CREATING A BLUEPRINT

FOR CARGO-ORIENTED DEVELOPMENT IN THE MINNEAPOLIS – ST. PAUL REGION

Metropolitan Council Meeting of the Whole, June 21

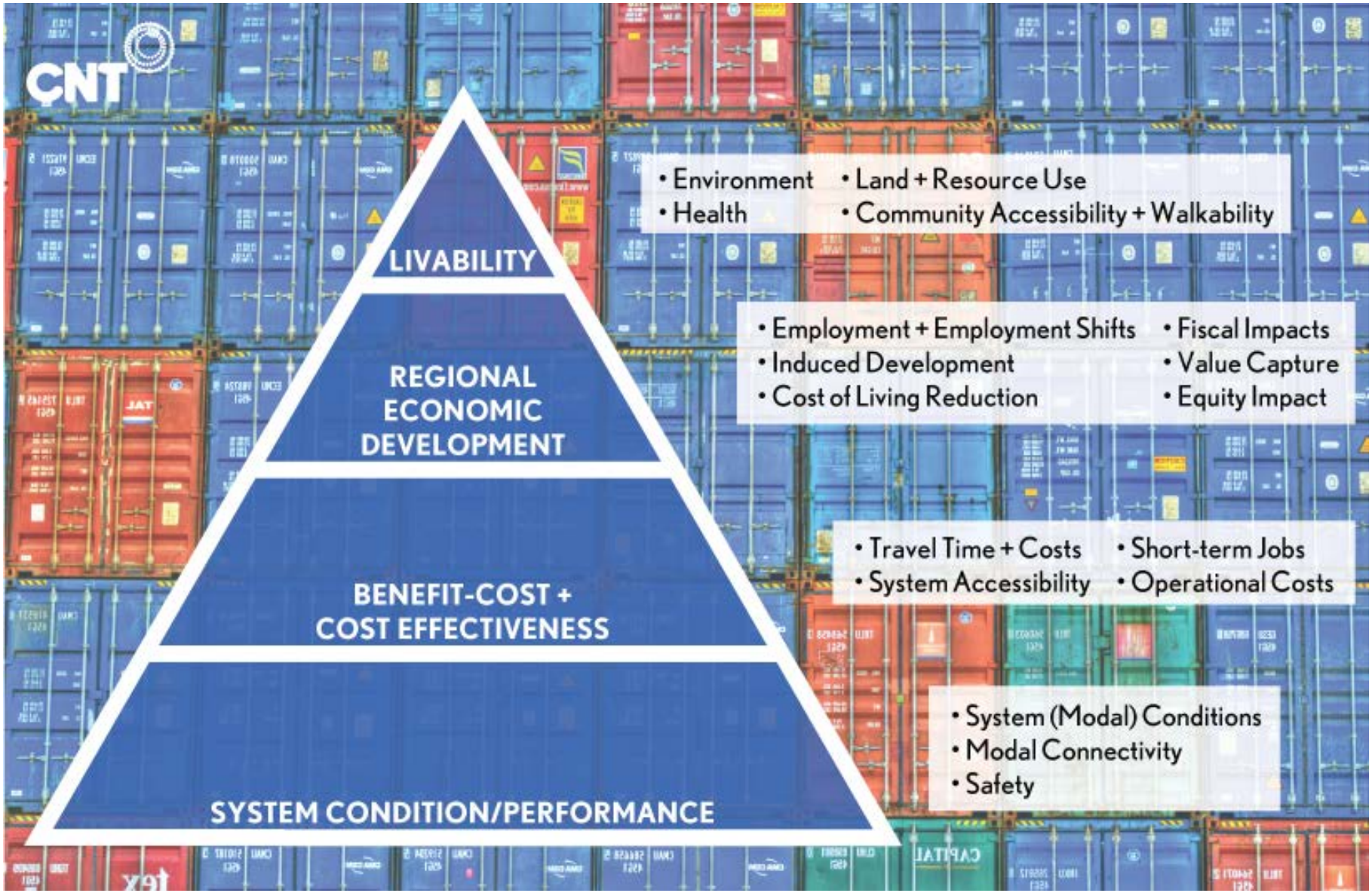
CNT

ABOUT CNT

- CNT is a national hub for research, strategies and solutions to help cities use resources more efficiently and equitably.
- We believe solving problems like poverty, climate change and urban sprawl starts with making neighborhoods, cities and regions work better.
- All of our solutions are built on robust data-driven analysis.

Cargo-Oriented Development (COD)

A form of development that integrates freight system efficiency with the development of manufacturing and logistics businesses in ways that benefit local economies, the environment, and public safety



Using COD to Address the Multiple Interests of Freight-Linked Industrial Development in MSP

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COD Metrics Overview		
A. Local Economic Development	**B. Freight System Efficiency**	**C. Environmental Impact**
Industrial Location Efficiency	Truck and System Productivity	Air Quality
Access for Manufacturers	Travel Time and Reliability	Water Quality
Job Creation and Career Paths	Drayage and Terminal Operations	Noise Level
Worker Transportation Access	Right-Sized Shipping	Lighting
Public Costs and Revenues		Regional Land Use
D. Safety (Affecting All Metrics)		

PRESENTATION OVERVIEW

- Manufacturing and Freight Transportation in MSP
- Geography of Industrial Development and Job Distribution
- Worker Accessibility
- Environmental Quality
- COD Workshop of July 2016
- Toward an MSP Action Plan for COD

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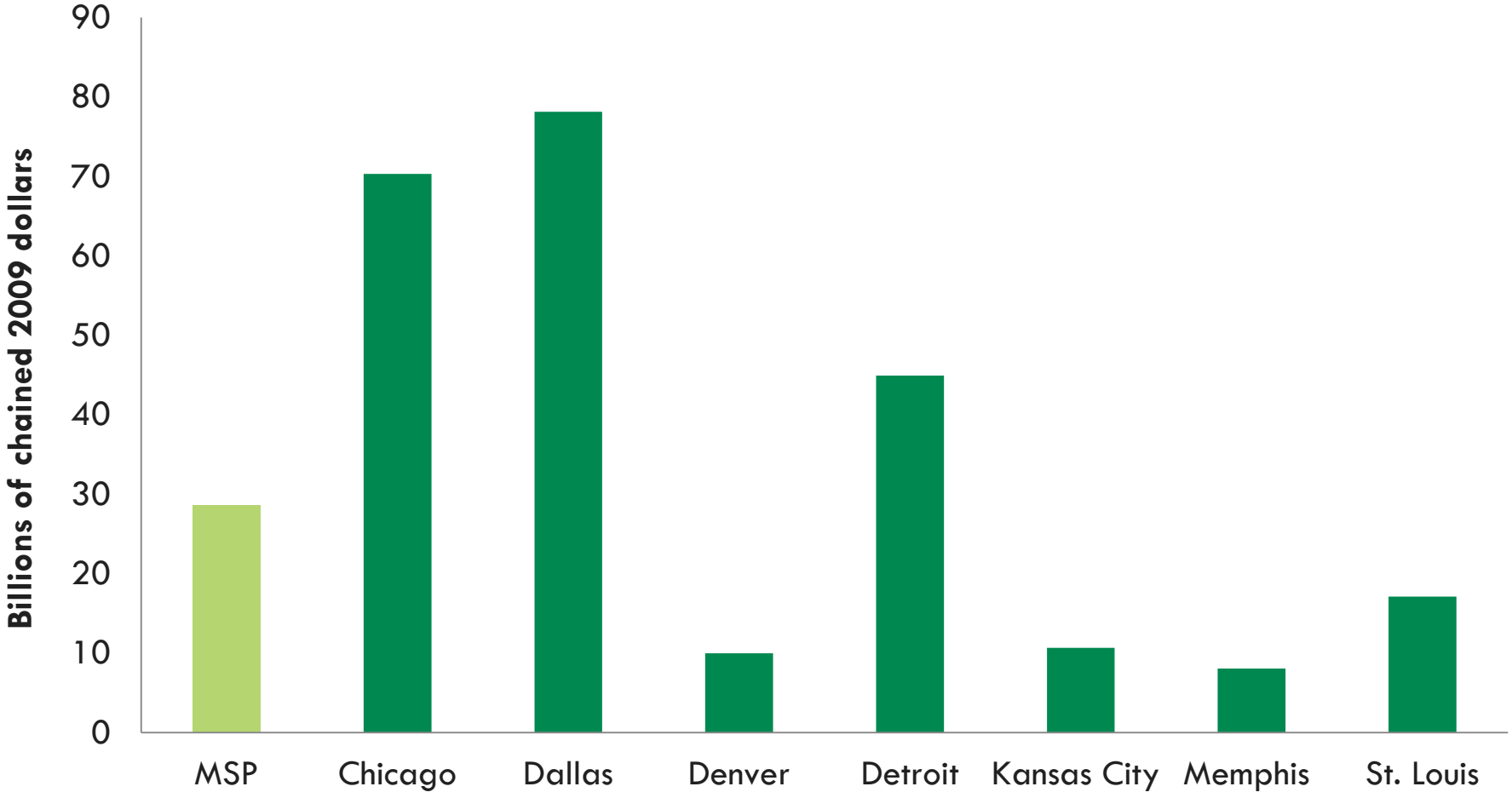

Source: U.S. Bureau of Economic Analysis, Regional Economic Accounts, Table 3. Real Gross Domestic Product (GDP) by Industry by Metropolitan Area, 2009-2014. http://www.bea.gov/iTable/index_regional.cfm. Accessed on 5/16/2016.

Real GDP of Manufacturing Industry by MSA (2014)

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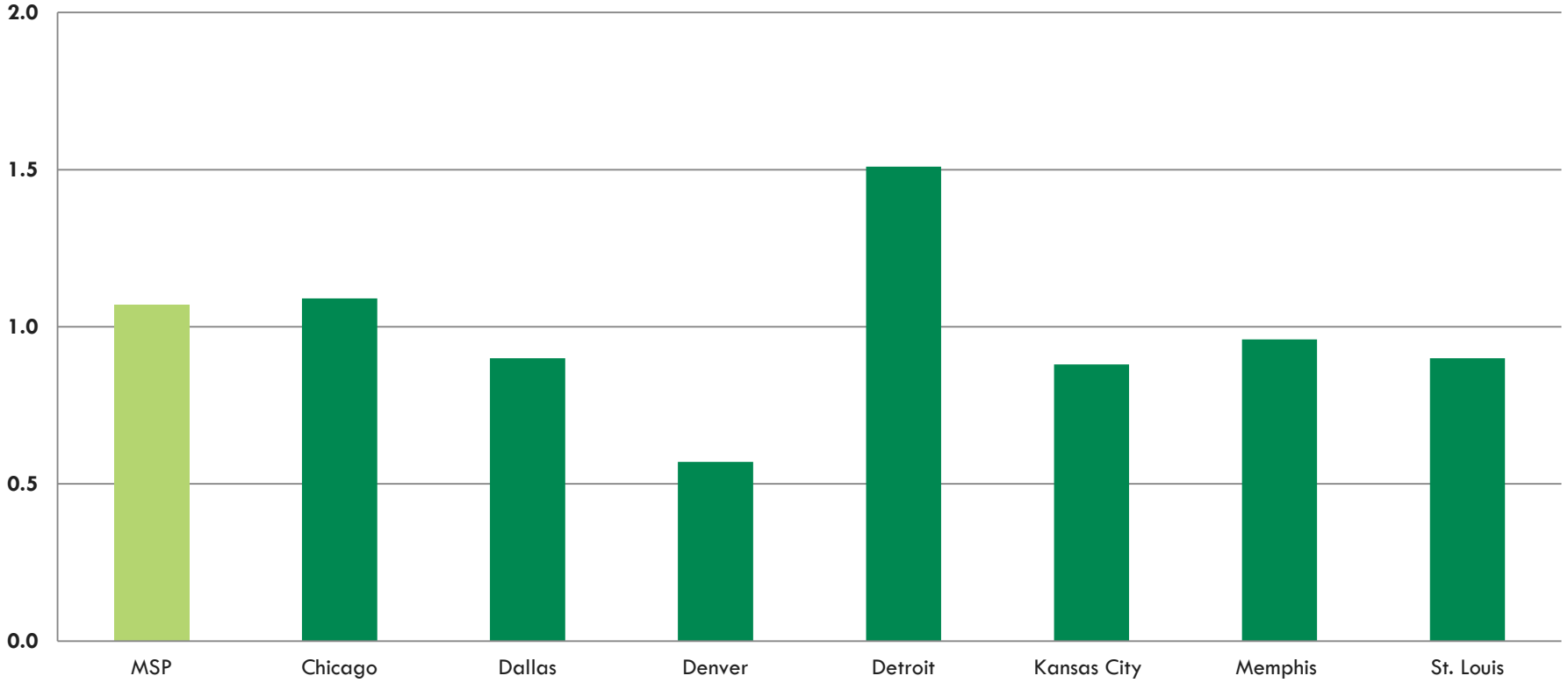

Source: Bureau of Labor Statistics, Occupational Employment Statistics, May 2015, http://www.bls.gov/oes/current/oessrcma.htm, Accessed 5/27/2016

Manufacturing Location Quotient (LQ) by MSA (2015)

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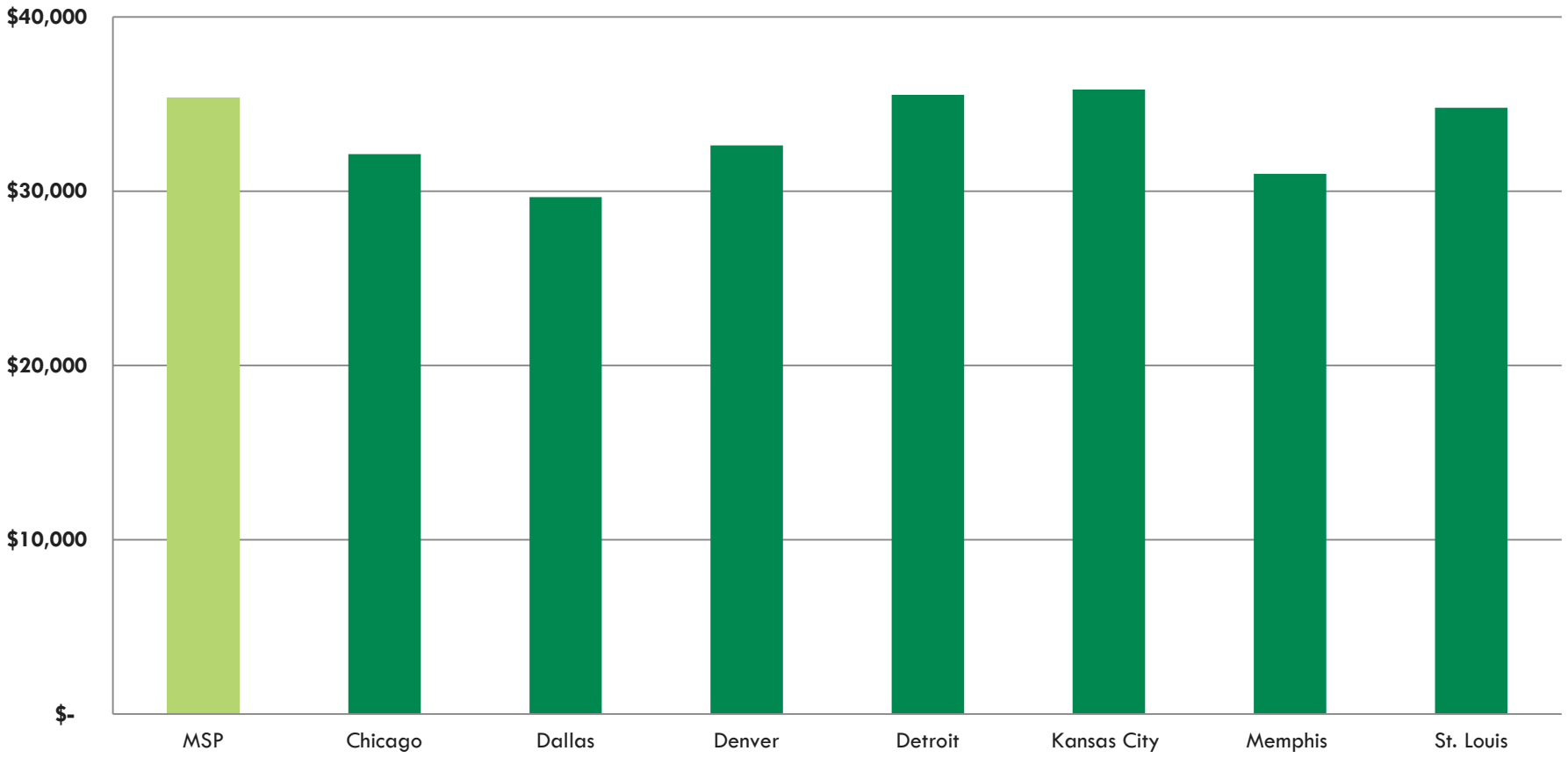

Source: Bureau of Labor Statistics, Occupational Employment Statistics, May 2015, http://www.bls.gov/oes/current/oessrcma.htm, Accessed 5/27/2016.
Note: Wage data refers exclusively to wages for production occupations categorized in the 51-0000 SOC-code category.

Median Annual Wage in Manufacturing by MSA (2015)

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Economic Census	Percent Change (2002-2012)			
	Establishments	Employees	Annual Payroll	Production Workers Annual Wages
Chicago	-20%	-30%	-7%	-4%
Dallas	-14%	-19%	4%	5%
Denver	-14%	-29%	-12%	-8%
Detroit	-22%	-35%	-22%	-28%
Kansas City	-19%	-14%	9%	5%
Memphis	-23%	-26%	5%	-2%
MSP	-11%	-16%	14%	5%
St. Louis	-16%	-33%	-13%	-16%

Source: U.S. Census Bureau, Economic Census from 2002, 2007, 2012. http://www.census.gov/econ/census/data/ Accessed on April 24, 2016.

EXAMPLES OF TOP 20 SOC CODES PRODUCTION				
SOC CODE	SOC TITLE	Total Employment	Location Quotient	Annual Median Salary
51-0000	Production Occupations	132,730	1.07	35,380
51-5113	Print Binding and Finishing Workers	2,440	3.42	37,540
51-9082	Medical Appliance Technicians	610	3.06	35,550
51-4012	Computer Numerically Controlled Machine Tool Programmers, Metal and Plastic	820	2.34	54,500
51-0000	Production Occupations	132,730	1.07	35,380
51-4041	Machinists	7,770	1.43	47,980
51-2099	Assemblers and Fabricators, All Other	6,920	2.22	32,280
51-5112	Printing Press Operators	3,920	1.71	42,880
51-5113	Print Binding and Finishing Workers	2,440	3.42	37,540
51-2023	Electromechanical Equipment Assemblers	1,730	2.73	33,830
51-3099	Food Processing Workers, All Other	1,420	2.29	27,500

MANUFACTURING		MINNEAPOLIS ST. PAUL REGION					SHIFT SHARE (%)	
SOC CODE	SOC TITLE	L.Q.	EMPLOYMENT		CHANGE	% CHANGE	NATIONAL SHIFT	LOCAL SHIFT
			2005	2015				
51-0000	Production Occupations Total	1.07	135,740	132,730	-3010	-2.22%	-17%	9%
51-2022	Electrical and electronic equipment assemblers	2.65	2,930	7,650	4,720	161%	-3%	159%
51-4041	Machinists	1.43	5,750	7,770	2,020	35%	2%	27%
51-2099	Assemblers and fabricators, all other	2.22	4,970	6,920	1,950	39%	-17%	51%
51-9082	Medical appliance technicians	3.06	80	610	530	663%	30%	627%
51-2092	Team assemblers	0.9	18,620	13,710	-4,910	-26%	-16%	-16%

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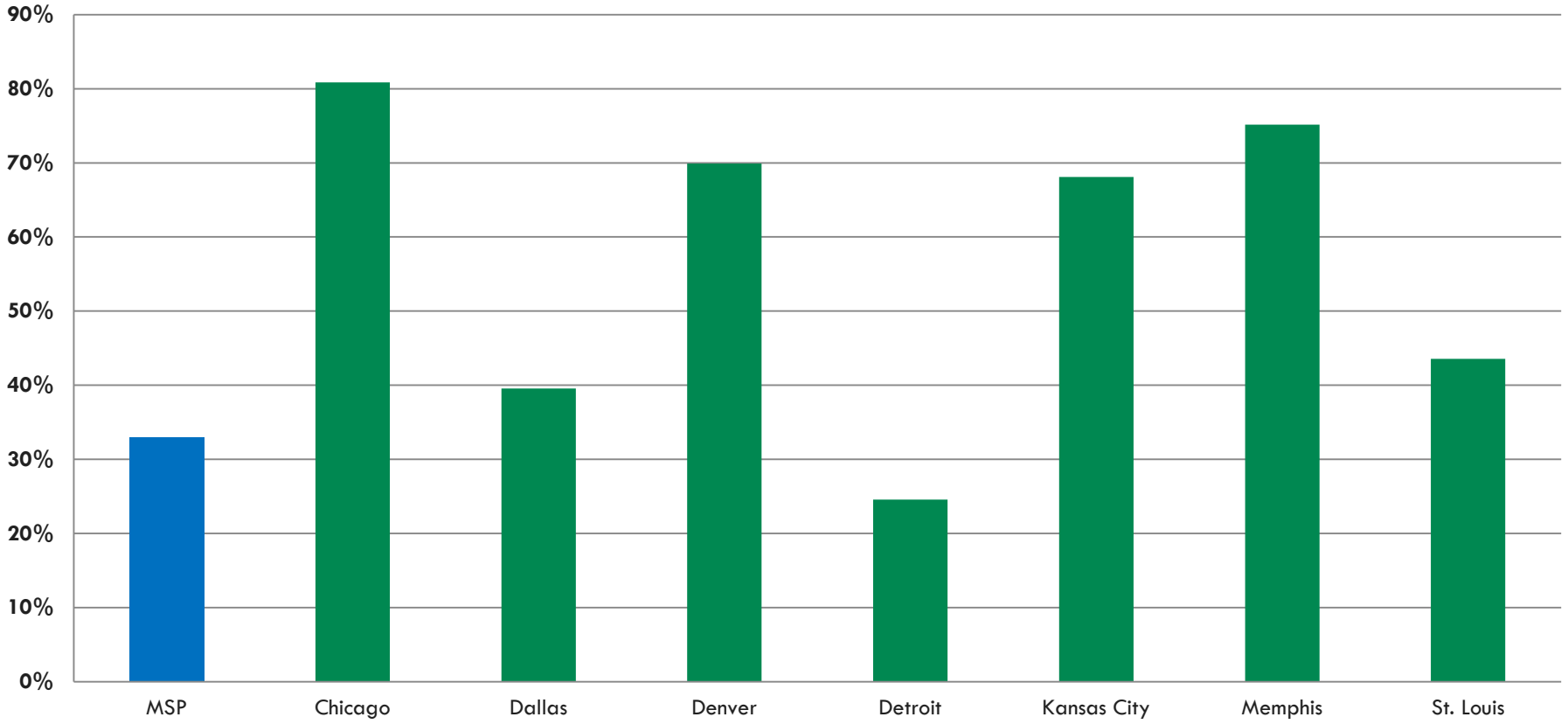
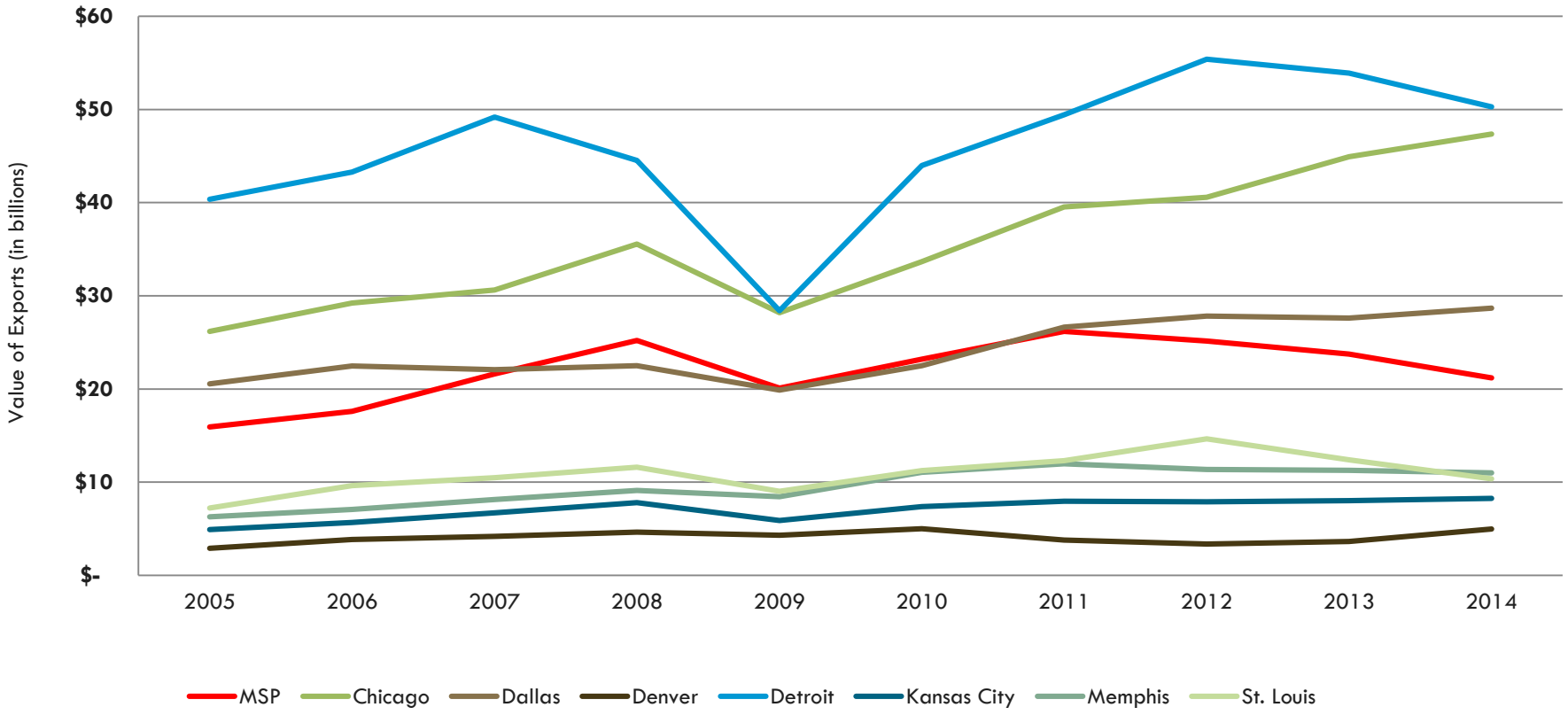
MSP Sectors Grew While National Sectors Shrank



Source: U.S. International Trade Administration, Metropolitan Export Data, http://www.trade.gov/mas/ian/metroreport/index.asp, Accessed 4/25/2016.

Percent Change in Value of Exports by MSA (2005-2014)



Source: U.S. International Trade Administration, Metropolitan Export Data, http://www.trade.gov/mas/ian/metroreport/index.asp, Accessed 4/25/2016.

Value of Exports by MSA (2005-2014)

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	MSP Region Exports 2014		Percent Change		
NAICS	NAICS Description	Value 2014	2005-2014	2010-2014	2012-2014
111	Crop Production	$4,063,614,004	53%	-36%	-55%
334	Computer and Electronic Product Manufacturing	$3,377,171,204	26%	10%	5%
333	Machinery Manufacturing	$2,810,046,288	21%	9%	4%

Source: U.S. International Trade Administration, Metropolitan Export Data, http://www.trade.gov/mas/ian/metroreport/index.asp, Accessed 4/25/2016.

MSP Exports by 3-digit NAICS Code, 2005-2014

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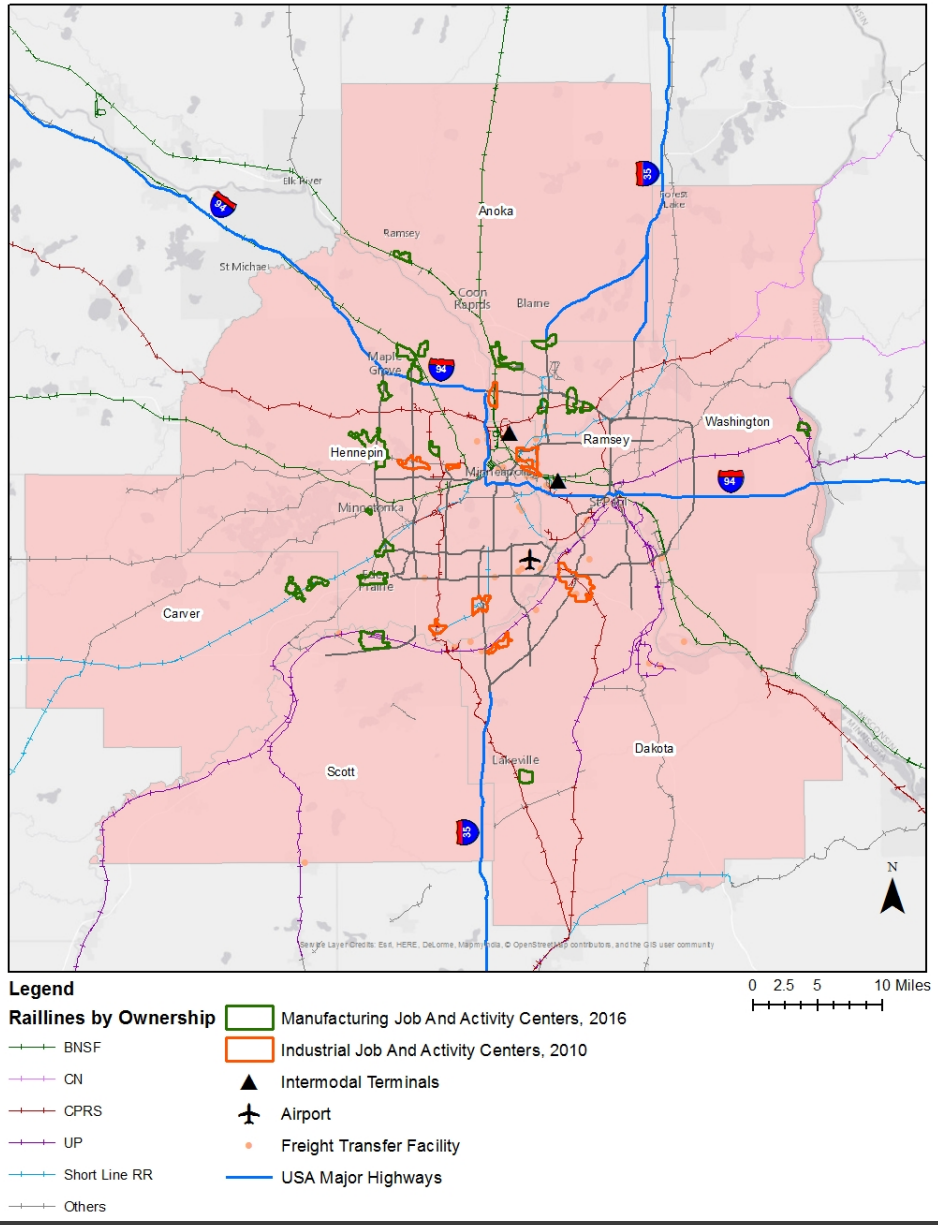

Industrial Job Centers and Freight Assets

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Outbound Freight by Mode (2015 Estimate)	Total Weight in Tons (Thousands)	% Weight	Total Value (millions)	% Value
MSP TOTAL	154,390		$218,378	
Air (include truck-air)	97	0.1%	$9,791	4.5%
Multiple modes & mail	3,569	2.3%	$41,255	18.9%
Other and unknown	3	0.0%	$24	0.0%
Pipeline	662	0.4%	$213	0.1%
Rail	5,613	3.6%	$3,069	1.4%
Truck	137,407	89.0%	$161,836	74.1%
Water	7,039	4.6%	$2,191	1.0%

MSP Exports and Domestic Outbound Shipments

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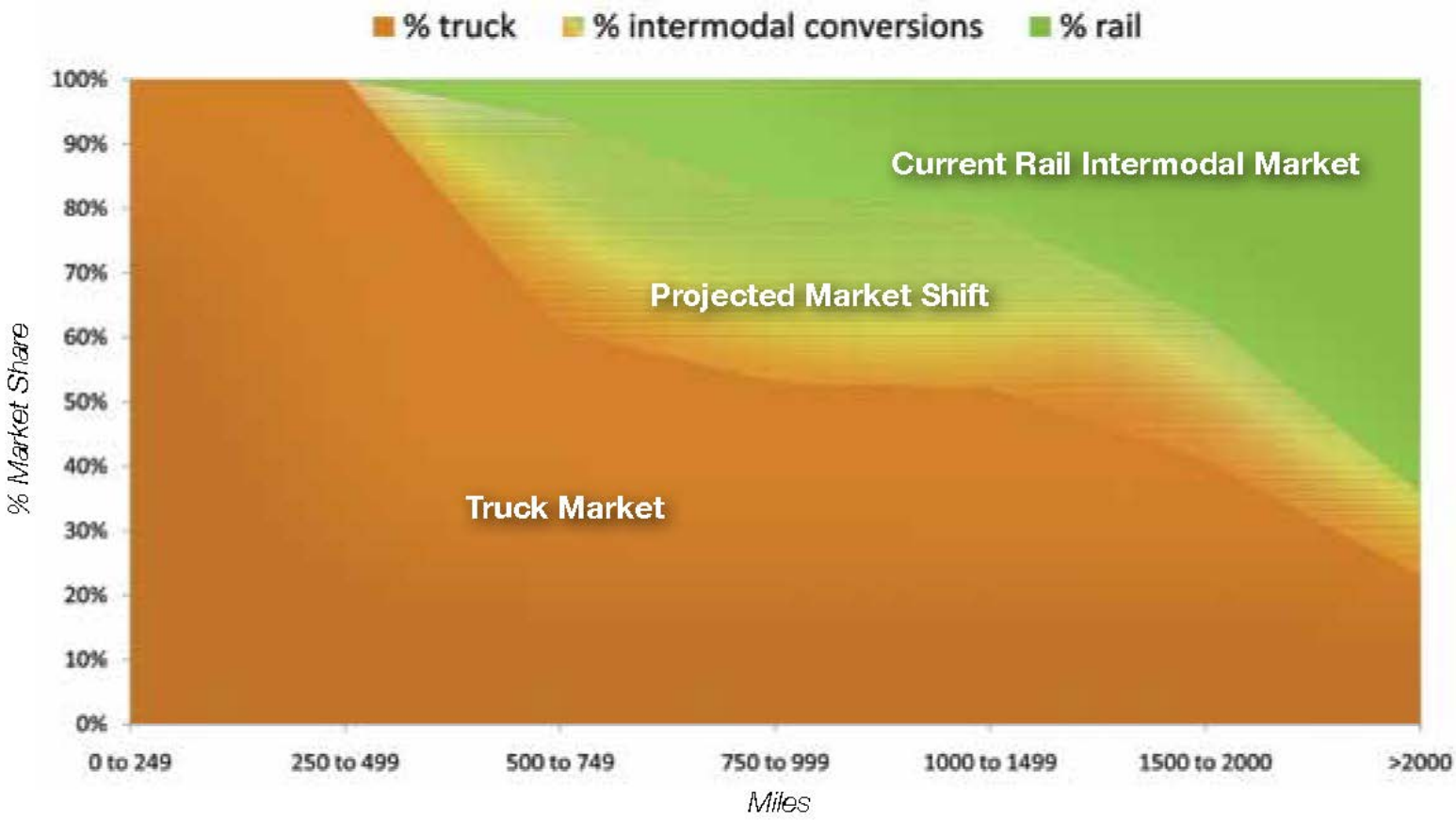

Source: *National Rail Plan: Moving Forward*. Federal Railroad Administration, September 2000

Truck and Intermodal Rail Marketshare

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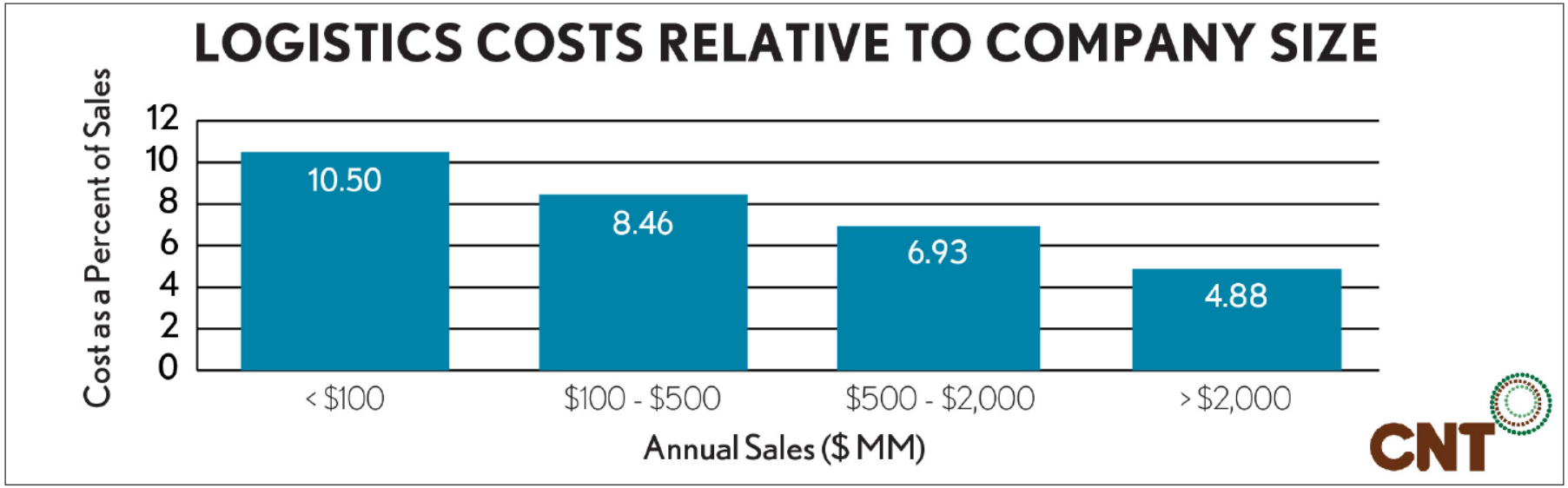

Source: Adapted from Establish Davis Logistics, Report to the Council of Supply Chain Management Professional (CSCMP) re the Council's annual report "State of Logistics 2013."

Logistics Costs Relative to Company Size

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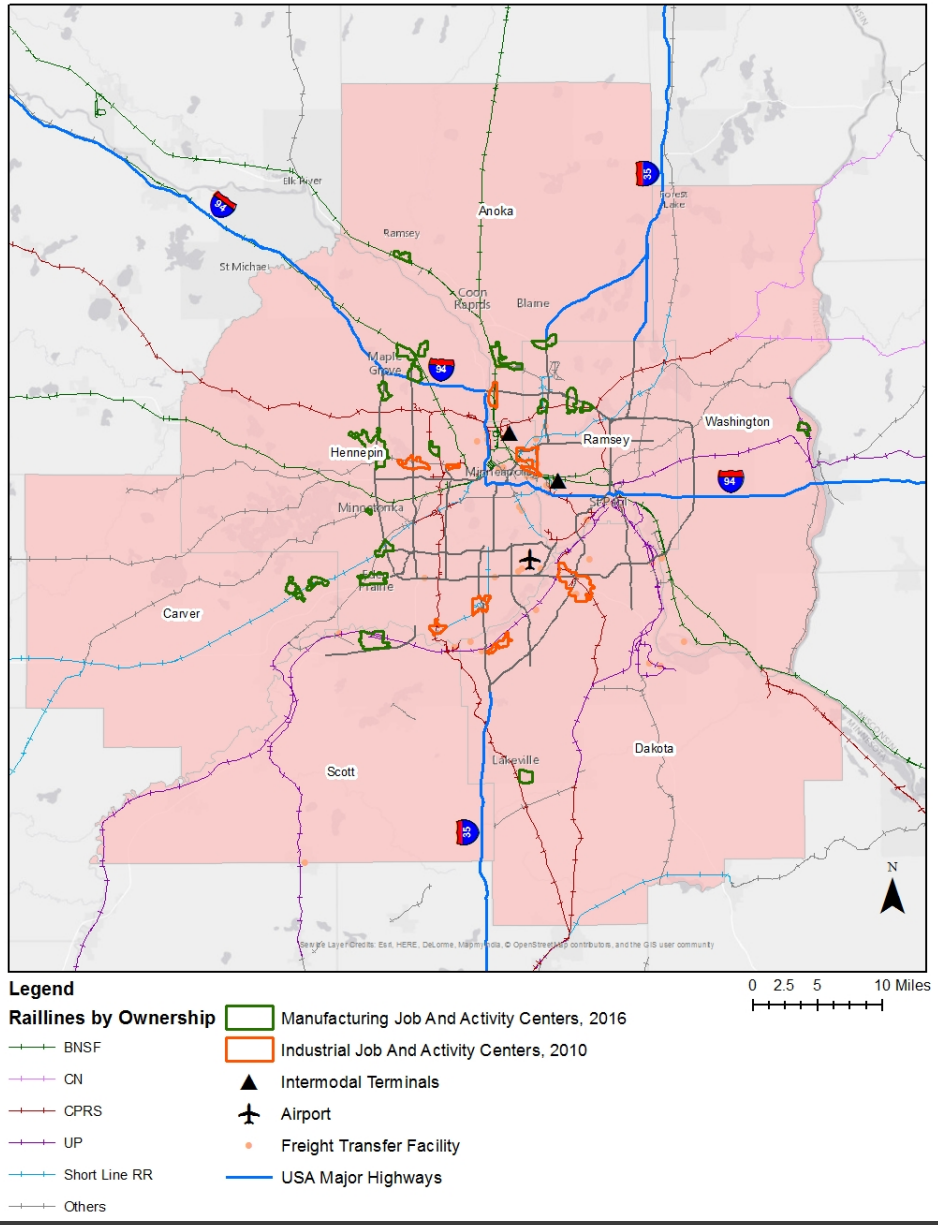

Industrial Job Centers and Freight Assets

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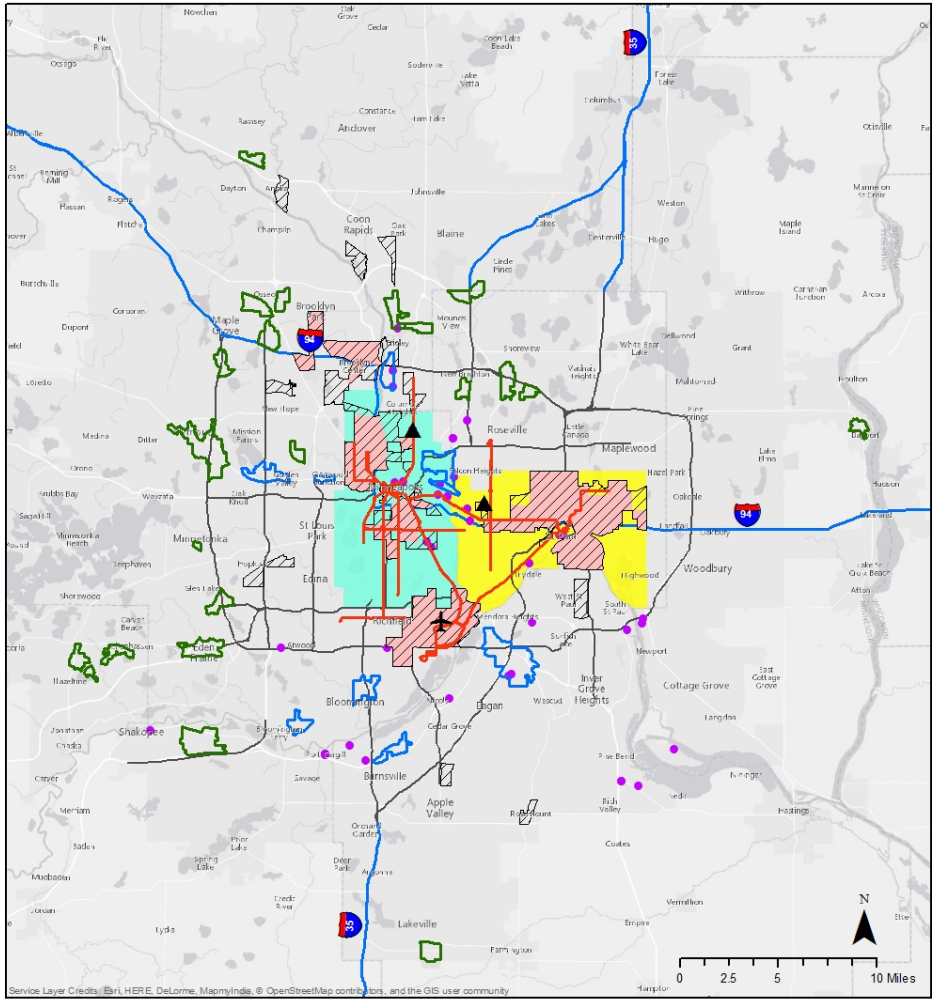

Legend

- Manufacturing Job And Activity Centers, 2016
- Industrial Job And Activity Centers, 2010
- Areas Of Concentrated Poverty, ACS 2014
- Areas Of Concentrated Poverty - 50% minority
- High Frequency Transit Network
- Intermodal Terminals
- Airport
- Freight Transfer Facility
- USA Major Highways
- Minneapolis
- Saint Paul

*Industrial Centers & Poverty Concentraion Data are from the Metropolitan Council

Areas of Concentrated Poverty and Industrial Employment Centers

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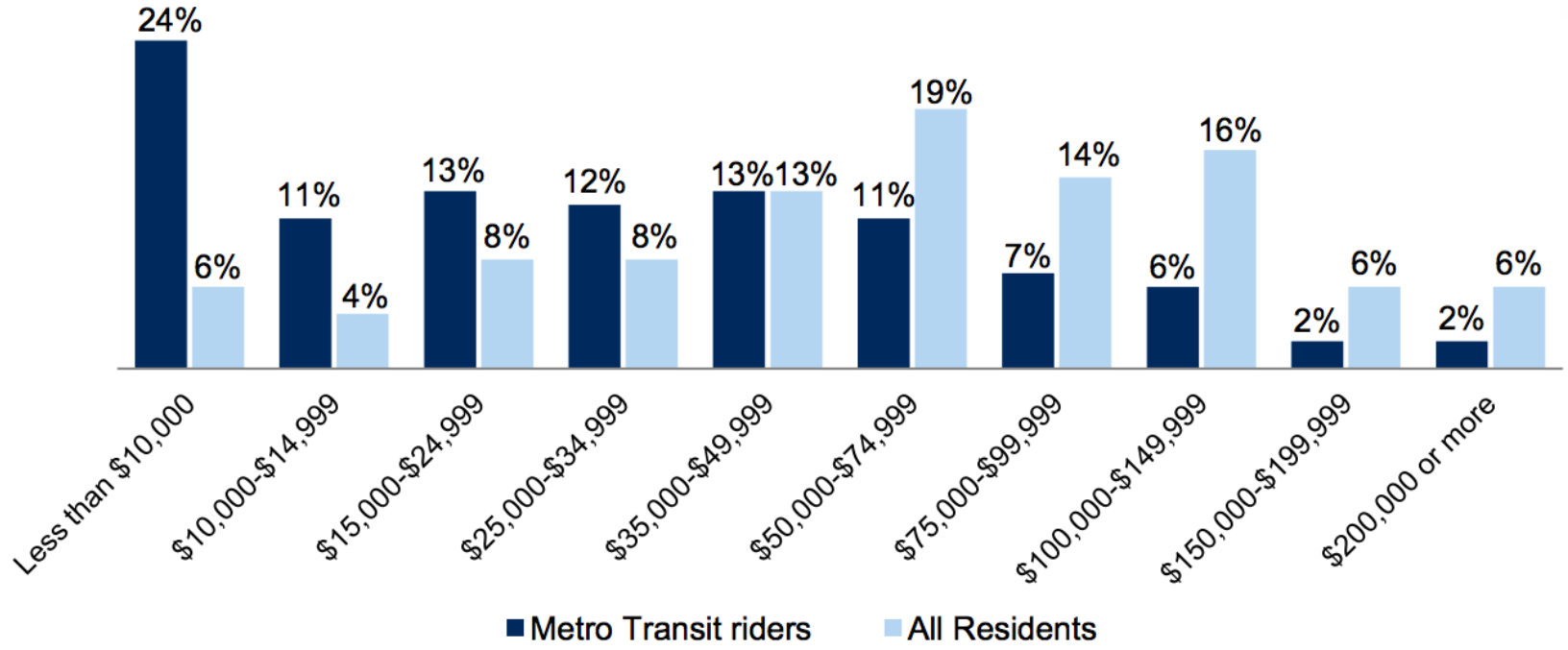
7.8 Household income distribution of residents in the Twin Cities region compared to transit riders (2011 dollars)



Source: Metropolitan Council, Choice, Place and Opportunity

Household Income Distribution of Residents in the Twin Cites Region Compared to Transit Riders (2011 dollars)

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60% OF ALL MANUFACTURING JOBS IN THE MSP METRO AREA ARE WITHIN ½ MILE OF FIXED ROUTE TRANSIT

- 2,370 block groups
- 90% have 0-50 mfg. jobs
- 10% have 51-5831 mfg. jobs

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THREE COUNTIES HAVE 83% OF MANUFACTURING JOBS NEAR TRANSIT (100,000 JOBS)

Hennepin	**60,000**
Ramsey	**22,000**
Anoka	**18,000**
Other 11 Counties	20,000

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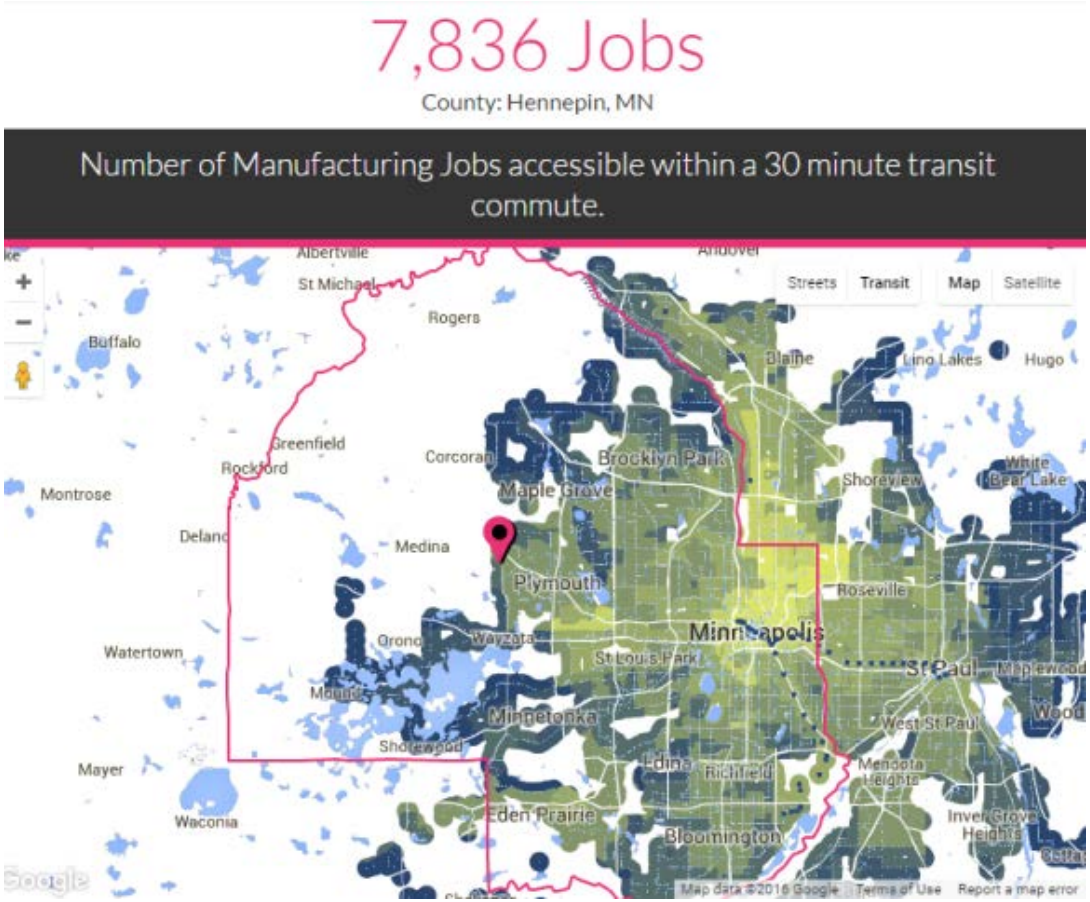
TRANSIT PROXIMITY VS. TRANSIT ACCESSIBILITY

Hennepin County has 60,000 mfg. jobs within ½ mile

But only **7,800** are accessible by a 30 minute transit ride **(13%)**



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TRANSIT PROXIMITY VS. TRANSIT ACCESSIBILITY

Ramsey County has 22,000 mfg. jobs within ½ mile

But only **6,600** are accessible by a 30 minute transit ride **(30%)**

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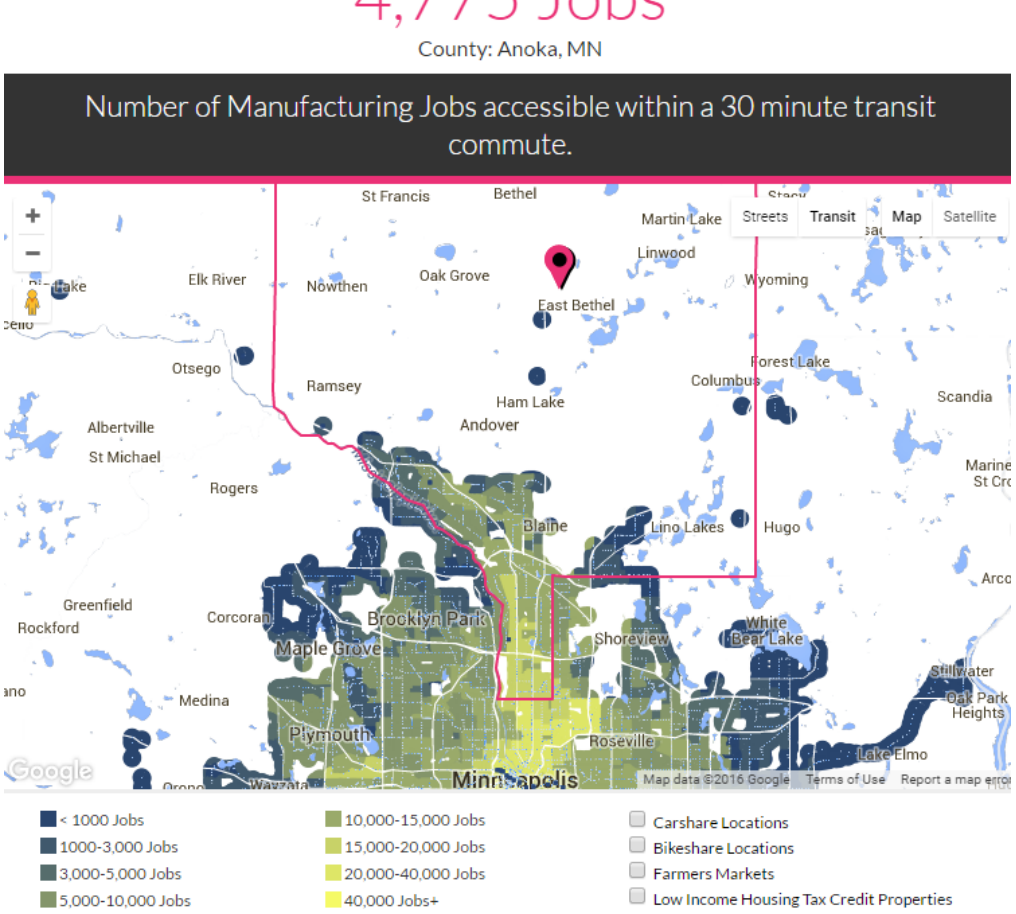
TRANSIT PROXIMITY VS. TRANSIT ACCESSIBILITY

Anoka County has 18,000 mfg. jobs within ½ mile

But only **4,800** are accessible by a 30 minute transit ride **(27%)**



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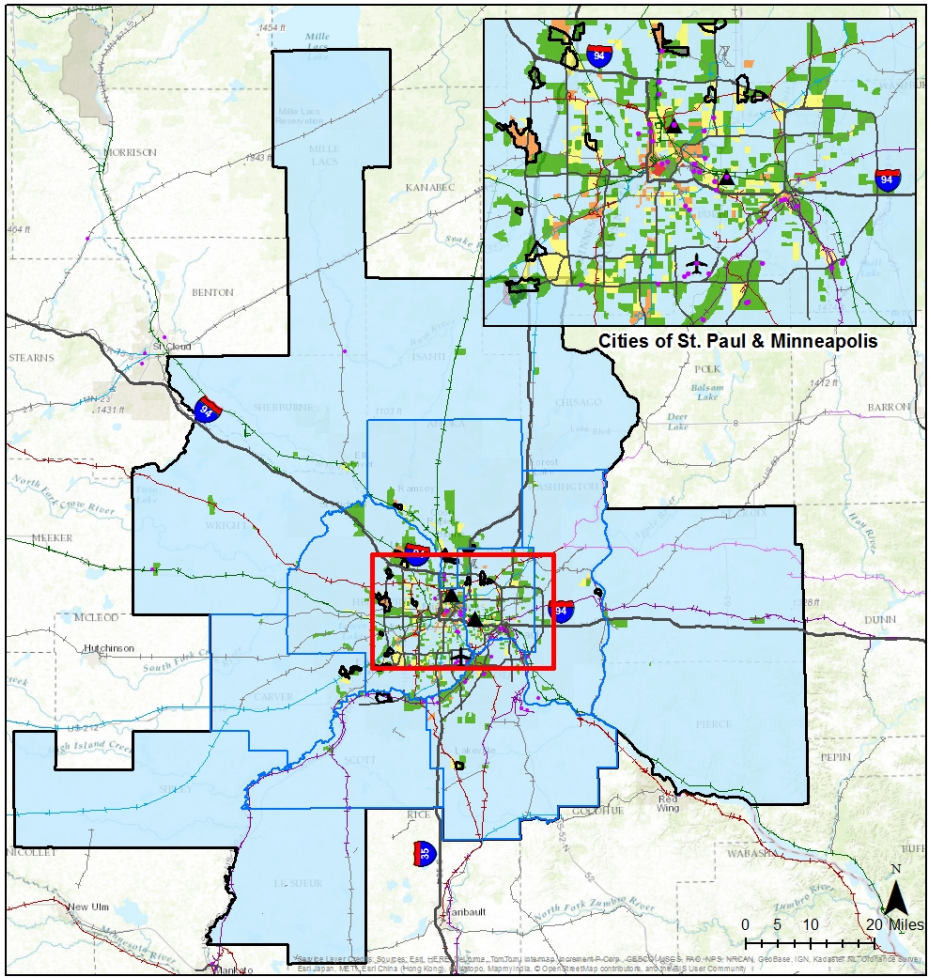

Legend

Manufacturing businesses per square mile

- 0 - 5
- 6 - 14
- 15 - 29
- 30 - 66
- 67 - 146

Raillines by Ownership

- BNSF
- CN
- CPRS
- UP
- Short Line RR
- Others

- Manufacturing Job Centers
- Intermodal Terminals
- Freight Transfer Facility
- Airport
- USA Major Highways
- CBSA
- Counties in MPO area

Manufacturing Businesses per Square Mile

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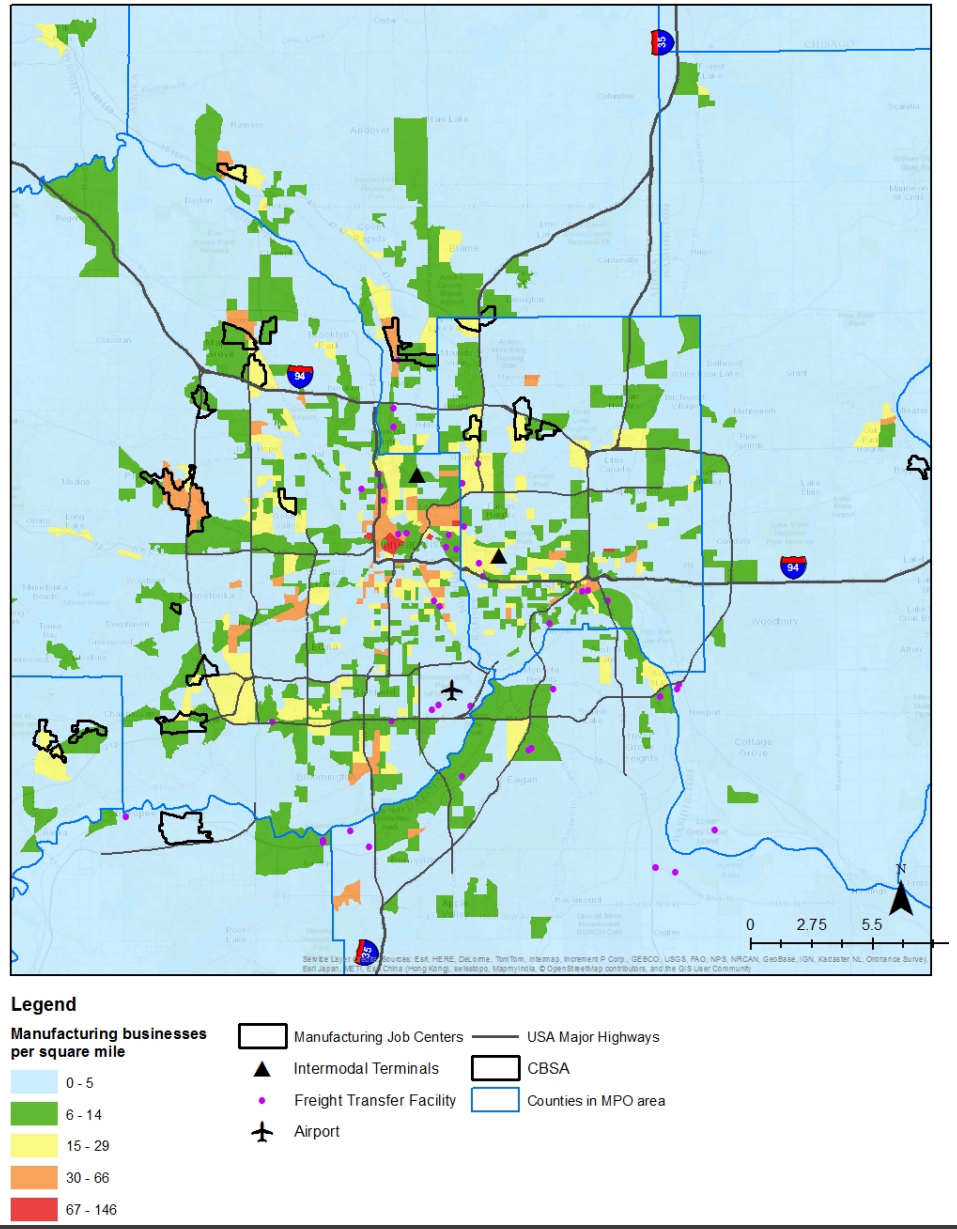

Enlarged View of Manufacturing Businesses in the Central Cities and Inner Suburbs of MSP

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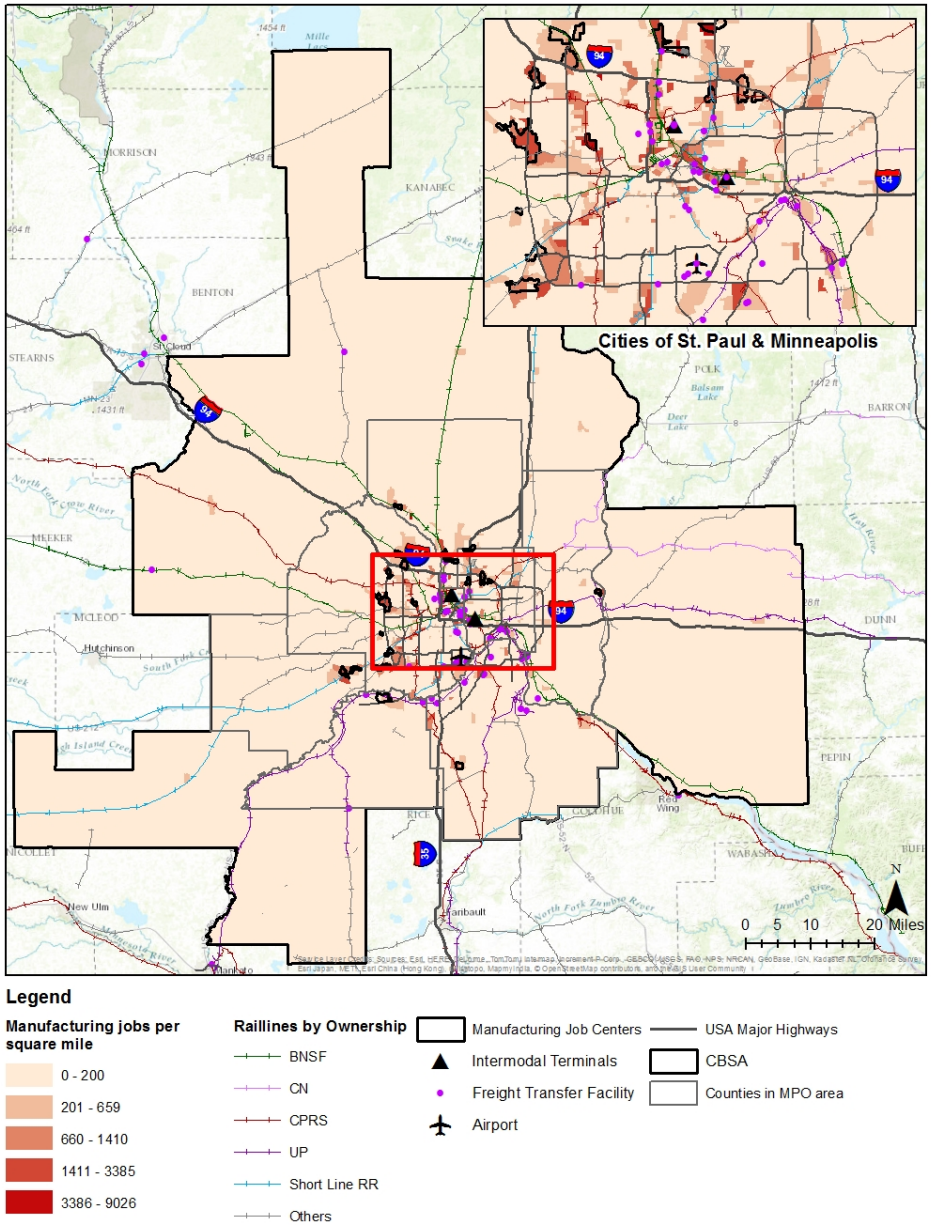
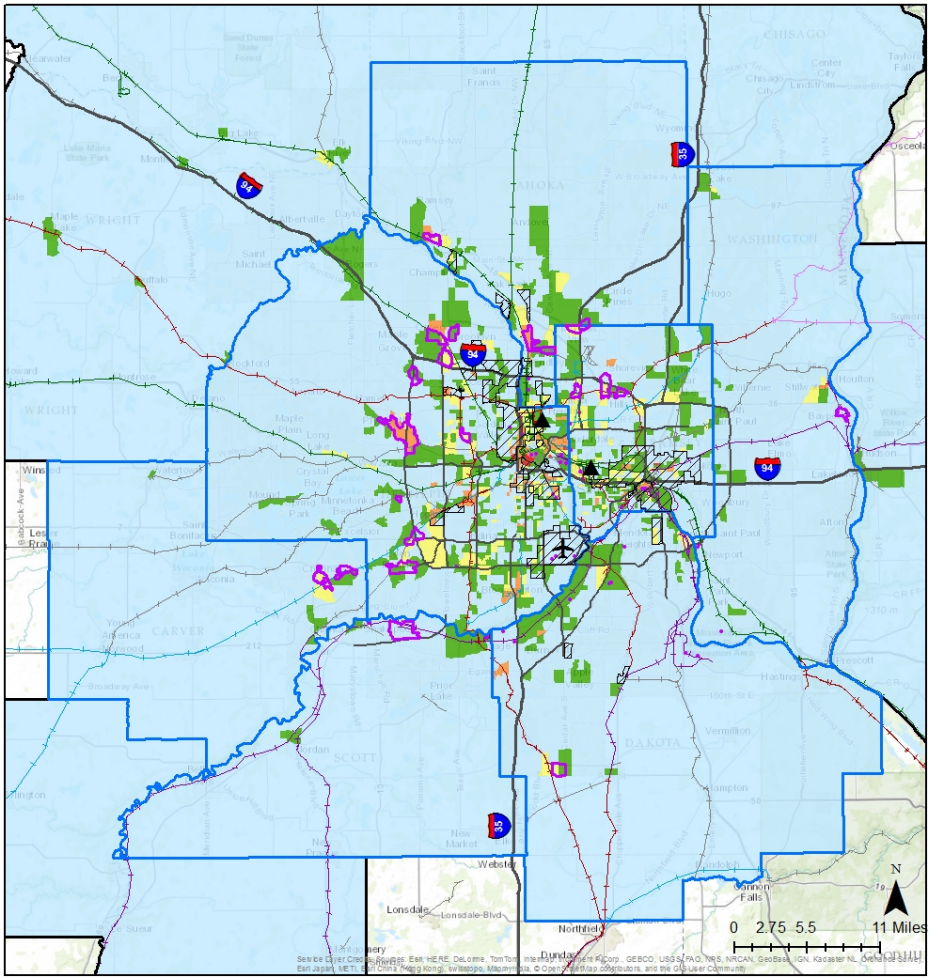


Manufacturing Jobs per Square Mile



Manufacturing Businesses and Areas of Concentrated Poverty

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	Minneapolis & St Paul	CBSA	Manufacturing Job Centers*
Number of Industrial Jobs	42,822	332,824	31,233
Number of Manufacturing Jobs	19,422	190,346	23,804

Source: ESRI Business Analyst

Distribution of Manufacturing & Industrial Jobs

Source: Metropolitan Council

Potential for Place-based Workforce Development

Fuel Consumption and Freight Ton-Miles Moved by Truck and Rail, 1980 -2011

Year	Truck		Rail	
	Diesel Fuel Consumed (thousands of barrels per day)*	Ton-Miles of Freight (millions)**	Diesel Fuel Consumed (thousands of barrels per day)*	Ton-Miles of Freight (millions)**
1980	1,302	1,266,631	262	932,000
1990	1,597	1,707,373	216	1,064,408
2000	2,298	2,326,524	256	1,546,319
2011	2,766	2,643,567	253	1,725,634

** Transportation Energy Data Book, Edition 34, Table 1.14*

*** Bureau of Transportation Statistics, National Transportation Statistics, Table 1-50, Ton-Miles of Freight*

Basic Fuel Consumption of Trucks & Rail

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Heavy Trucks Using Diesel Fuel as a Factor in the Presence of Criteria Pollutants

(millions of short tons)

Pollutant	1970	2011
Carbon Monoxide		
Total Generated by Transportation	174.6	36.3
Heavy Diesel Vehicles	0.49	0.77
Percent Diesel	0.3%	4.2%
Nitrogen Oxides		
Total Generated by Transportation	15.27	7.16
Heavy Diesel Vehicles	1.76	2.56
Percent Diesel	14.5%	45.8%
Volatile Organic Compounds		
Total Generated by Transportation (millions)	18.53	4.01
Heavy Diesel Vehicles (thousands)	460	213
Percent Diesel	2.7%	9.7%
Particulate Matter (PM-10)		
Total Generated by Transportation (millions)	0.64	0.49
Heavy Diesel Vehicles (thousands)	113	168
Percent Diesel	23.5%	45.3%

Source: Transportation Energy Handbook, Tables 12.2 to 12.11

Heavy Trucks Using Diesel Fuel as a Factor in the Presence of Criteria Pollutants

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Source: Mi-Jack

Freight Facilities Can Be Designed & Equipped to Become Good Neighbors

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COD WORKSHOP PARTICIPATION

Alliance for Metro Stability
City of St. Paul
Expo 2023 – Minnesota's World Fair
Minnesota Freight Advisory Committee
Greater MSP
Koch Logistics
Economic Development Association of Minnesota
Midwest Shippers Association
Minnesota Commercial Railroad
MNDEED
MnDOT
North Prospect Neighborhood Association
Pillsbury United Communities
Ramsey County
State of MN, PRISM
St. Paul Port Authority
ULI Minnesota

- Limited road, rail, transit capacity
- First\Last mile infrastructure challenges
- Limited intermodal capacity driving up shipper costs
- Threatened rail-served industrial businesses & sites

Freight Carrier's Perspective

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- Meeting industrial companies' complex needs anywhere in the region
- Infill development for small manufacturing support, worker access, and sustainability
- Making infill development work through community planning and green logistics technology

- Negotiating community benefits from new intermodal freight service

Industrial Development Perspective

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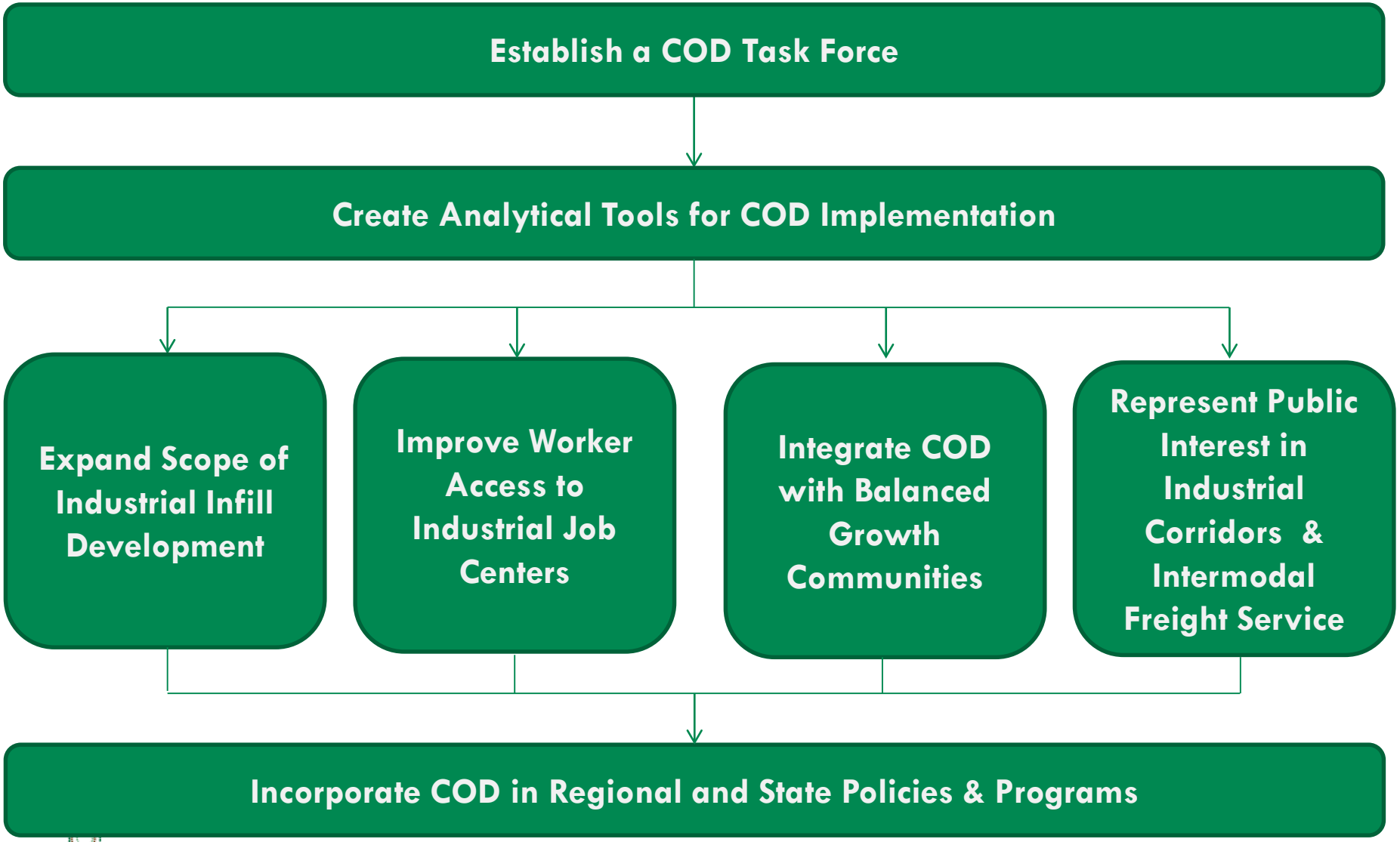
Project Flow



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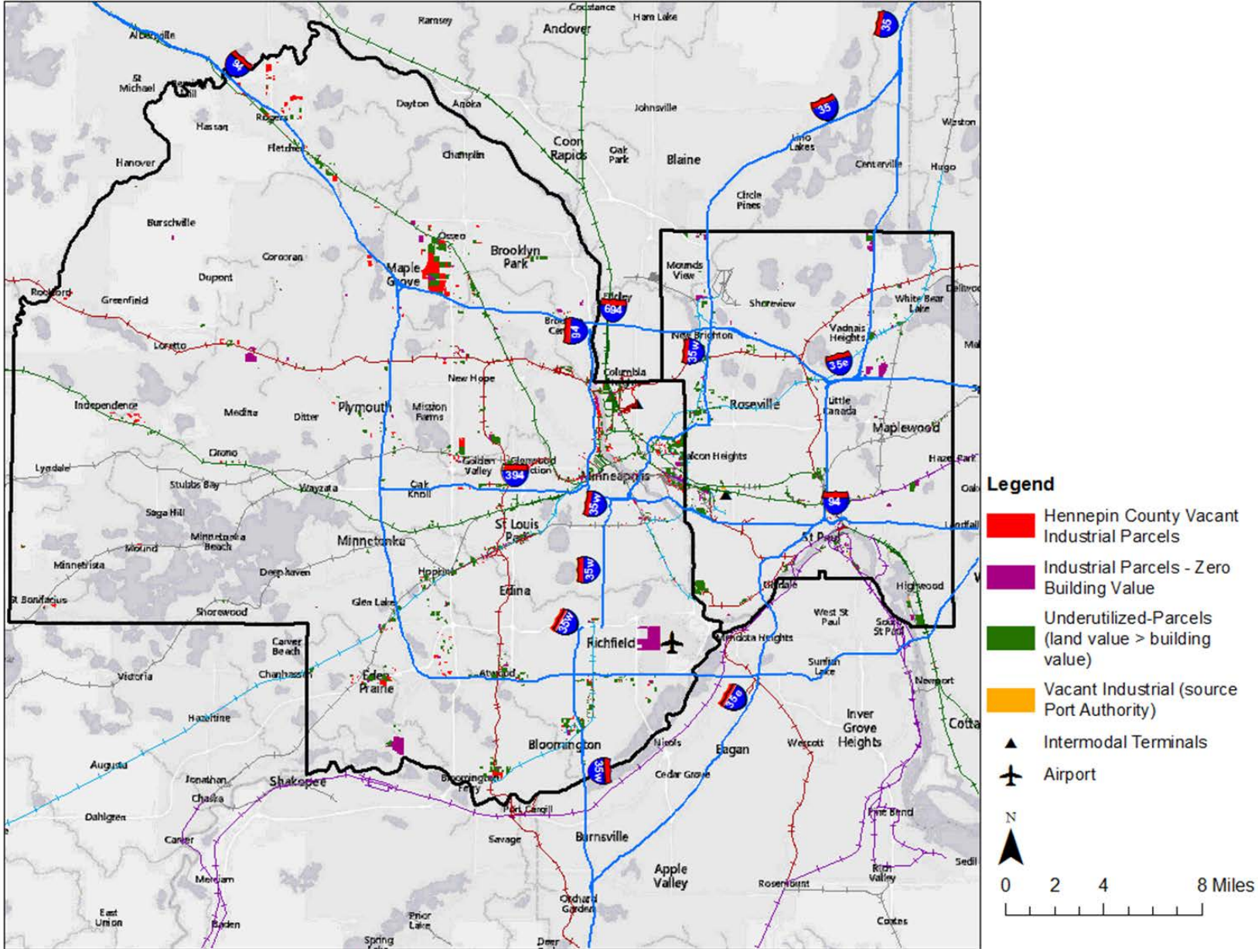

Map of Potential COD Sites in MSP

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SUMMARY OF SITES IN RAMSEY & HENNEPIN COUNTIES

Size (acres)	Number of Sites	Sum of acres	Average size (acres)
0.00-5.00	1110	1476.7	1.3
5.01-10.00	187	1310.6	7.0
10.01-15.00	92	1121.3	12.2
15.01-20.00	45	788.3	17.5
20.00-25.00	14	304.6	21.8
25.01-30.00	12	320.4	26.7
30.01-35.00	7	228.2	32.6
35.01-40.00	8	301.1	37.6
40.01-45.00	5	206.1	41.2
45.01-50.00	3	146.0	48.7
55.01-60.00	1	59.4	59.4
70.01-75.00	2	146.5	73.3
75.01-80.00	2	155.1	77.5
80.01-85.00	3	249.7	83.2
90.00-95.00	2	185.5	92.7
95.01-100.00	3	294.2	98.1
100.01-105.00	1	103.0	103.0
105.00-110.00	1	106.0	106.0
120.00-125.00	1	121.4	121.4
210.00-215.00	1	212.4	212.4
225.00-230.00	1	226.5	226.5
430.00-435.00	1	430.2	430.2
455.00-460.00	1	458.8	458.8

	Hennepin County	Ramsey County
Underutilized Parcels	3,503.29	1,509.33
Parcels (Bld Val 0)	1,326.53	648.72
Vacant Industrial Land	1,966.69	-
SPPA Vacant Land	-	254.75

Preliminary Estimate of Potential COD Site Acreage

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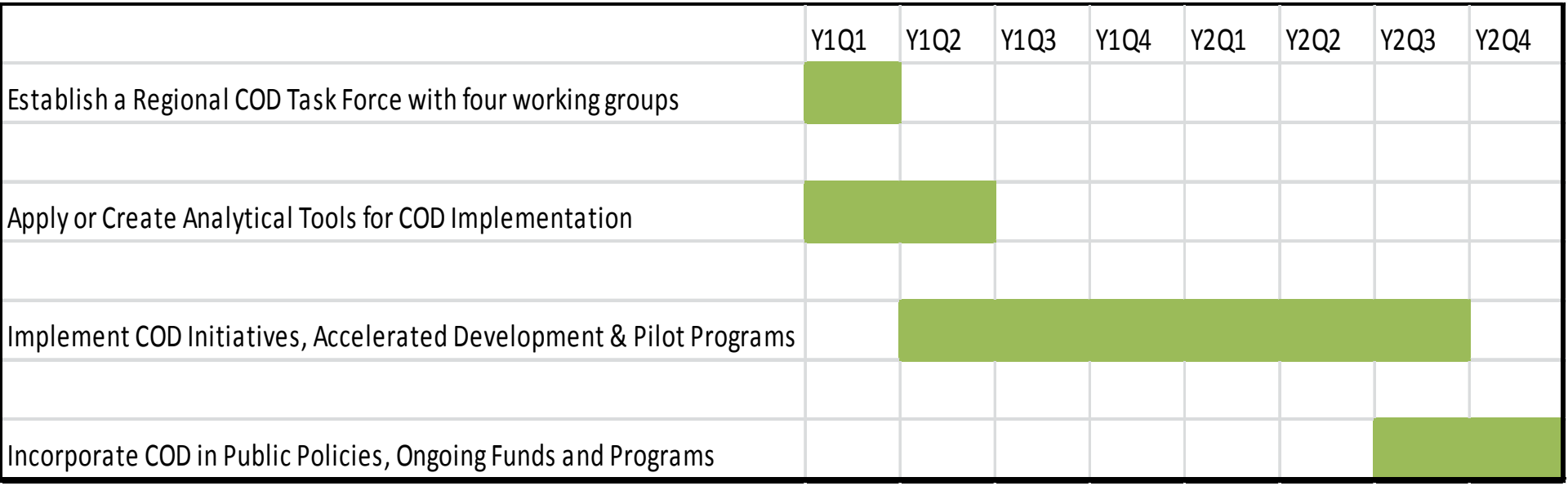
MSP COD IMPLEMENTATION PROJECT TIMELINE



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THANK YOU

David Chandler
Center for Neighborhood Technology
david@cnt.org
www.cnt.org

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