial development in Marion County.
- Plans to extend I-69 south of Indianapolis should focus on industrial development opportunities along I-465 near the Harding Street interchange.
- For sites near Holt Road @ I-70, and along Shadeland Avenue and Massachusetts Avenue, identify sites that can be used to support CNG / LNG fueling of trucks, in partnership with major trucking firms.

Work Toward an Integrated Regional Freight Planning and Economic Development Structure

With the expectation for growth in freight volumes through Indianapolis, it is apparent that the City and Region are not organized to identify these issues, much less implement solutions. Economic development is not a core mission of the Indianapolis Metropolitan Planning Organization, and Develop Indy does not have an explicit role in transportation planning. While this issue is not unique to Indianapolis, the extent of freight movement through Marion County elevates the need for more deliberate solutions. Ideas include:

- Short-term solutions involve deeper partnerships among DMD, Develop Indy, InDOT and the MPO to establish annual monitoring regimes that include truck counts on key arterials across Marion County. At present, there no information about truck impacts on local streets. There is also a broader need to re-evaluate existing truck routes and identify improvements, including turning lanes, signal timing, etc.
- Develop a trucking industry working group, to stay current with industry trends.
- Re-allocate the current assessed valuation of railroad property in Marion County (roughly $26 million) from the general fund and use resulting tax proceeds to fund additional organizational capacity, support matching dollars for federal grants and specific investments in rail infrastructure.
- Partner with railroads and industrial developers to identify sites that can sustain long-term growth in intermodal freight movement, as well as rail-served industrial sites.
- Leverage the strategic geographic position of Indianapolis as the 10th largest logistics hub in the US with the resources of the 32nd largest metropolitan area to pursue federal funding for transportation projects that increase rail connectivity and reduce the Region’s dependence on freight movement by truck, currently the dominant mode of freight transportation through Indianapolis. Expanded rail and intermodal access into Marion County is the goal.
- As Indianapolis will continue to be a strategic node in the CSX rail network, City leaders need to prepare for further growth in rail volumes. In this context, use concerns about the structural condition of the Union Station viaduct serve as the basis for a strategic conversation with CSX, Ely Lilly, InDOT, and state elected leaders about the looming need for a public-private solution that allows CSX to shift a larger share of pass-through traffic from the CSX Main Line to the Belt Line.
- For the long-term, the Central Indiana Region will need to consider the eventual need for a regional port authority structure that would be tasked with making more deliberate regional connections between freight transportation and industrial land use. As Central Indiana grows, the resistance created by inefficient connections between modes will grow.

Align Transportation and Advanced Manufacturing

- Use zoning overlays to protect industrial areas from encroaching commercial and residential uses, and more deliberately link industrial building types to their anticipated trucking requirements.
- Preserve existing rail corridor right-of-way. The Pennsy Trail is a good example of an existing rail corridor for which ownership ultimately fragmented, and corridor continuity was lost. These corridors are immensely valuable.
- Canadian Class 1 Railroads have developed detailed guides for compatible uses along rail corridors. Elements relate to defined minimum setbacks from corridors to mitigate vibration and noise. These ideas should be incorporated in future zoning code updates.
- For industrial sites directly adjacent to rail yards, develop a permitting process and design standards to ensure that roads can serve as overweight truck routes, allowing overweight containers to be unloaded and moved to adjacent distribution centers without penalty.

Future zoning code updates will need to consider several elements related to manufacturing:

- The traditional light and heavy industrial categories found in many industrial zoning codes are less relevant today. Increasingly, these buildings are being relied on for assembly of components rather than traditional “heavy manufacturing”.
- Distinguish between suburban greenfield industrial sites and infill redevelopment on more dense urban industrial sites. For greenfield sites, codes should incorporate a flexible program that incorporates minimum standards for building design and setbacks, with particular emphasis placed on truck access and truck court security. These standards are more difficult to apply in infill situations, where minimum setbacks and stormwater requirements can render some sites undevelopable, unless adjustments are made.
- For industrial areas there is a clear need to create buffers to prevent residential development from encroaching on rail yards, rail corridors, and truck intensive corridors.
- Future zoning updates, for health and noise considerations, will need to consider zoning changes for property adjacent to I-70 inside I-465 that would effectively prohibit new residential development within a ¼ mile buffer of the interstate.
- Conduct annual reviews of existing industrial zones to evaluate consistency of current outdoor storage practices with current regulations.

RENEW FOCUS ON ECONOMIC DEVELOPMENT

Re-engage with the Private Sector

- With the recession now fading, local economic development officials must re-engage with private sector manufacturers, as well as companies involved in warehousing and distribution, including third party logistics providers (3PL’s). Initiating outreach with local suppliers that support local advanced manufacturing should be an initial priority. This will help to define evolving industry needs as the economy recovers. Develop Indy’s recent decision to hire a retention program specialist is an important first step.
- Expand connections with the Purdue University Manufacturing Extension Partnership and other organizations in support of advanced manufacturing in Indianapolis.

Implement an Advanced Manufacturing Business Retention and Expansion (BRE) Plan

- National experience indicates that about 75% of new jobs are created by existing local companies, rather than through industry attraction. BRE plans build from this notion, focusing on engagement and annual retention visits to local companies. The structure is helpful in better understanding local supplier networks, employer needs and challenges, and providing early warning of challenges.
- The BRE toolkit must include workforce development resources which are consistently at the table. As the City has recently used TIF to support workforce development, consideration should be given to expanding the program, such that a pool of local workforce incentive dollars can be created to support business retention and expansion.

Expand Economic Development Incentives

- For the short-term, local economic development incentives for advanced manufacturing should prioritize capital investment, rather than job creation.
- Work toward an incentive structure that ties increased incentives to value added manufacturing, and more limited incentives to pure distribution, and other uses with lower value added.
- A 2014 study by the Florida Legislature, Office of Policy Analysis and Government Accountability reinforces the need to be deliberate and pragmatic with incentive awards. Their surveys showed that the majority of companies (about 75%) who received incentives in Florida indicated that incentives were, "one among many factors, as opposed to being the key decision factor". About 40% indicated that incentives were the primary reason for their decision.

The FastTrack manufacturing sector study yielded several approaches for evaluating priority sectors. These approaches are as follows.

Sectors that have added jobs since 2010 This includes:

- Coating, engraving and heat treating;
- Machine shops and metalworking;
- Electrical equipment, including HVAC; and
- Chemicals.

Sectors that have location quotients greater than 1.0 including:

- Hardware mfg;
- Grain and oilseed milling;
- Printing;
- HVAC equipment;
- Medical equipment; and
- Pharmaceuticals.

Sectors that have experienced the fastest rate of growth in their location quotient since 2001 include:

- Computer & peripheral equipment;
- Communications equipment;
- Glass products;
- Cut and sewn apparel;
- Forging and stamping, and
- Magnets & optical media mfg.

Of equal importance are sectors that have seen the greatest declines in LQ since 2001, including:

- Turbine and transmission equipment;
- Motor vehicle parts;
- Foundries; and
- Pharmaceuticals.

Re-engagement with all the companies in this last tier is vitally important, for obvious reasons. It should be a key component of the BRE Plan.

Identify a Sector Champion for Manufacturing

While Conexus has provided strong leadership at the state level, with clear delineation of the advanced manufacturing cluster, recovery across Marion County would benefit from focused leadership from a sector champion.

Expand Export Assistance

Expand resources to help local companies better target opportunities to engage global markets, particularly in Asia through enhanced access to trade education, market intelligence, referrals and sales contacts, and trade missions.

Position as One of the President's National Manufacturing Hubs

Through February of 2014, manufacturing hubs in Youngstown, OH and Raleigh, NC have been announced. Indianapolis, not yet a designated hub, should make every effort to attain this designation.

Invigorate Regional Entrepreneurship

Enhance entrepreneurship across Indianapolis. Local strategies include:

- Catalog all the regional entities that are involved in entrepreneurship with the simple goal of clarifying the varied paths to market entry for people who have good ideas. The Indy Chamber has shown leadership in this area; more is needed.
- Work with local educational institutions to expand research and commercial spin-off opportunities. This conversation needs to include IUPUI, an institution which in some ways is being "held back". For example, there are regulations in place that cap the number of on-campus beds for students, reinforcing this institution's on-going role as a commuter campus.
- Evaluate city permitting, zoning, and licensing processes to ensure that current regulations are not unnecessarily inhibiting the process of starting a business. Approaches include "one-stop-shopping" to streamline these processes and moving away from permitting costs set as a percentage of project cost.

Focus on Workforce Development

The structure of workforce development today is linked inexorably to the Workforce Investment Act of 1998, which created the Workforce Investment Boards and “one stop shops” which serve as local conduits for workforce resources. While there is broad agreement that the national workforce system is not meeting the needs of a 21st century workforce, solutions are equally difficult to identify. In this context, the following recommendations are offered:

- Engage with local manufacturers to quantify evolving concerns over worker retirements, and resulting demand for new workers.
- Work toward deliberate connections between high schools and private sector employers. The intent is to create conduits of students who are career-ready leaving high school, in sectors where employers actually need workers.
- Expand existing programs that provide high school students with access to alternative career pathways, including expanded vocational training, apprenticeships, and access to associate degree programs at the HS level.
- Seek out programs that place vocational training on the shop floor of existing and potential local manufacturers.

OUTCOMES

Ultimately, the intention of the FastTrack effort is to lay the ground work for future conversations with the US Department of Commerce, Economic Development Administration (EDA) to ensure that the City of Indianapolis and Marion County are eligible for EDA funding of “Phase II” implementation efforts that align with defined federal priorities, which include:

- Collaborative Regional Innovation: Strategies that support the development and growth of innovation clusters based on existing regional competitive strengths.
- Public/Private Partnerships: Strategies that leverage public and private sector resources and complementary investments
- National Strategic Priorities: Strategies to encourage job growth in advanced manufacturing; IT infrastructure; communities impacted by automotive industry restructuring; urban waters; and innovations in science & health care.
- Global Competitiveness: Initiatives that support high-growth businesses to expand in global markets
- Sustainable Development: Investments that promote job creation by enhancing environmental quality and develop and implement green products, processes, places, and buildings.
- Economically Distressed & Under-served Communities: Investments that strengthen diverse communities that have suffered disproportionate economic job losses.

PERFORMANCE METRICS

Tracking plan performance is critical for two reasons. First, organizations such as EDA are clear that tracking performance over time is an essential aspect of any economic development strategy. Second, the uneven pace of recovery from the recession has generated considerable "noise" in existing data, driving the need to revisit key metrics on a quarterly basis.

For this effort, there are a number of metrics that will require annual tracking:

GIS / Parcel Database Validation:

- Work toward a validated database of sites in public ownership, linked with sites that have brownfield issues. Quarterly reporting of parcels that have been validated is needed.

Industrial:

- Occupancy, market values and linkage with assessed valuation for industrial and brownfield sites
- Change in the number of manufacturing establishments, broken down by sector
- Change in the number of manufacturing jobs and wages paid

Freight Indicators:

- Truck counts at key interstates and arterials
- Train counts along key rail corridors

Broader Economy:

- New capital investments in key industry sectors
- Jobs (new / retained) in specific manufacturing sectors
- Growth in metropolitan area exports and gross regional product
- Change in unemployment rate
- Changes in average wages
- Workforce indicators, including HS students moving through new job training conduits

Fiscal:

- Growth in population, linked with growth in provision of public services
- Growth in general fund revenues and assessed valuation

Indy FastTrack 2014