



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



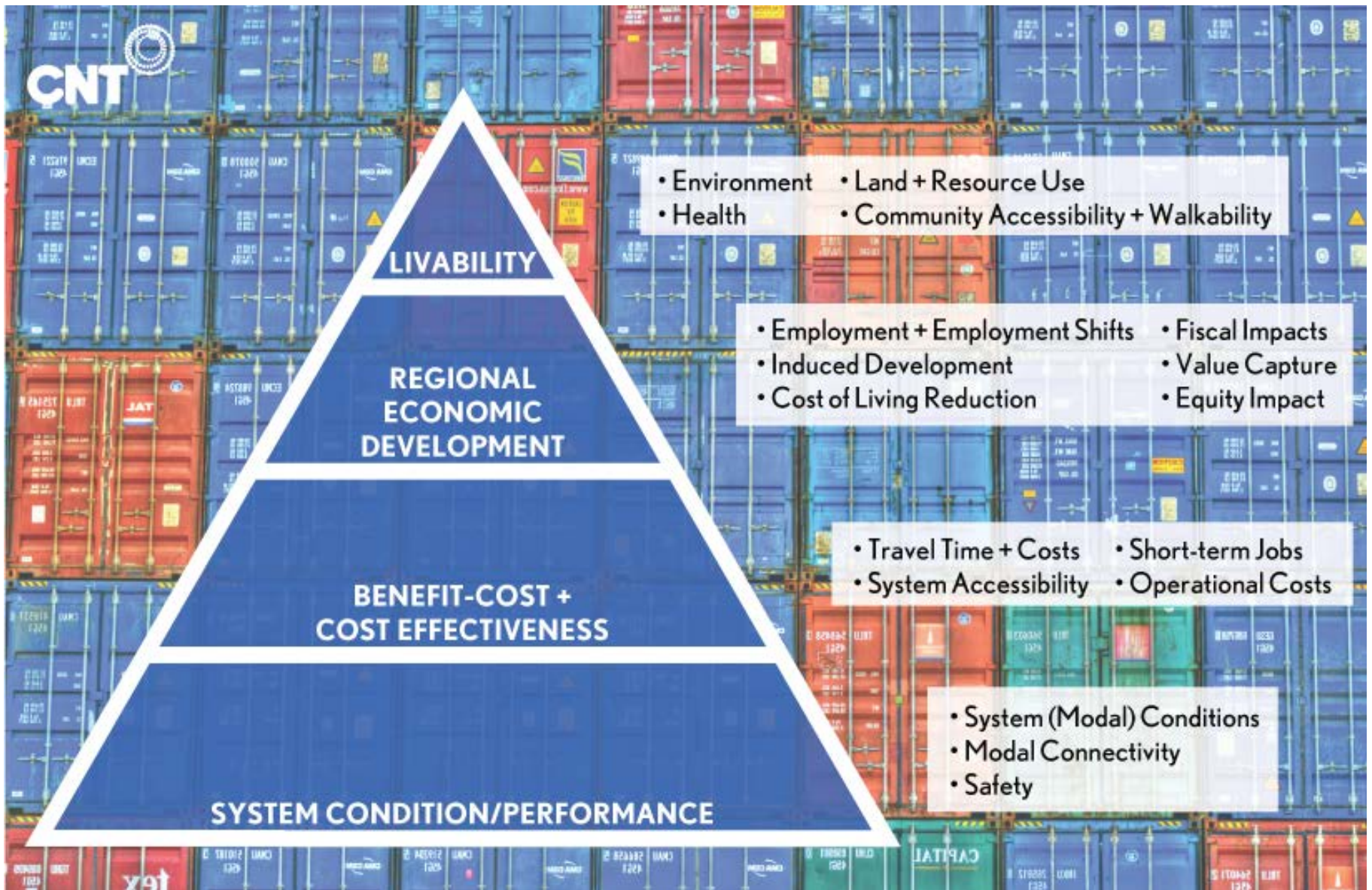
ABOUT CNT

- 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

COD Metrics Overview

A. Local Economic Development

Industrial Location Efficiency

Access for Manufacturers

Job Creation and Career Paths

Worker Transportation Access

Public Costs and Revenues

B. Freight System Efficiency

Truck and System Productivity

Travel Time and Reliability

Drayage and Terminal Operations

Right-Sized Shipping

C. Environmental Impact

Air Quality

Water Quality

Noise Level

Lighting

Regional Land Use

D. Safety (Affecting All Metrics)

LIBBY OGARD



Prime Focus LLC is a certified DBE/WBE firm established in 2001.

This firm specializes in freight transportation network solutions, economic development and project finance.

Libby Ogard holds an MBA from University of St. Thomas and brings 18 years Class 1 rail experience with the BNSF and Conrail; and launched Optimodal, a non-asset intermodal division of Schneider National, where as a General Manager she managed Target, Walgreens, The Home Depot, Family Dollar and others.

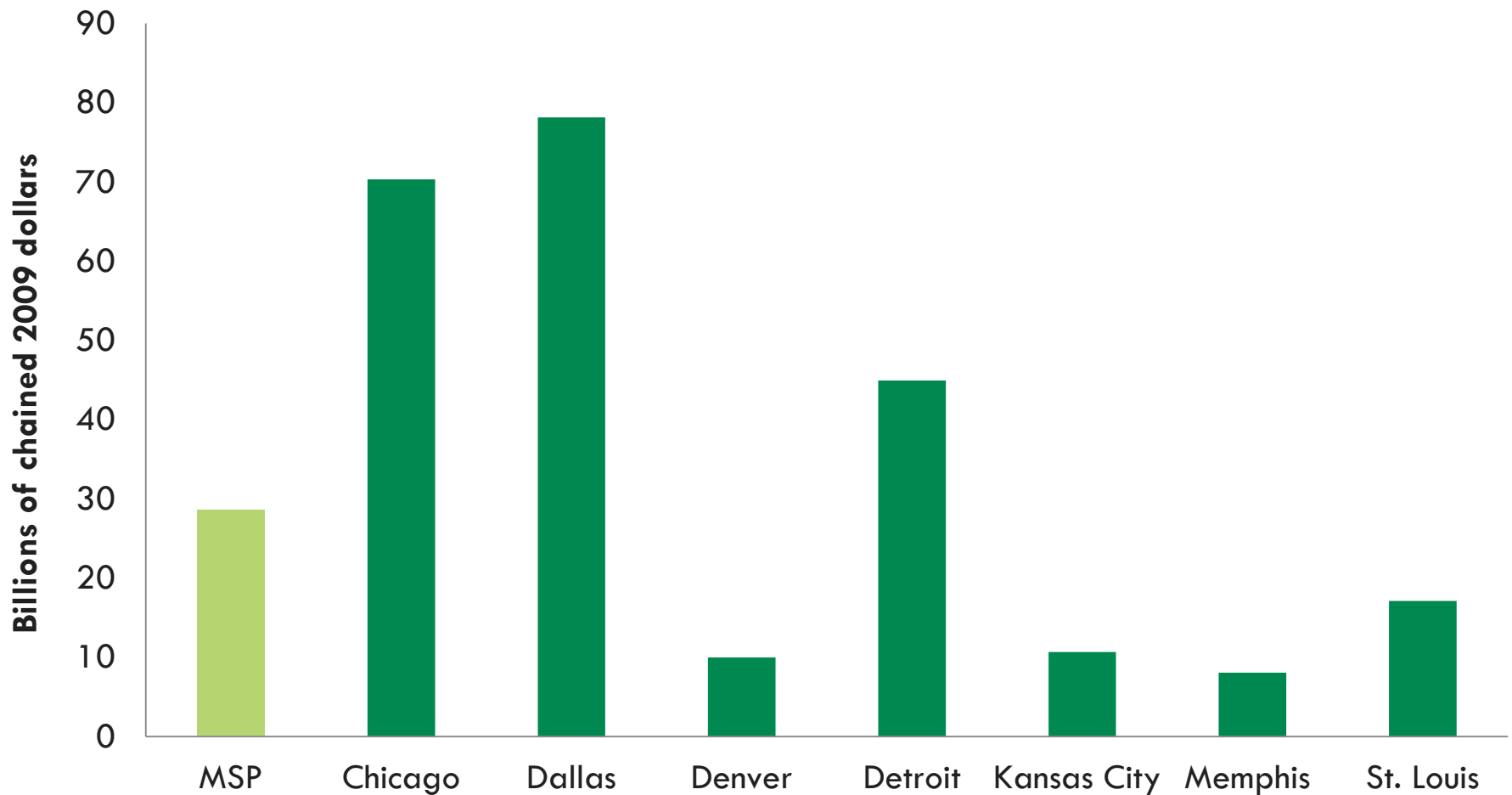
LIBBY OGARD



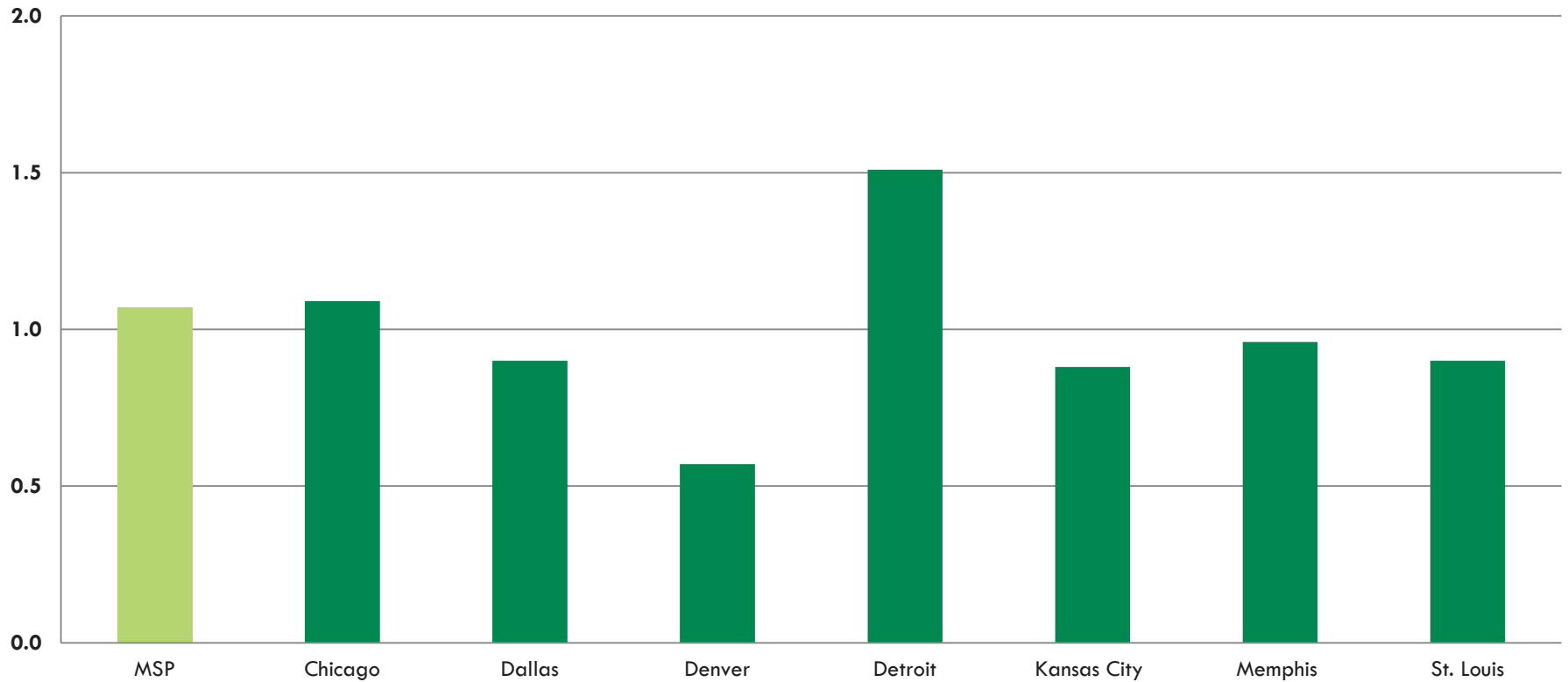
- 18 years – Class 1 Railroad
- 7 years – Schneider National General Manger
- 8 Transportation Research Board Studies
- Minnesota
 - Freight Rail Economic Development Study 2012
 - Freight Advisory Committee
 - Iowa State Rail Plan and Rail Shipper Toolkit
 - Wisconsin On-Call Freight Projects

PRESENTATION OVERVIEW

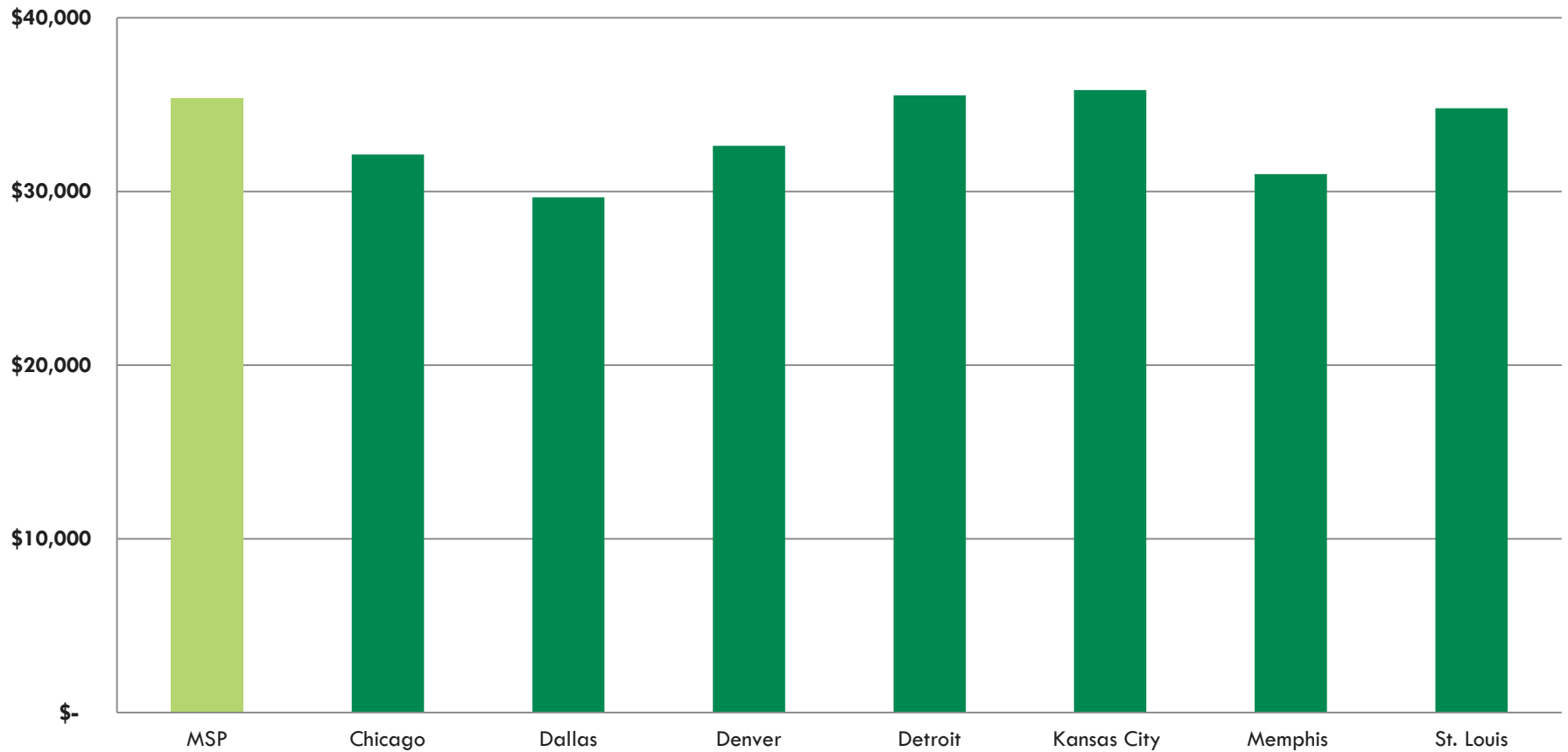
- **Manufacturing and Freight Transportation in MSP**
- **Geography of Industrial Development and Job Distribution**
- **Worker Accessibility**
- **Environmental Quality**
- **COD Workshop of July 2015**
- **Toward an MSP Action Plan for COD**



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.



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



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.

| 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.

Manufacturing Industry Change, 2003-2012

EXAMPLES OF TOP 20 SOC CODES

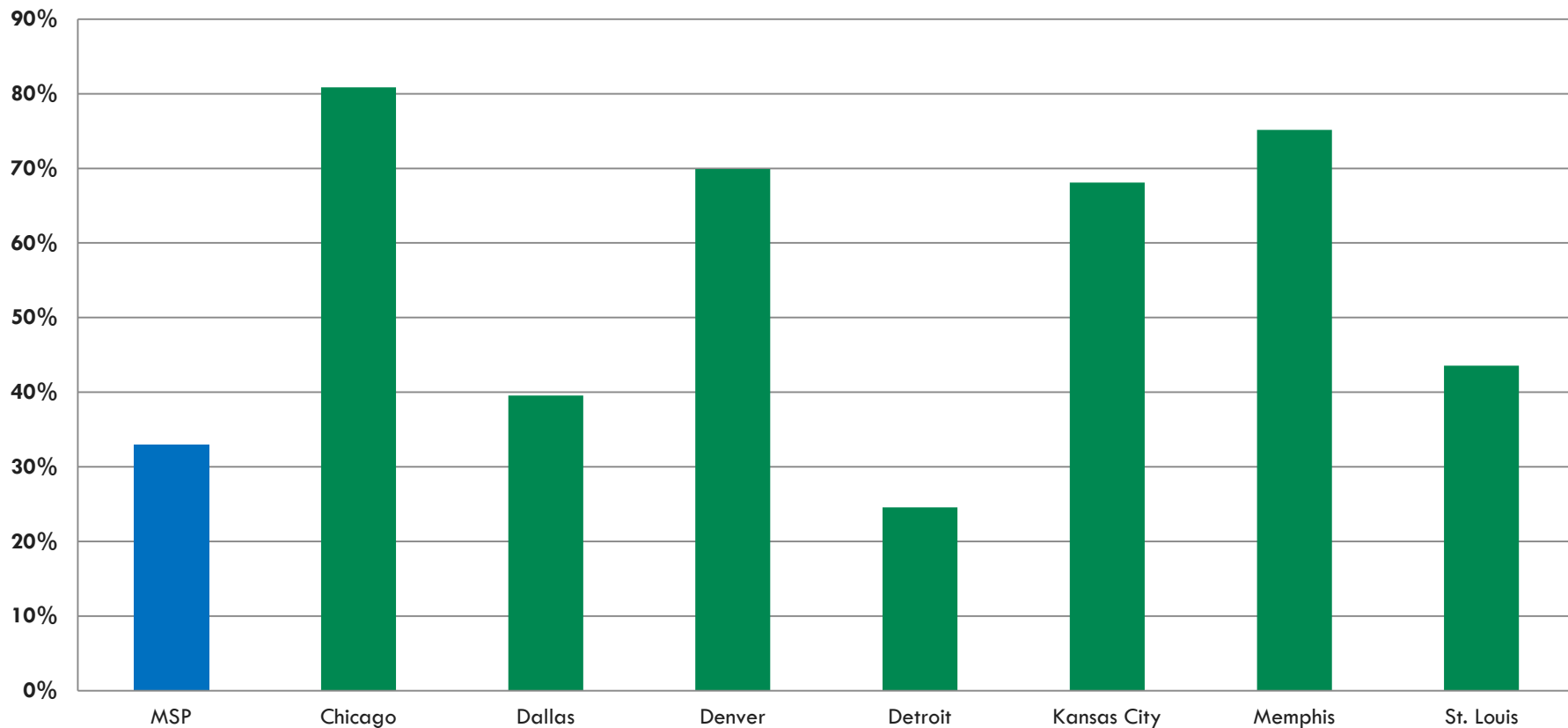
PRODUCTION

| 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 |

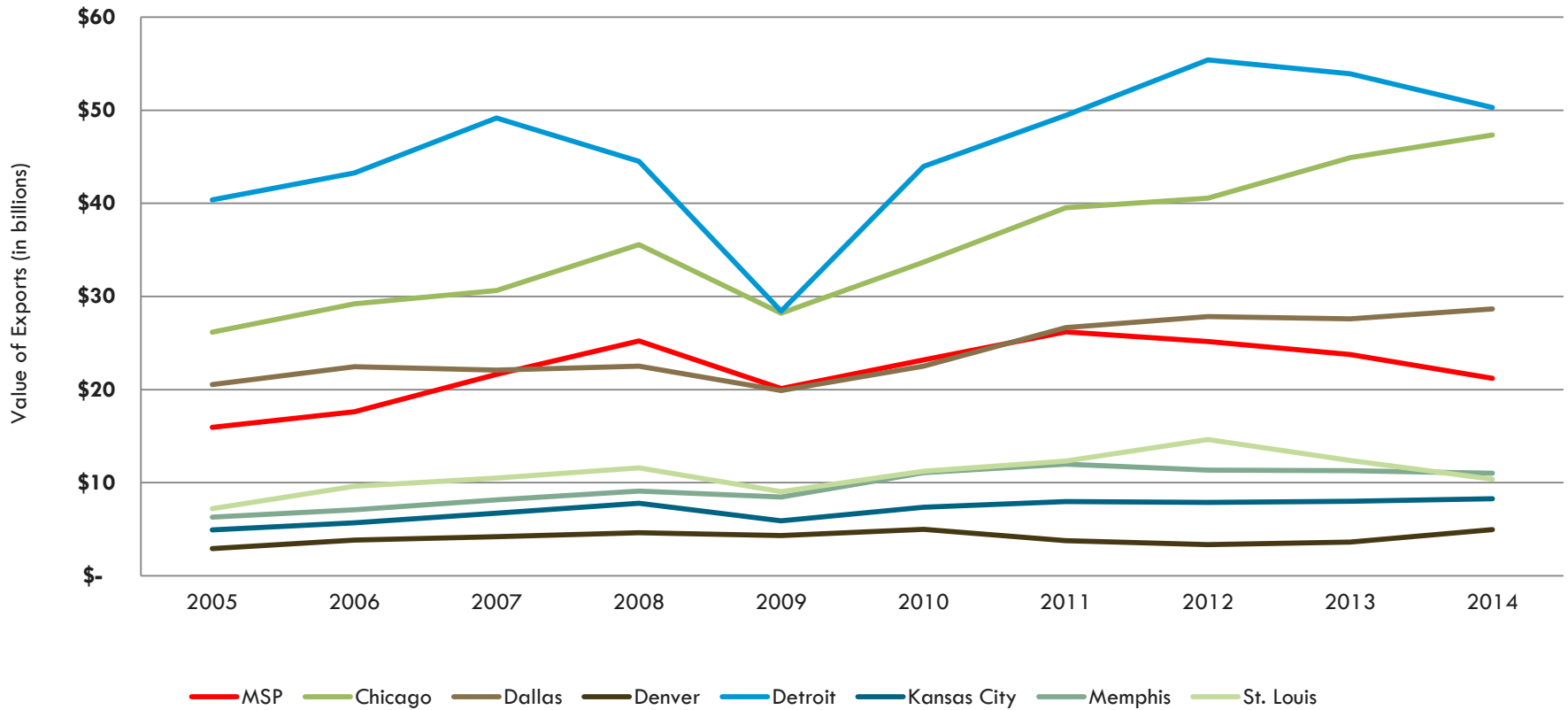
| MANUFACTURING | | | MINNEAPOLIS ST. PAUL REGION | | | | SHIFT SHARE (%) | |
|---------------|--|------|-----------------------------|---------|--------|----------|-----------------|-------------|
| SOC CODE | SOC TITLE | L.Q. | EMPLOYMENT | | CHANGE | % CHANGE | NATIONAL SHIFT | LOCAL SHIFT |
| | | | 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% |



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.



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)

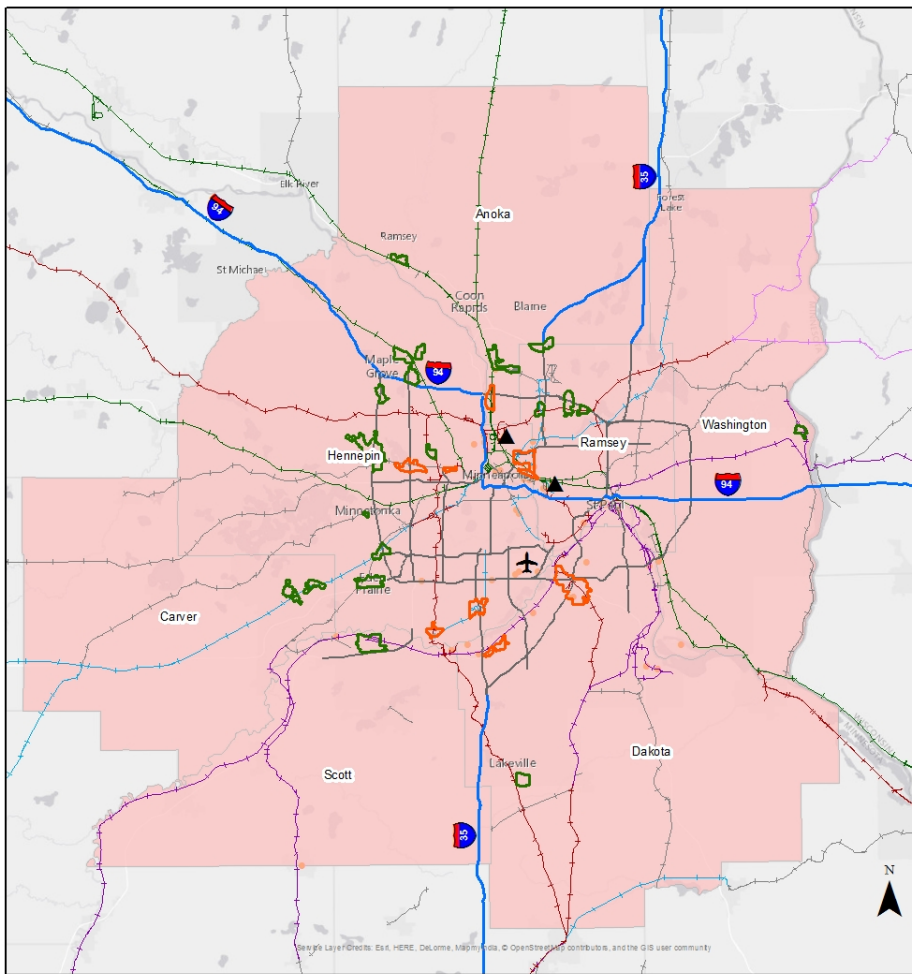
MSP Region Exports 2014

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

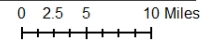


Legend

Raillines by Ownership

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

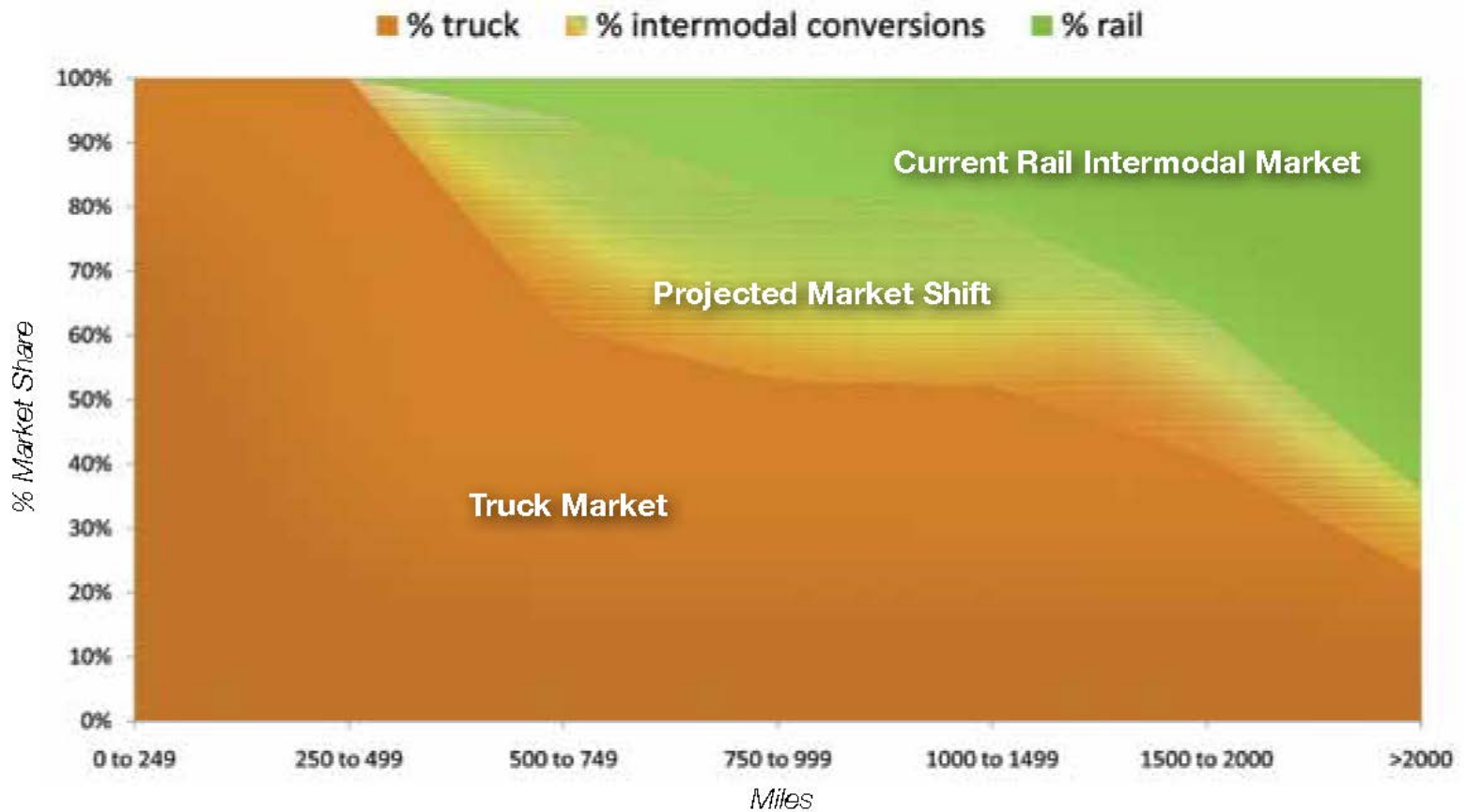
- Manufacturing Job And Activity Centers, 2016
- Industrial Job And Activity Centers, 2010
- Intermodal Terminals
- Airport
- Freight Transfer Facility
- USA Major Highways



Industrial Job Centers and Freight Assets

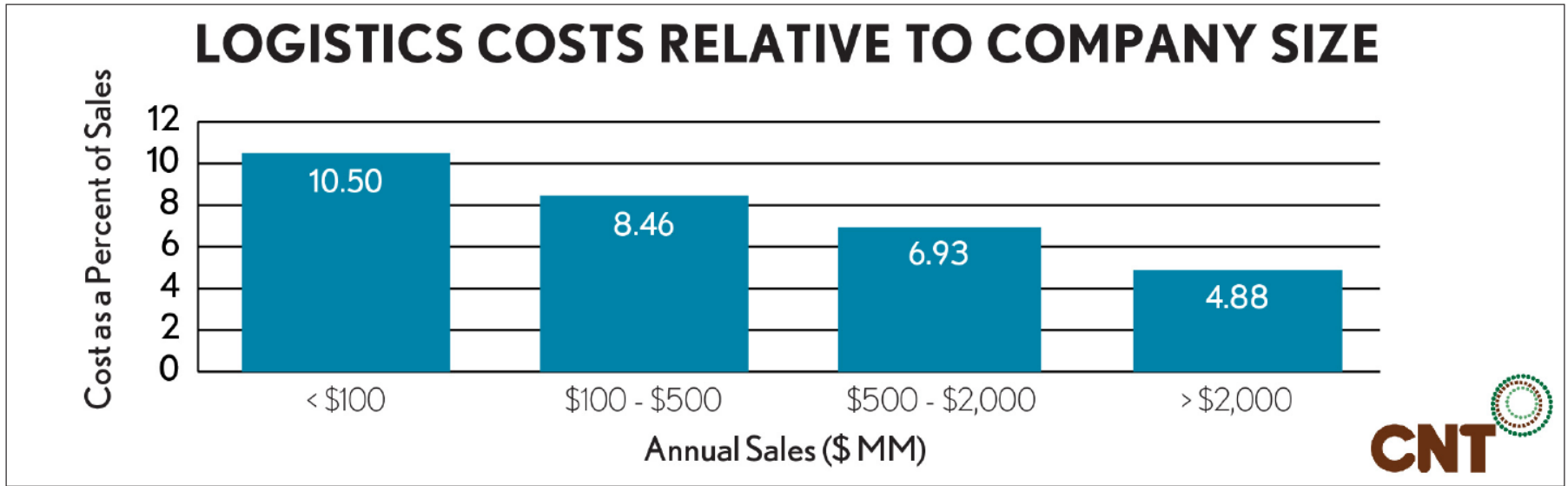
| Outbound Freight by Mode (2015 Estimate) | Total Weight in Tons (Thousands) | % Weight | Total Value (millions) | % Value |
|---|---|---------------------|-----------------------------------|----------------|
| MSP TOTAL | 154,390 | | \$218,378 | |
| Air (include truck-air) | 97 | 0.1% | \$9,791 | 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



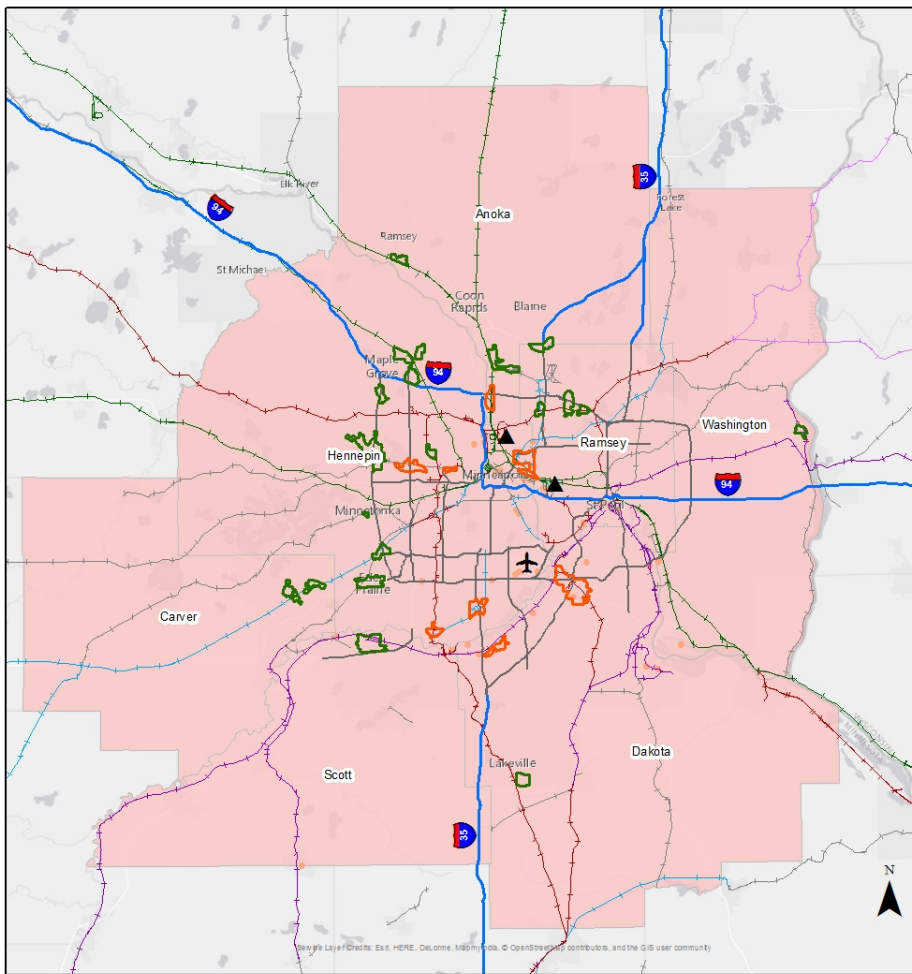
Source: *National Rail Plan: Moving Forward*. Federal Railroad Administration, September 2000

Truck and Intermodal Rail Marketshare

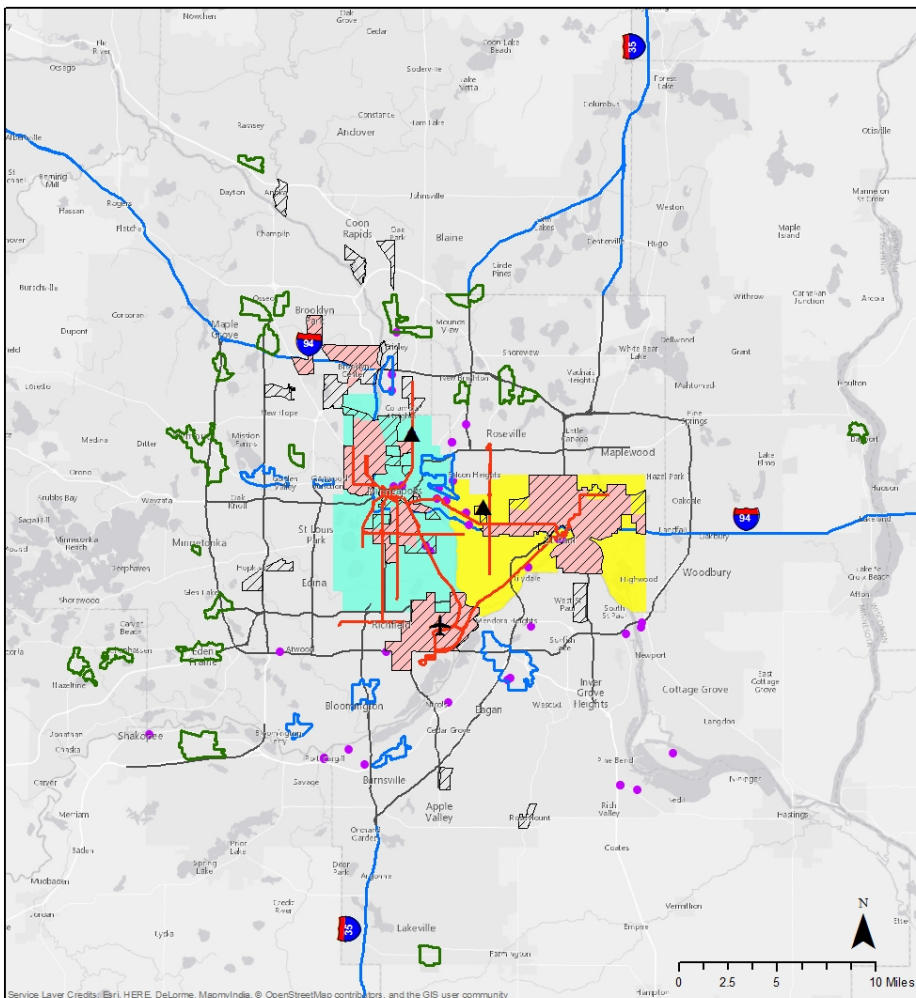


Source: Adapted from Establish Davis Logistics, Report to the Council of Supply Chain Management Professional (CSCMP) re the Council's annual report "State of Logistics 2013."

Logistics Costs Relative to Company Size



Industrial Job Centers and Freight Assets



Legend

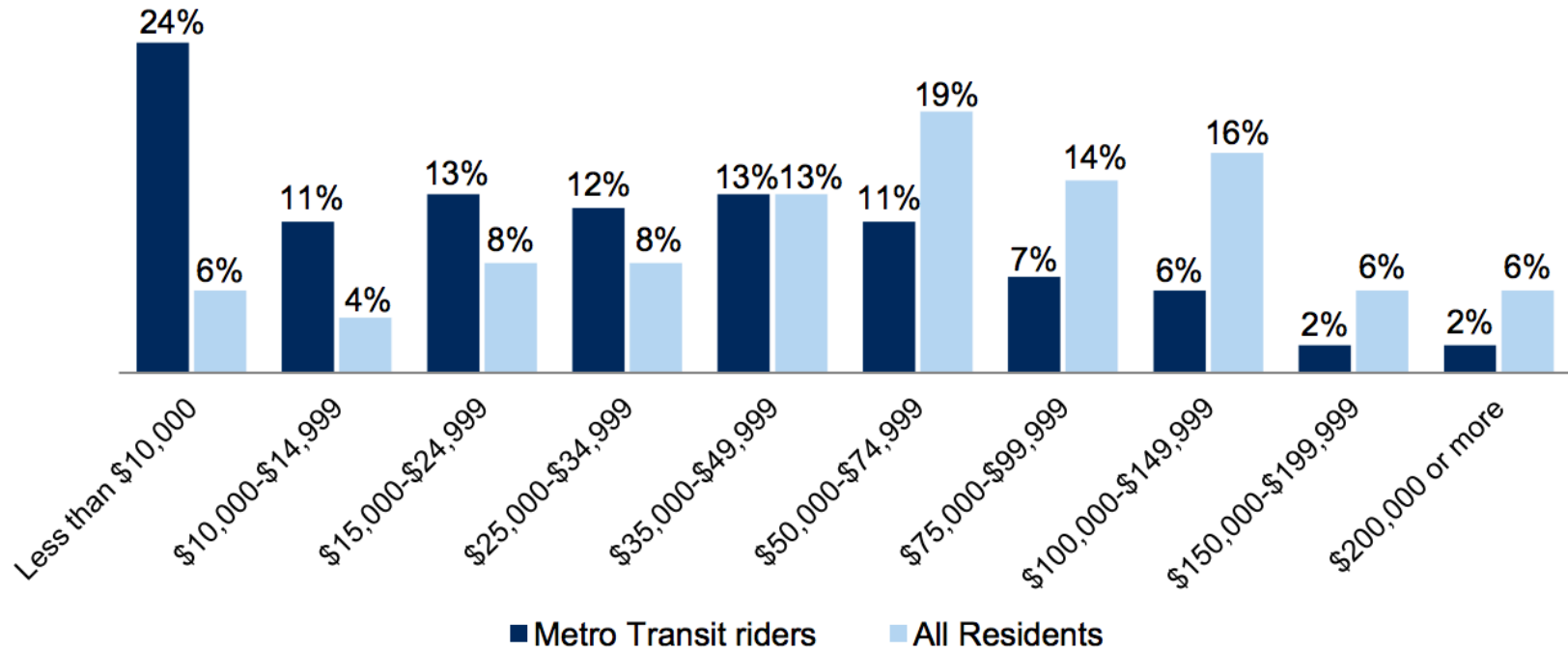
- Manufacturing Job And Activity Centers, 2016
- Industrial Job And Activity Centers, 2010
- Areas Of Concentrated Poverty, ACS 2014
- Areas Of Concentrated Poverty - 50% minority
- High Frequency Transit Network
- Minneapolis
- Saint Paul
- Intermodal Terminals
- Airport
- Freight Transfer Facility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

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



Areas of Concentrated Poverty and Industrial Employment Centers

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

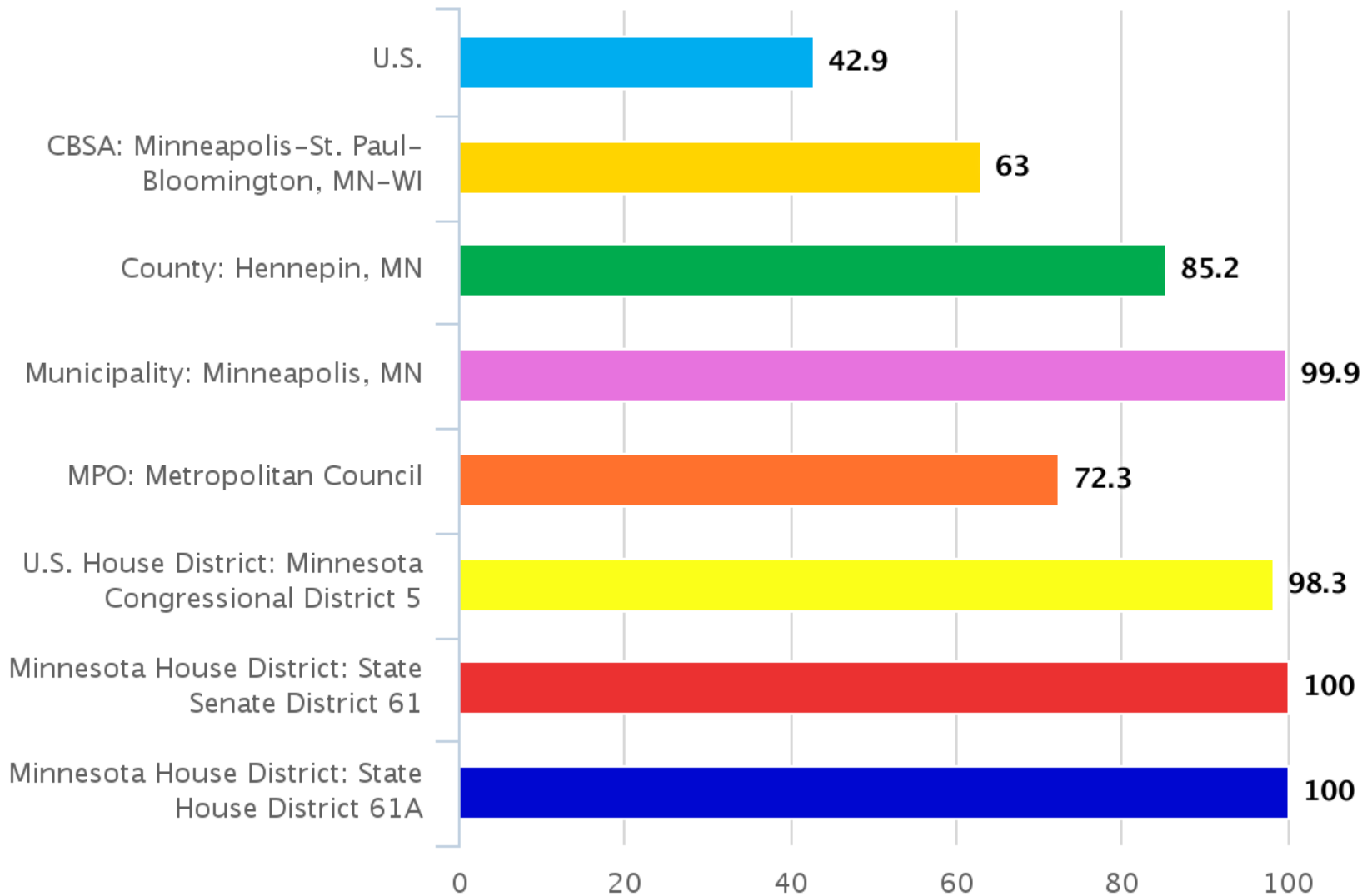


Source: Metropolitan Council, [Choice, Place and Opportunity](#)

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

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



Percentage of Manufacturing Jobs Near Transit

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

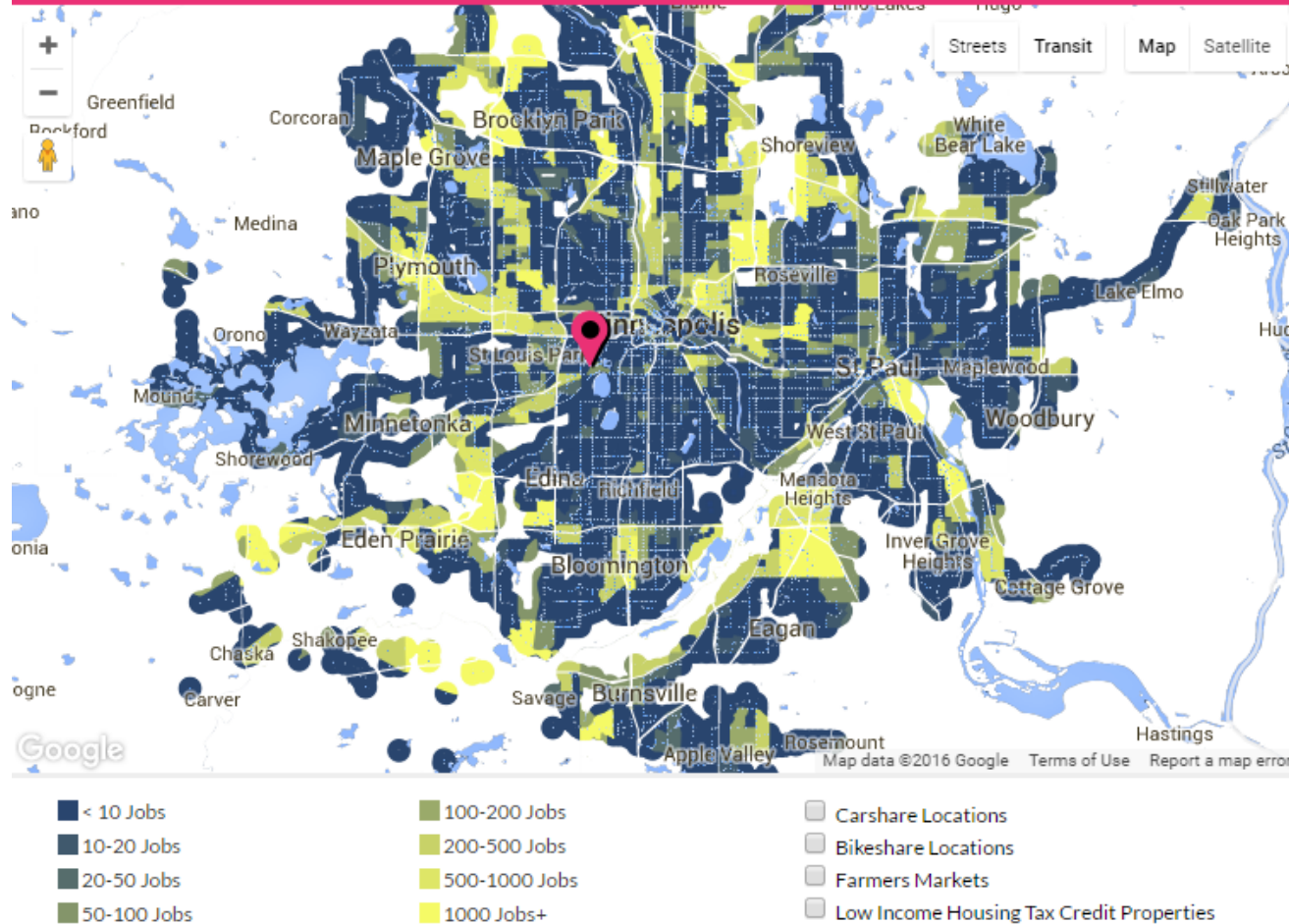
| | |
|--------------------------|---------------|
| Hennepin | 60,000 |
| Ramsey | 22,000 |
| Anoka | 18,000 |
| Other 11 Counties | 20,000 |

119,953 Jobs

CBSA: Minneapolis-St. Paul-Bloomington, MN-WI

Number of jobs within a half mile of transit in Manufacturing Sector.

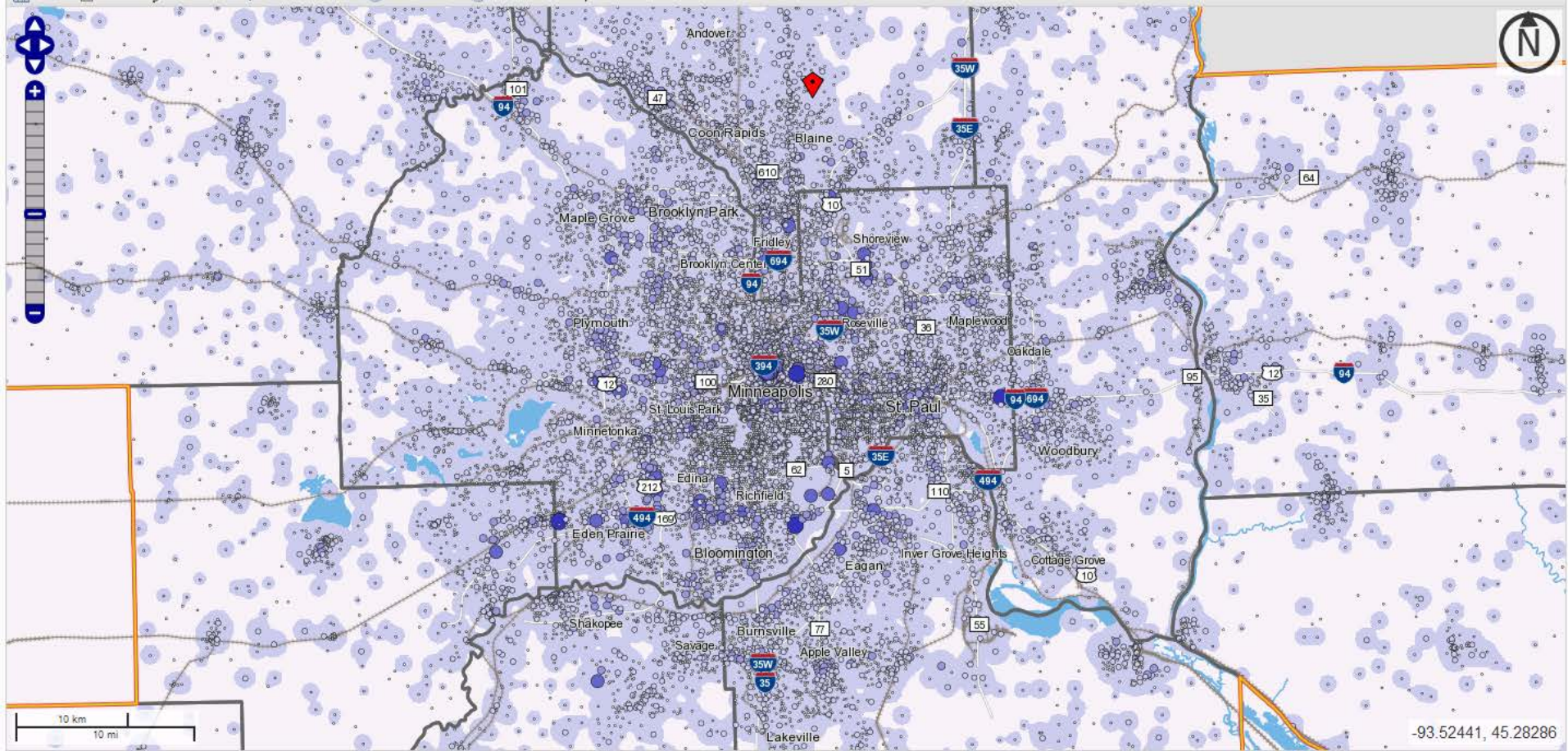
63.0% of these Jobs in the CBSA



Number of Jobs within a Half Mile of Transit
in Manufacturing Sector

OVER 30 CLUSTERS OF 2,500- 20,000 MANUFACTURING JOBS

All but a few in Hennepin and Ramsey Counties



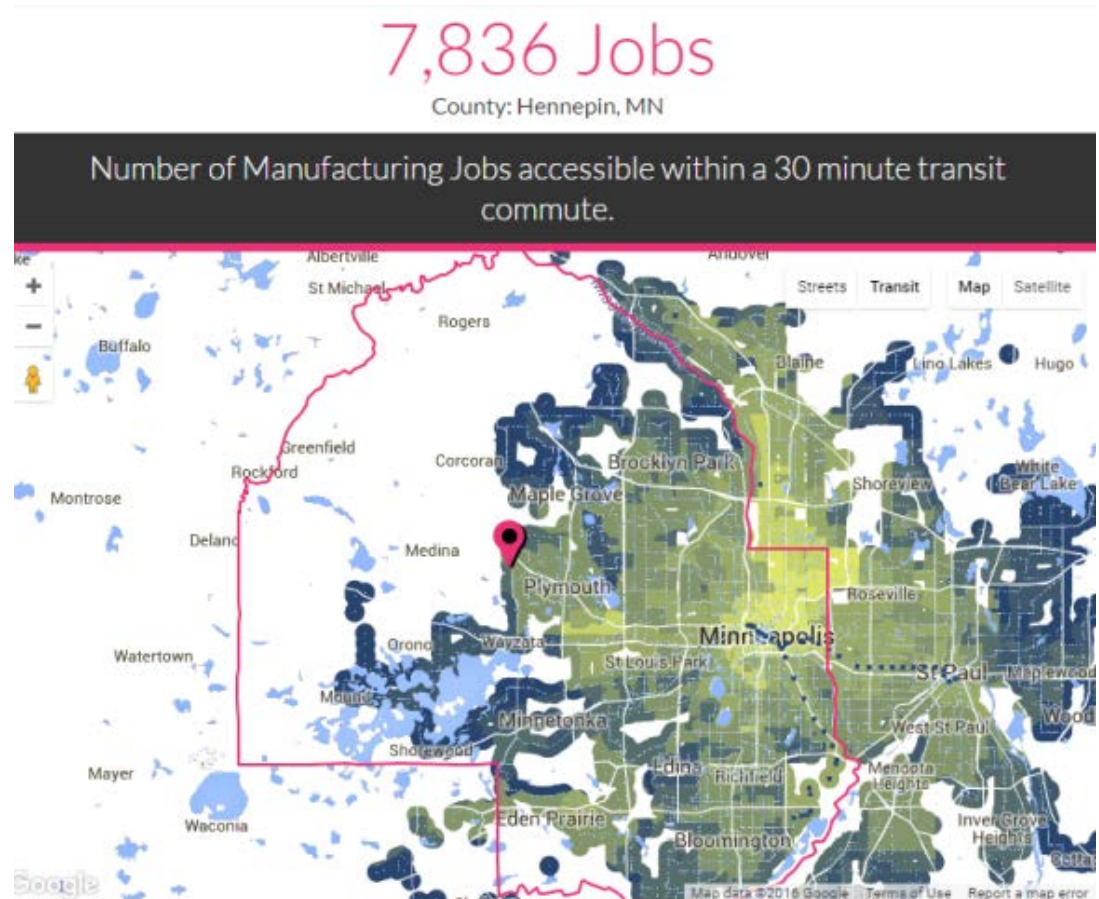
- 1 - 31 Jobs
- 32 - 489 Jobs
- 490 - 2,475 Jobs
- 2,476 - 7,823 Jobs
- 7,824 - 19,098 Jobs
- 5 - 7,942 Jobs/Sq.Mile
- 7,943 - 31,756 Jobs/Sq.Mile
- 31,757 - 71,446 Jobs/Sq.Mile
- 71,447 - 127,012 Jobs/Sq.Mile
- 127,013 - 198,454 Jobs/Sq.Mile

Number of Jobs within a Half Mile of Transit in Manufacturing Sector

TRANSIT PROXIMITY VS. TRANSIT ACCESSIBILITY

Hennepin County
has 60,000 mfg.
jobs within 1/2 mile

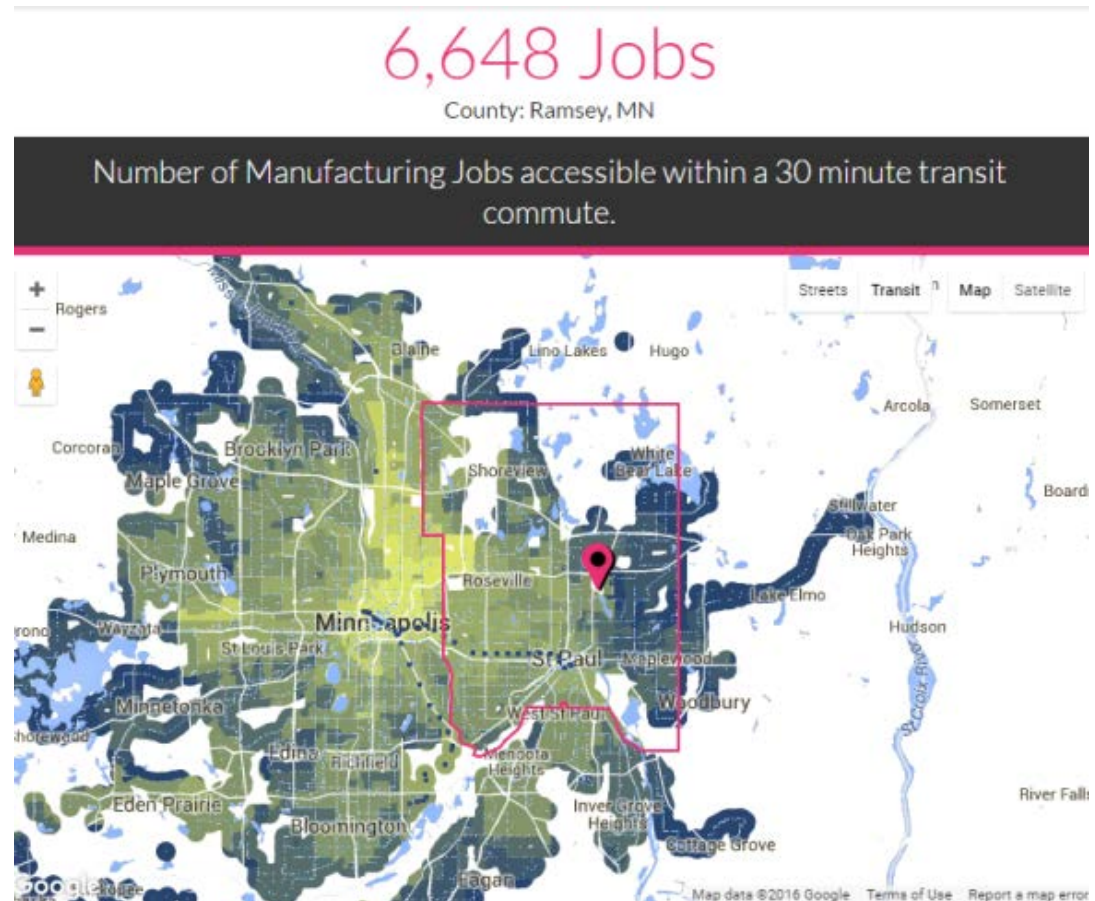
But only **7,800** are
accessible by a 30
minute transit ride
(13%)



TRANSIT PROXIMITY VS. TRANSIT ACCESSIBILITY

Ramsey County has
22,000 mfg. jobs
within 1/2 mile

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



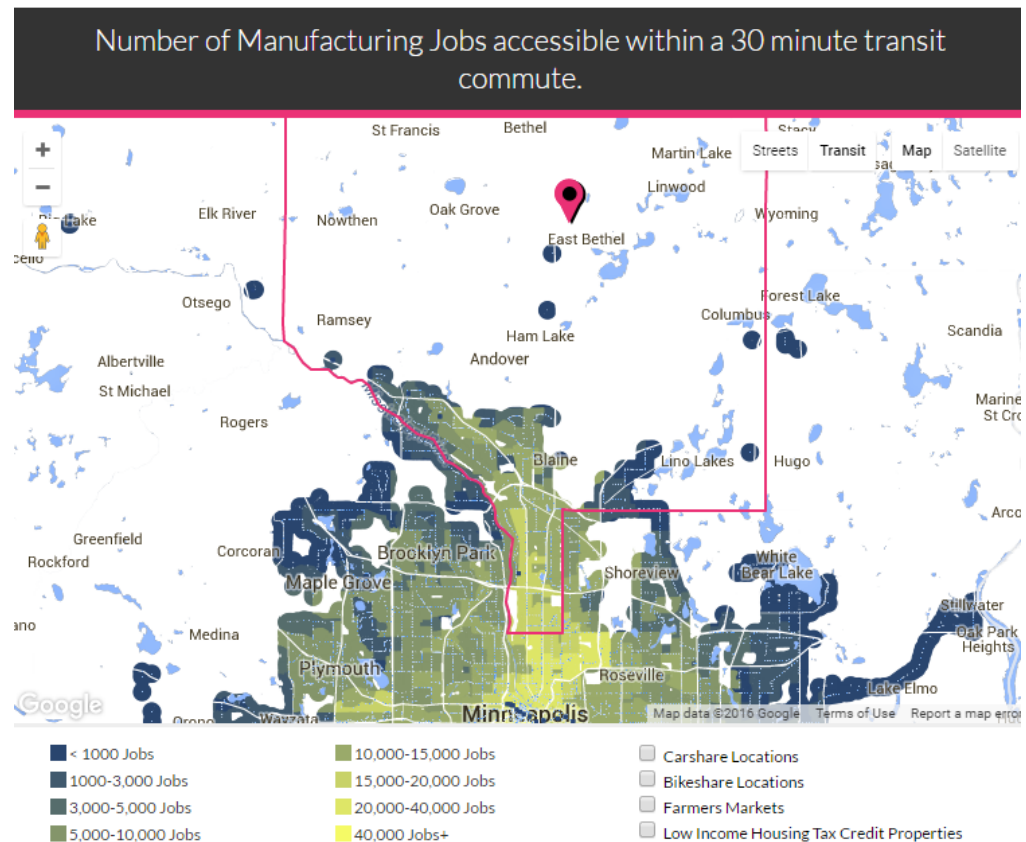
TRANSIT PROXIMITY VS. TRANSIT ACCESSIBILITY

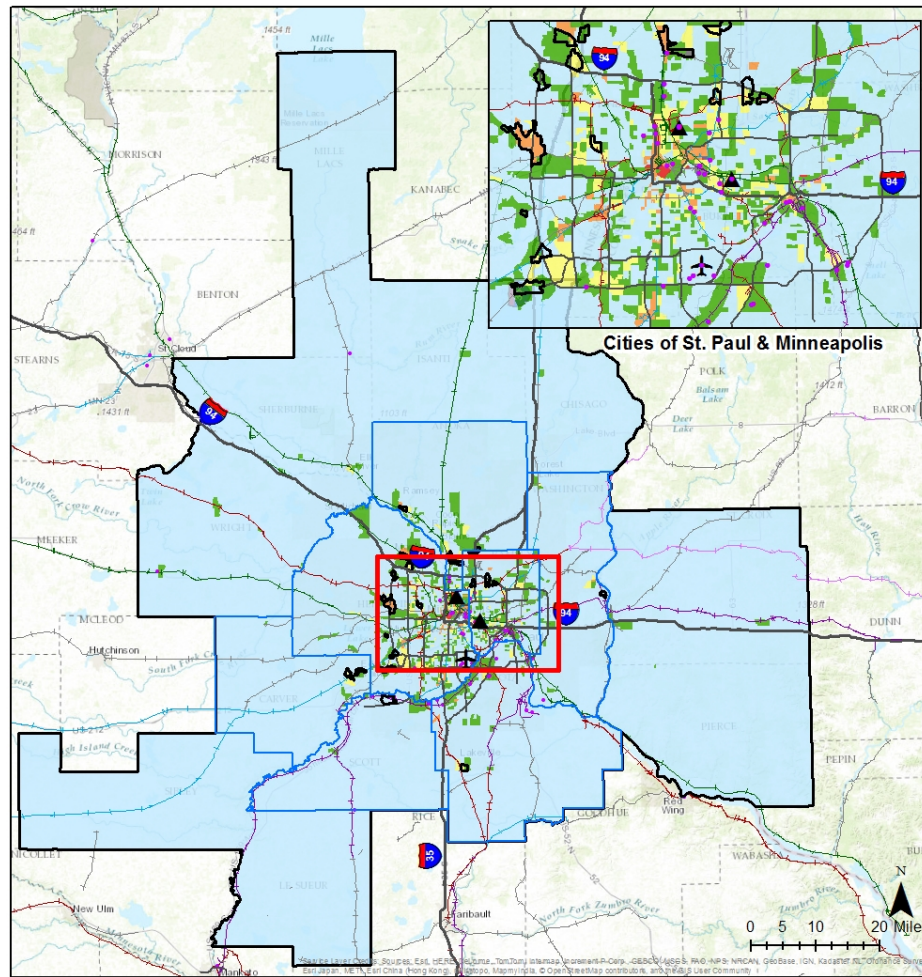
Anoka County has 18,000 mfg. jobs within 1/2 mile

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

4,775 Jobs

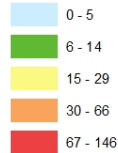
County: Anoka, MN



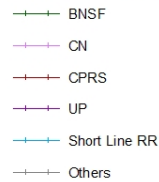


Legend

Manufacturing businesses per square mile



Raillines by Ownership



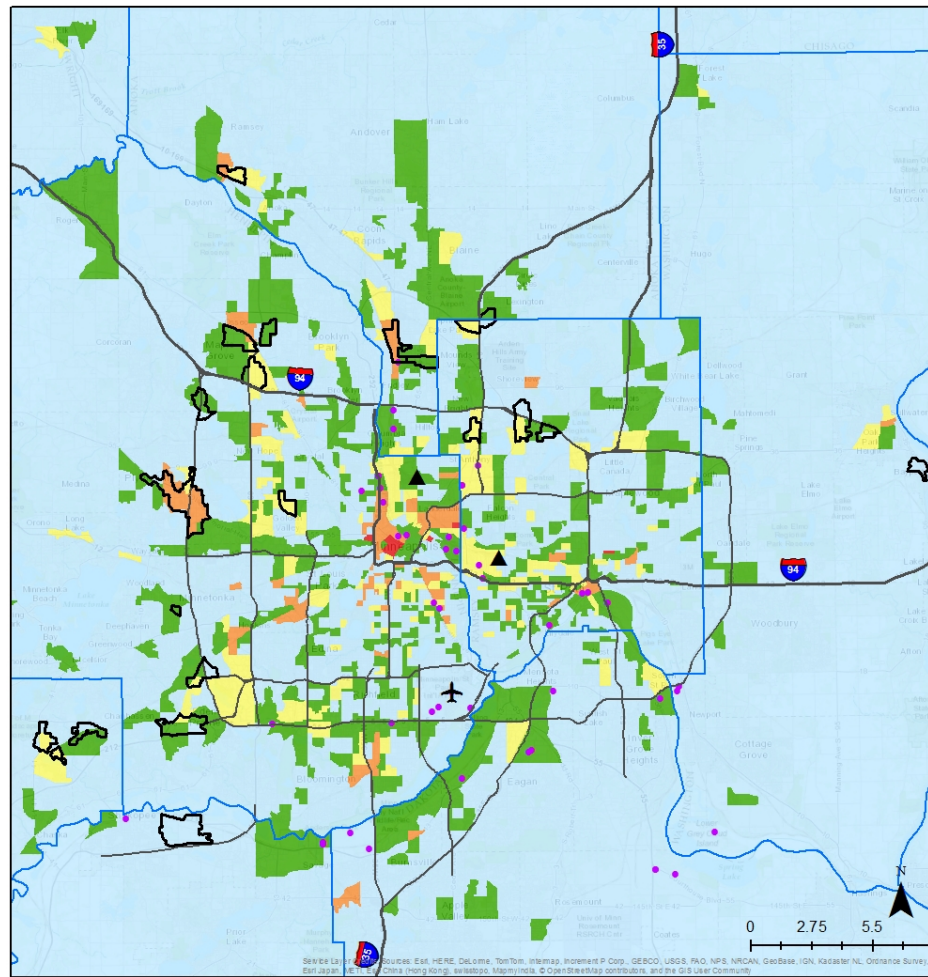
Manufacturing Job Centers



USA Major Highways

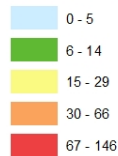


Manufacturing Businesses per Square Mile



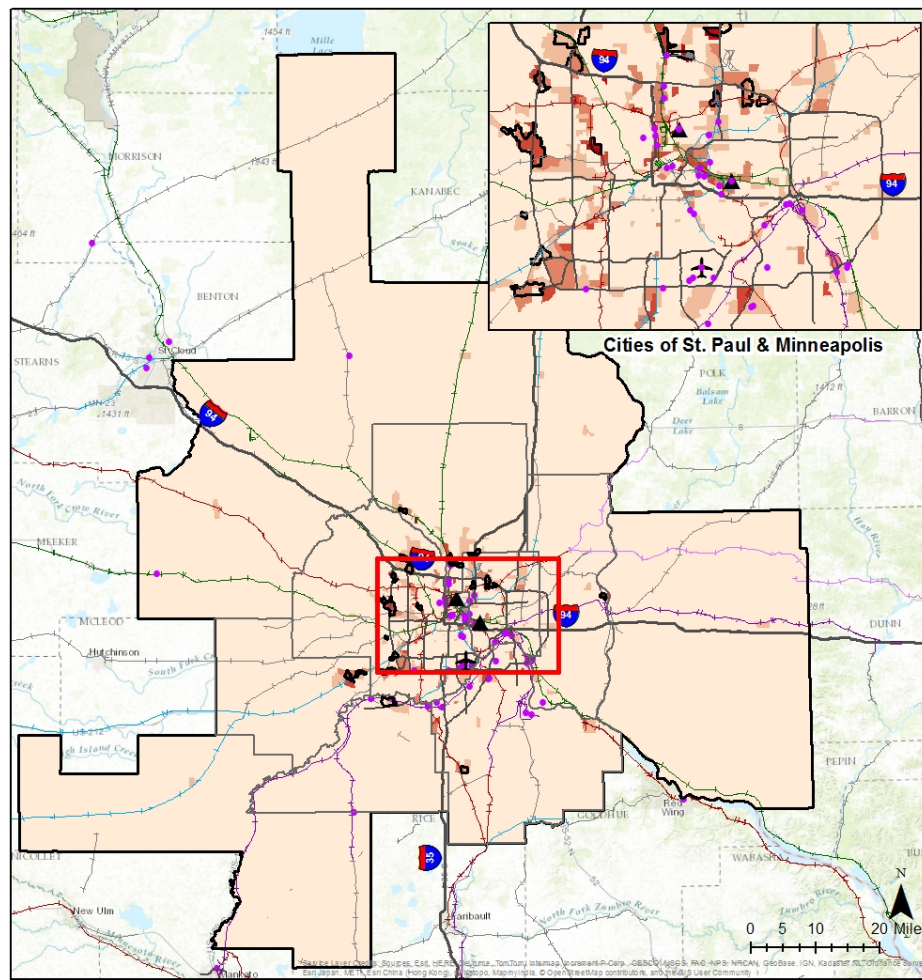
Legend

Manufacturing businesses per square mile

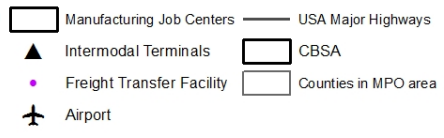
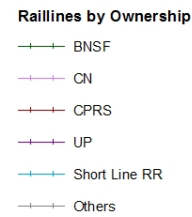
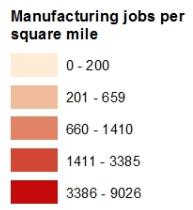


- Manufacturing Job Centers
- Intermodal Terminals
- Freight Transfer Facility
- Airport
- USA Major Highways
- CBSA
- Counties in MPO area

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

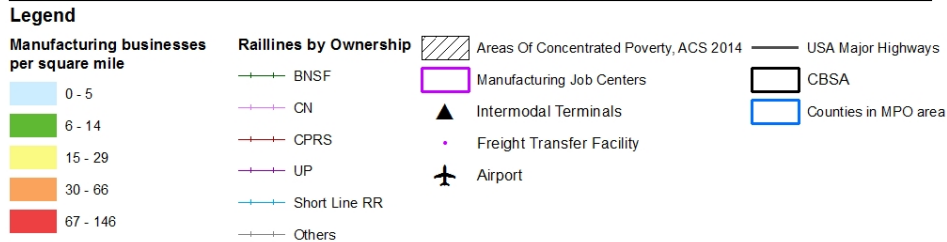
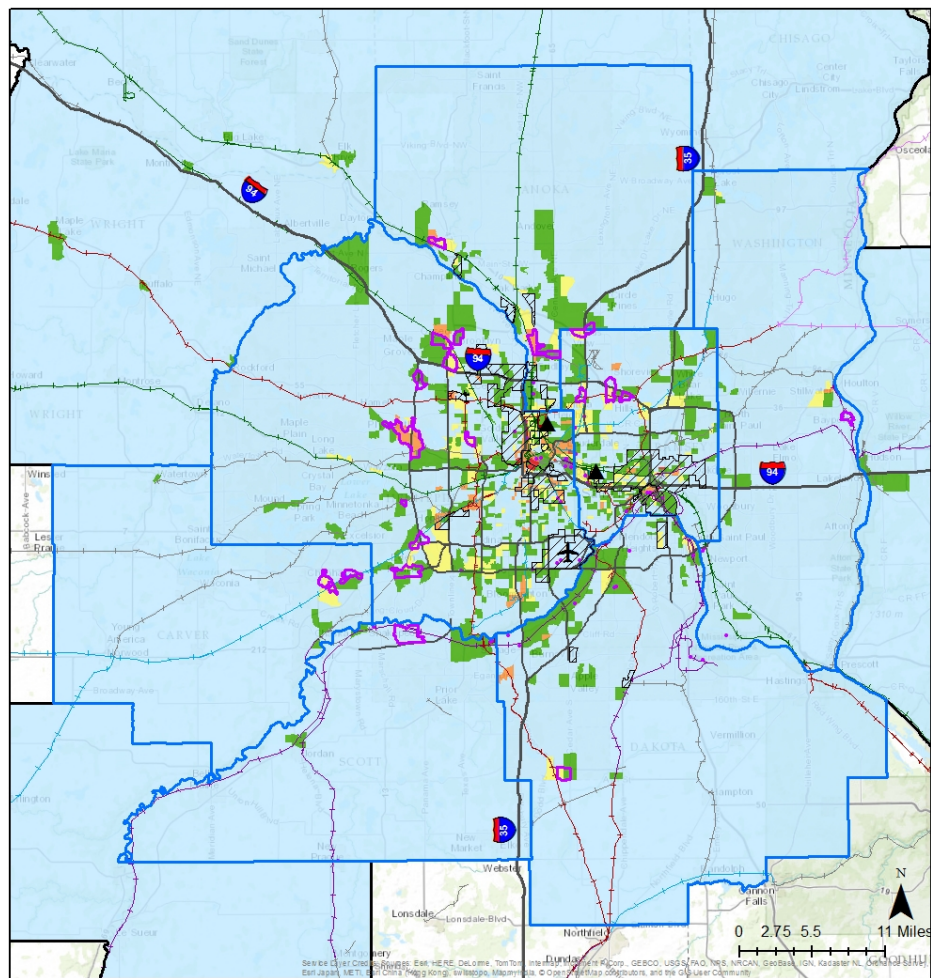


Legend



Manufacturing Jobs per Square Mile



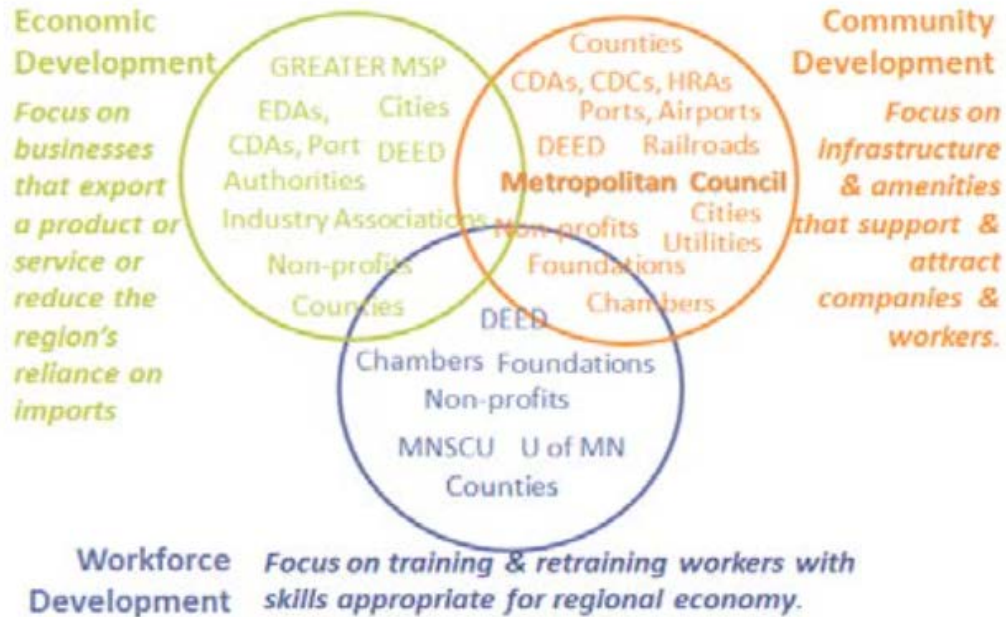


Manufacturing Businesses and Areas of Concentrated Poverty

| | 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

Economic Competitiveness Partners – (partial listing)



Economic Development Services, Inc.

Economic Vitality Process © 2004
 Economic Development Services, Inc.

Source: Metropolitan Council

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

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



Source: Mi-Jack

Current & Emerging Technologies and Designs Can Dramatically Reduce Pollution from Freight Movements



Source: Mi-Jack

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

WORKSHOP AGENDA

Creating a Blueprint for Cargo-Oriented Development in the Minneapolis – St. Paul Region Regional Leaders Workshop

Offices of the McKnight Foundation

AGENDA

- | | |
|-------|--|
| 8:30 | Preliminary Findings from COD Research |
| 9:30 | Logistics Service Patterns, Freight Service Provider & Shipper Interface |
| 10:30 | Freight-Linked Development, Land Use & Logistics |
| 11:30 | Industrial Worker Accessibility and Workforce Development |
| 12:30 | Innovations in Sustainable Logistics |
| 1:00 | Next Steps for COD in MSP |

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

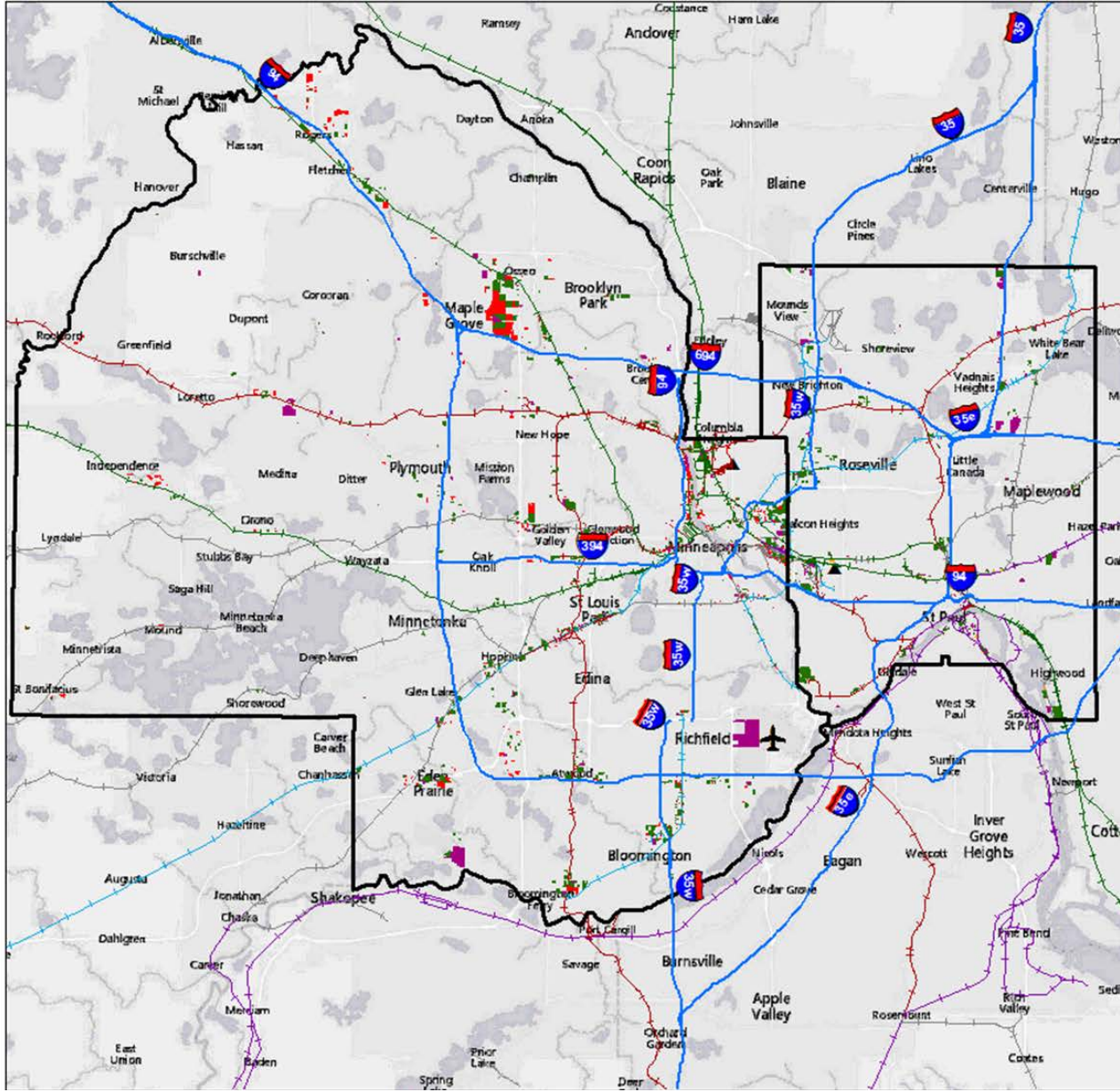


Freight Carrier's Perspective

- 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

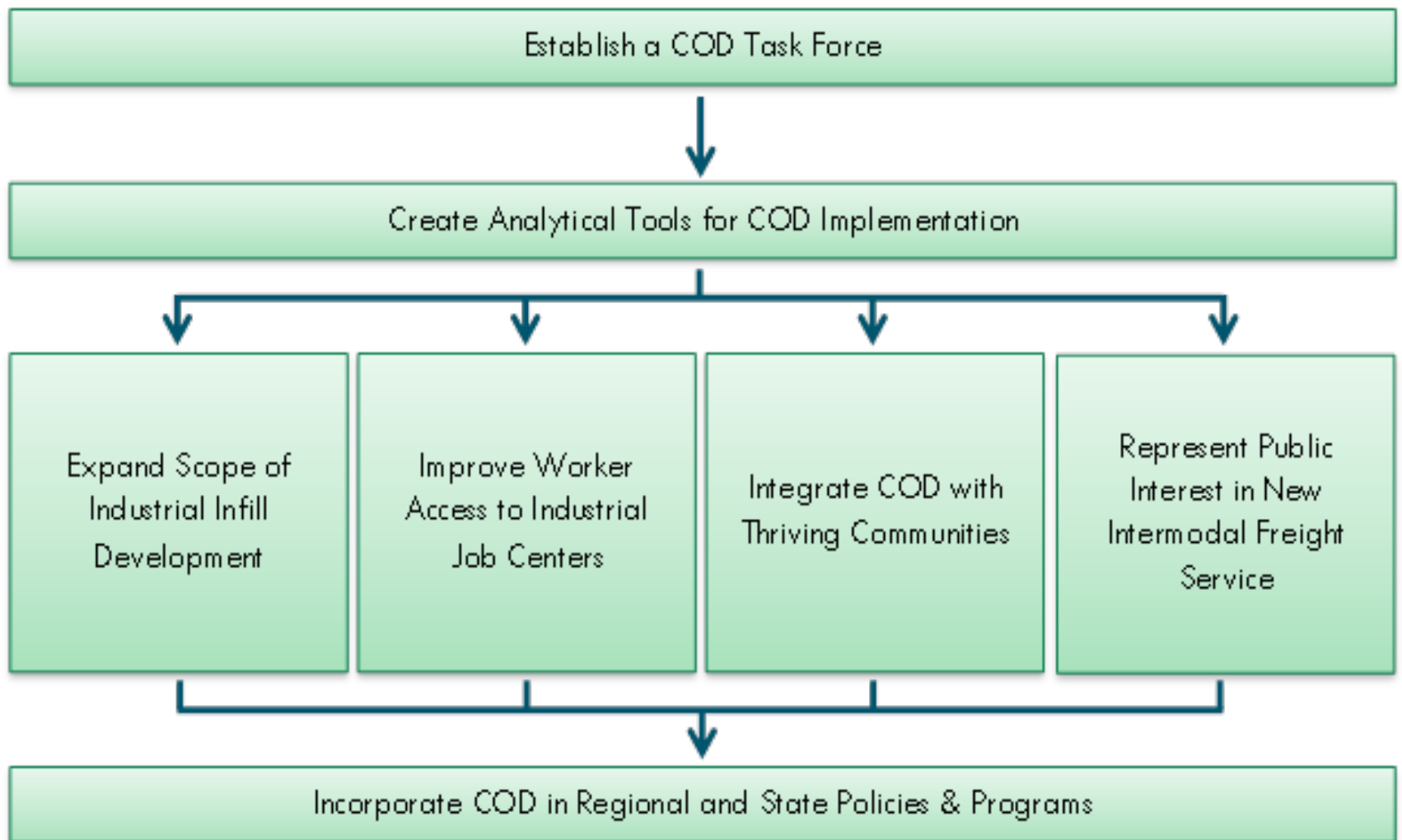


Legend

- Hennepin County Vacant Industrial Parcels
 - Industrial Parcels - Zero Building Value
 - Underutilized-Parcels (land value > building value)
 - Vacant Industrial (source Port Authority)
 - Intermodal Terminals
 - Airport
- N
- 0 2 4 8 Miles

Map of Potential COD Sites in MSP

| | 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 |



Tentative Action Plan for COD in MSP



THANK YOU

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