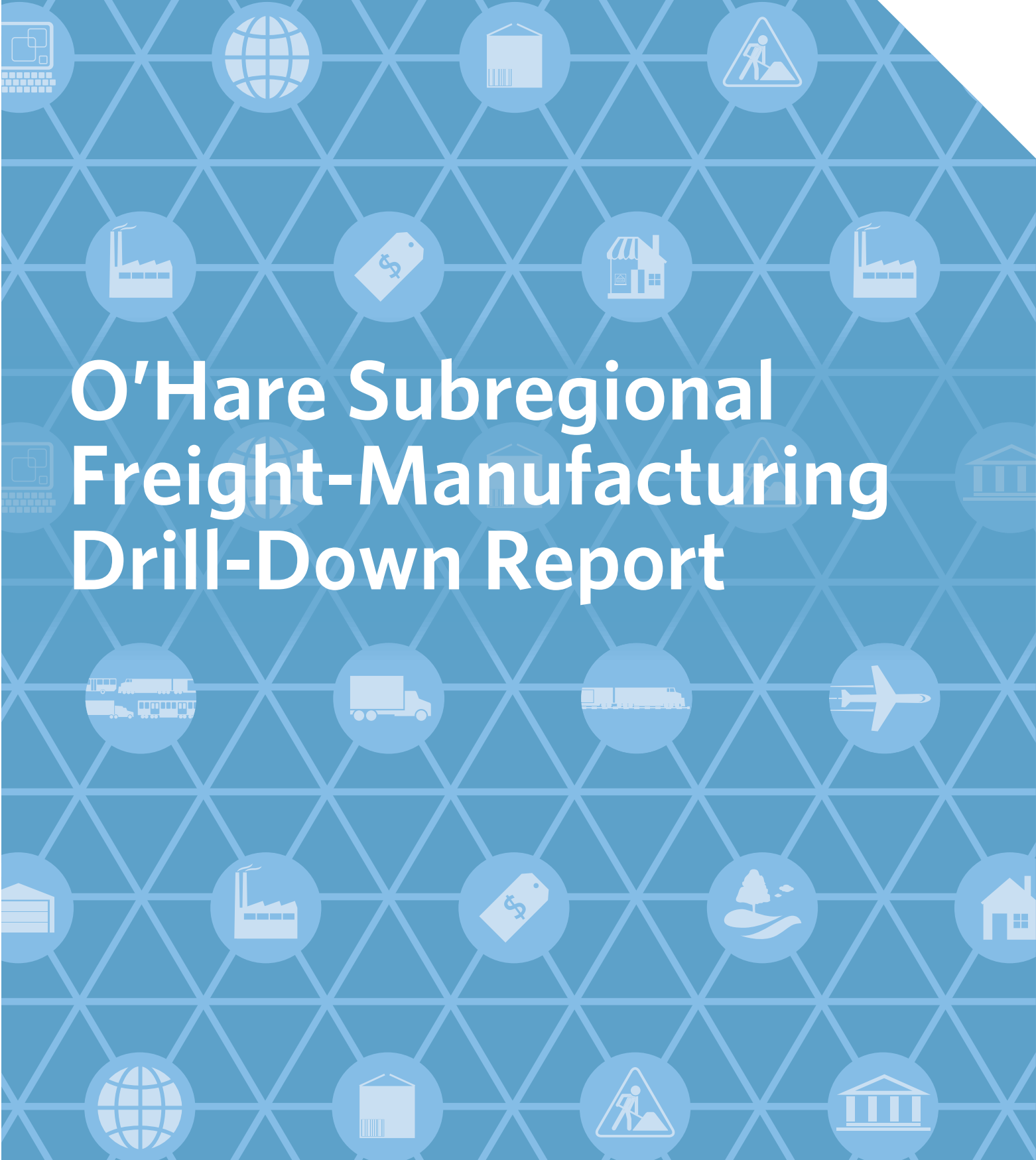




# O'Hare Subregional Freight-Manufacturing Drill-Down Report





# Table of Contents

<b>Executive Summary</b> .....	<b>1</b>
<b>Introduction</b> .....	<b>4</b>
<b>Background and Context</b> .....	<b>4</b>
Freight and Manufacturing in the CMAP Region .....	4
The O'Hare cluster .....	8
<b>Freight and Manufacturing Trends in the O'Hare Subregion</b> .....	<b>12</b>
Major employment sectors and trends.....	12
Manufacturing cluster employment trends .....	15
Freight cluster employment trends .....	17
The freight and manufacturing workforce .....	18
The freight-manufacturing nexus in the O'Hare subregion .....	23
<b>Infrastructure in the Freight and Manufacturing Context</b> .....	<b>26</b>
The transportation network.....	26
Infrastructure support for the freight and manufacturing cluster.....	31
<b>Land Use and the Freight and Manufacturing Cluster</b> .....	<b>37</b>
Industrial development in the study area .....	38
Property taxes and property classification.....	41
Market values and redevelopment.....	44
Local planning initiatives.....	46
Redevelopment planning to support the freight and manufacturing cluster .....	47
<b>Moving the O'Hare Freight and Manufacturing Cluster Forward</b> .....	<b>48</b>
Workforce training.....	48
Plan for truck routing and infrastructure improvements across jurisdictions.....	49
Opportunity for coordinated stormwater planning.....	50
Multijurisdictional redevelopment plan.....	51
<b>Conclusion</b> .....	<b>52</b>

# Figures

- Figure 1. What is a cluster? ..... 5
- Figure 2. Core manufacturing worker productivity and employment change in the Chicago region, 2001-12..... 6
- Figure 3. The freight-manufacturing nexus ..... 7
- Figure 4. Study Area ..... 10
- Figure 5. Freight and manufacturing specialization by ZIP code ..... 11
- Figure 6. CMAP region and O'Hare study area employment concentration in the freight and manufacturing cluster, 2013 ..... 12
- Figure 7. Employment change in the O'Hare study area and the CMAP region, 2004-13 ..... 13
- Figure 8. Components of the regional manufacturing cluster ..... 14
- Figure 9. Study area core manufacturing sectors change in employment and location quotients, 2003-13 ..... 16
- Figure 10. Current status and anticipated change for O'Hare area freight/manufacturing occupations ..... 19
- Figure 11. Location and distance of the study area worker homes ..... 22
- Figure 12. Study area and regional location quotients for nexus industries ..... 24
- Figure 13. The freight-manufacturing nexus in the O'Hare subregion..... 25
- Figure 14. Existing, planned and underway major transportation facilities in the O'Hare Subregion ..... 27
- Figure 15. O'Hare subregion local truck routes and restrictions..... 36
- Figure 16. Land use in the O'Hare area..... 37
- Figure 17. Distribution of industrial/flex rentable building area in the study area and CMAP region ..... 38
- Figure 18. Study area and CMAP region industrial vacancy rates, 2000-13..... 40
- Figure 19. CMAP region effective property tax rates, 2009 ..... 42
- Figure 20. Prevalence of commercial and industrial property tax incentive classes in Cook County municipalities ..... 43
- Figure 21. Industrial and commercial property market values in the study area ..... 45

# Executive Summary

The Chicago region is home to a diversified economy that produced \$571 billion in goods in and services in 2012, making it the third largest metropolitan economy in the U.S. The region's freight and manufacturing clusters are core components of that economy, accounting for roughly 15 percent of total employment. These two sectors have helped the region grow from an isolated outpost to a bustling center of 21<sup>st</sup>-century global commerce and remain central to the success of the region's economy.

Freight and manufacturing enjoy a synergistic relationship in the region. The co-location of freight and manufacturing firms minimizes transportation costs, creates a multitude of freight movement options for manufacturers, and helps foster the region's competitive edge as one of the largest metropolitan manufacturing clusters in the U.S. This co-location is most evident in communities near O'Hare and Midway International Airports, which have some of the region's highest concentrations of both manufacturing and freight activity.

This analysis builds on CMAP's prior work in freight and manufacturing to assess the local factors that affect the freight and manufacturing cluster in the O'Hare subregion. The area is home to 20 percent of the CMAP region's freight and manufacturing cluster employment and 22 percent of the region's industrial space. Approximately 25 percent of the jobs in the subregion are in the freight and manufacturing cluster, making the area highly dependent on the cluster. Long-term declines in manufacturing employment in the subregion are commensurate with regional and national trends and have in part fueled a decrease in employment in the subregion over the last decade. But, manufacturing location quotients and employment have grown in the subregion since recovery from the most recent recession began, with a diversification of industries. In addition, freight cluster employment in the subregion has grown substantially since 2010 and is now at its highest level in the last decade. Sustained growth in the freight and manufacturing cluster will depend upon continued cultivation of the subregion's transportation, workforce, and development advantages.

**Access to a trained workforce is one of the subregion's greatest assets, but an aging workforce and changing manufacturing processes emphasize the need for continued improvement of connections between employees, training programs, and employers.**

Manufacturers and developers indicate that the subregion's access to a trained workforce presents a substantial economic advantage. But, manufacturing processes in the subregion are changing, and manufacturers have trouble finding workers that can program and run machines in new, computer-aided manufacturing processes. Today's manufacturing positions require increasingly complex mathematical and critical thinking skills. In addition, 25 percent of the subregion's manufacturing workforce is over the age of 55 and will soon need to be replaced by new workers.

There are a number of organizations in the subregion seeking to provide training targeted at manufacturing firms within the subregion and region as a whole. For example, Harper College



is expanding its Manufacturing Technology program and increasing its partnerships with local municipalities to reach more students. An Advanced Training in Manufacturing (ATIM) Grant from the U.S. Department of Labor will allow local Workforce Investment Boards to train more workers in advanced manufacturing techniques. In addition, the Golden Corridor advanced manufacturing partnership, which addresses workforce and manufacturing industry development, is seeking to improve training programs and connections to them in the subregion.

**The subregion's transportation network has supported its predominance in manufacturing and freight, but local improvements are required to enhance the movement of people and goods through the subregion.** Upcoming improvements to freight rail, construction of the Elgin-O'Hare Western Access project, expansion of I-90, development of a new cargo facility at O'Hare International Airport, and improvements to passenger rail systems will all continue to enhance the competitive position of the subregion. But, opportunities exist to improve freight movement and worker commutes in the subregion. First, transporting freight and manufacturing workers from transit nodes to their place of employment is an ongoing issue in the subregion. A number of local stakeholders and municipalities are seeking to address this issue through transit corridor studies, worker shuttles, and other initiatives to improve transit connections between workers and jobs.

In addition, disconnected local truck routes make it difficult for trucks to move through the subregion. By regulating against truck traffic rather than planning for it on a multijurisdictional scale, municipalities may force trucks to travel down streets with inadequate public infrastructure and increase congestion problems. Coordinating truck routing across jurisdictions, planning for improved infrastructure on those routes, and designating areas where key new truck connections are required can improve the competitive position of the subregion. This effort can serve to direct truck freight to fewer routes, decrease community costs, and address quality-of-life concerns.

**Recurring flooding is problematic for some of the subregion's densest freight and manufacturing areas, and multijurisdictional cooperation is required to continue to improve stormwater and drainage issues.** The areas with most consistent flooding are located along the southern portions of O'Hare airport and contain a substantial proportion of the subregion's freight and manufacturing businesses. While significant improvements and planning to address flooding problems have already been completed, flooding remains a substantive issue for some portions of the subregion. In response, some local manufacturers and building owners have developed their own pump systems. Repeated flooding reduces building values, limits redevelopment potential, and drives manufacturers to other locations. While both counties and local jurisdictions have planned for individual components of the issue as part of other planning processes, the area may benefit from a multijurisdictional plan tailored to the stormwater and drainage problems in the subregion.



**Industrial development is a prominent part of the subregion’s landscape, and planning for conservation and redevelopment of this asset will provide much-needed support for freight and manufacturing growth.** Despite the physical drawbacks of the older buildings prevalent in the subregion, industrial users continue to locate in the area to take advantage of its location, transportation, and workforce benefits. As a result, industrial rents and land values in the subregion are among the highest in the CMAP region. These high prices have limited market-driven redevelopment in the area. But, real estate brokers and industry actors indicate that recovery from the most recent recession, the subregion’s growing freight cluster, and construction of the EOWA all have the potential to spur industrial redevelopment in the subregion. Capitalizing on this to encourage preservation of key industrial areas and development of properties with modern amenities will help the cluster continue to adapt to changing freight and manufacturing needs.

Several factors have the potential to reduce the amount of industrial development in the subregion over the long term. First, consolidation of older format, small buildings and redevelopment will naturally lead to less overall square footage. In addition, industrial development in the subregion must compete with office and retail development, which can often afford to pay more for land. Local municipalities also have a fiscal incentive to plan for retail and office development over industrial development, as these uses often provide higher municipal revenues. Over the long term, planning for sufficient industrial development for the freight and manufacturing cluster to thrive in the subregion will be critical to the economic success of the region.



# Introduction

As recommended by CMAP's [Freight-Manufacturing Nexus report](#), this document examines freight and manufacturing trends in the O'Hare subregion and assesses the impact that area infrastructure and land use have on the health of the cluster. Building on access advantages provided by the confluence of an international airport, the expressway network, and freight rail lines, the O'Hare area has become one of the largest concentrations of freight and manufacturing activity in the region. This report evaluates existing conditions and initiatives to support freight and manufacturing in the O'Hare area over the long term.

The O'Hare subregion is at the cusp of potentially rapid change. Manufacturing employment has matched declining national trends while freight employment in the area is increasing. The subregion's substantial base of industrial, office, retail and residential development, has led to significant congestion. But, major air, freight rail, and highway improvements that will reduce congestion and improve access are underway.

Building on these planned improvements, local municipalities are actively planning for the redevelopment potential created by improvements such as the Elgin O'Hare Western Access and Western Access. In some cases, these plans outline a transition away from industrial uses. Assessing the impact of these local conditions and initiatives is critical to supporting the freight and manufacturing cluster in the O'Hare subregion over the long term.

## Background and Context

Past CMAP research has focused extensively on understanding freight and manufacturing industry clusters and how they interact with one another. Understanding this relationship and nurturing the synergy of freight and manufacturing helps support the region's global competitive edge.

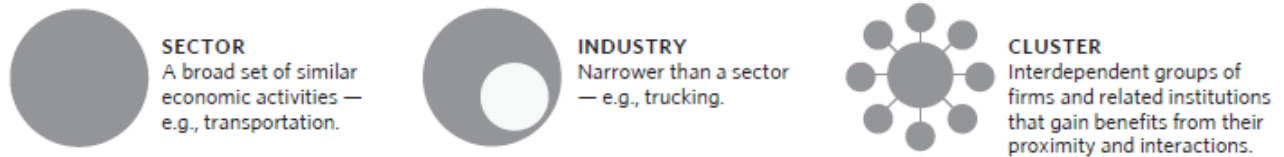
### Freight and Manufacturing in the CMAP Region

Prior CMAP research provides a contextual backdrop for exploring the O'Hare subregion's freight-manufacturing nexus. The drill-down reports utilize economic clusters to analyze freight and manufacturing trends in the region. Firms in a cluster can be divided into core industries such as freight or manufacturing that drive economic activity; supply industries that provide the core with value-added inputs; support industries that offer maintenance and infrastructure; and customers who purchase goods or services from the core.





**Figure 1. What is a cluster?**



### ***Manufacturing cluster drill-down***

Manufacturing has long been one of Chicago’s cornerstone industries. Chicago’s manufacturing cluster is unique from those of other metropolitan areas in that no single manufacturing industry type dominates employment in the cluster. In fact, the largest employment concentration in the cluster – machinery manufacturing – employs only 19 percent of all cluster workers. The region’s manufacturing diversity provides a high degree of economic resiliency.

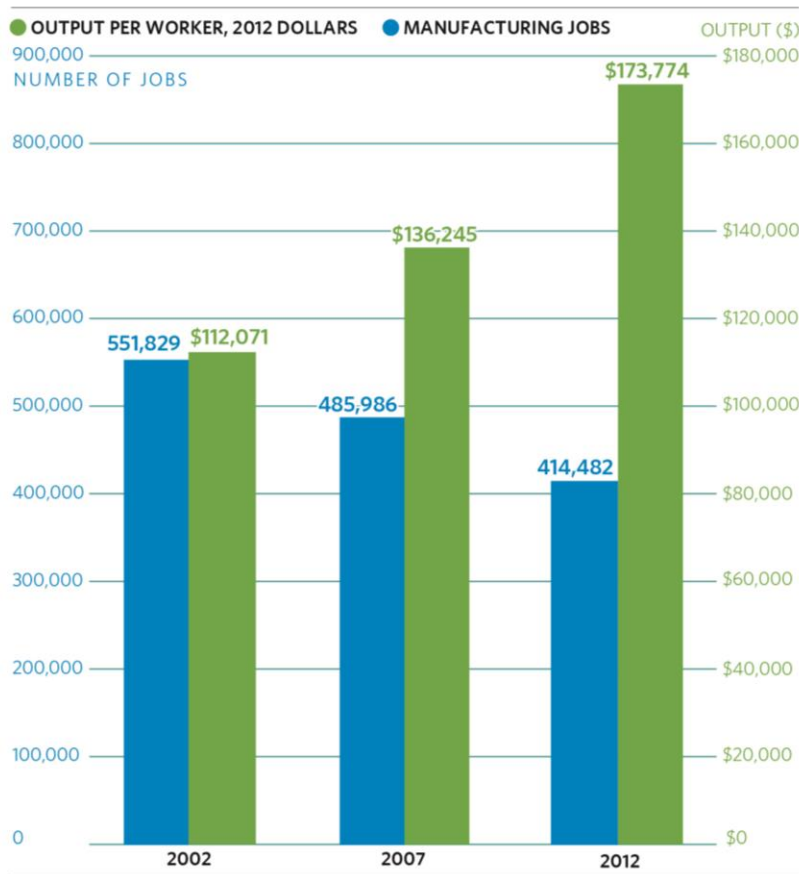
Increased international investment and technological advances in the last decade have helped turn manufacturing into a truly global market. This means that Chicago region manufacturers now regularly compete with developing countries where input costs are lower. In order to remain competitive, the region’s manufacturers are increasingly relying on skilled workers and advanced technologies to produce higher value complex manufactured goods. Although regional employment in manufacturing has declined in recent years, the total value of manufactured goods produced in the region has increased due to higher worker productivity.

While the region has lost a significant number of manufacturing jobs in the last decade, the future holds promise. The Chicago region has maintained its manufacturing specialization in sectors such as Electrical Equipment, Appliance, and Component Manufacturing, Plastic and Rubber Products Manufacturing, and Chemicals Manufacturing. Furthermore, many manufacturers who moved jobs overseas have found that production in developing countries can create a number of logistical and financial issues, and an increasing number of manufacturers are moving jobs back to the U.S.<sup>1</sup>

The drill-down notes that nurturing the type of advanced manufacturing that leverages metropolitan Chicago’s competitive advantages will best position the region to benefit from this manufacturing moment.

<sup>1</sup> J.R. Hagerty, “More Manufacturers Moving Operations back to U.S.,” *Real Time Economics* (blog), September 24, 2013. See <http://tinyurl.com/lx49awx>.

**Figure 2. Core manufacturing worker productivity and employment change in the Chicago region, 2001-12**



Source: CMAP analysis of Economic Modeling Specialists International (EMSI) data.

### ***Freight cluster drill-down***

The Chicago region has long been a prominent hub for freight activity, and its strength as a freight node supports manufacturing activities by allowing manufacturers to move their goods quickly and efficiently into, through, and out of the region. [CMAP’s Freight Drill-Down report](#) explored the impact of this sector on the region’s economy. The region’s freight cluster contains roughly 178,000 jobs and generates \$13 billion per year in personal income.<sup>2</sup> By value, roughly two-thirds of freight is moved through the region via truck. Rail carries another 30 percent of all freight, followed by air and water, which carry a combined 3 percent.

Chicago’s freight cluster includes a multitude of industries which impact the movement of goods. In addition to core industries such as freight transportation arrangement, couriers, or port operations, the cluster contains jobs in other industries such as warehousing, packaging and labeling, highway, street, and bridge construction, and transportation machinery manufacturing and leasing.

<sup>2</sup> Chicago Metropolitan Agency for Planning, “Metropolitan Chicago’s Freight Cluster: A Drill-Down Report on Infrastructure, Innovation, and Workforce,” 2012. See <http://www.cmap.illinois.gov/economy/industry-clusters>.

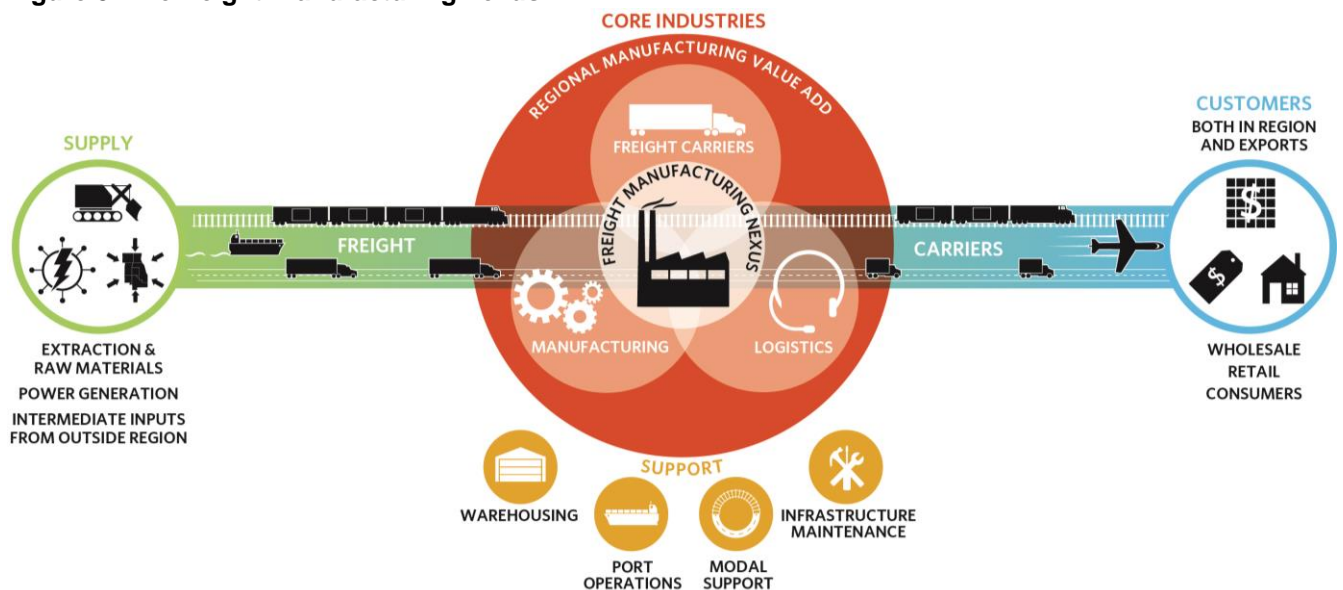


Recent innovations in technology and increased levels of global trade have revolutionized freight movement. Supply chains are becoming longer, albeit more fragmented, and logistics operations are increasingly using multi-modal transportation solutions to move products faster and minimize costs. The Chicago region’s intermodal facilities, which allow cargo to be quickly unloaded from trains and moved onto trucks (and vice versa), have helped metropolitan Chicago become the largest inland general cargo port in the U.S.<sup>3</sup>

### The freight-manufacturing nexus

The existence of both strong manufacturing and freight clusters within the Chicago region is not coincidental; each cluster depends closely upon the other. Manufacturers rely on freight carriers to deliver manufacturing inputs and bring finished products to customers. Freight carriers rely on manufacturers to provide a steady stream of business. These clusters are poised to capitalize on the recent resurgence in U.S. manufacturing.

Figure 3. The freight-manufacturing nexus



Note: The freight-manufacturing nexus (in the center, within the red circle) consists of three core industries—manufacturing firms, freight carriers, and logistics providers—that together enable regional value-add in the manufacturing process. These core nexus industries are responsible for transforming inputs from supply industries (on the left, in green) into goods consumed by customer industries (on the right, in blue). Lastly, support industries (below the core, in yellow) provide essential services to the core.

Source: CMAP analysis, 2013.

Trucking plays a key role in supporting the region’s manufacturing industry by moving goods both short and long distances. Chicago’s concentration of manufacturing supply chains has led to a regional specialization in short-haul trucking. This specialization connects local manufacturing nodes and provides great accessibility and choice in finding a local supply chain trucker to meet specific cost, time, and flexibility needs.

<sup>3</sup> Illinois International Port District, “Facts and Statistics.” See <http://www.iipd.com/about/facts-stats.htm>.

Manufacturers choose different freight modes depending on the type of good produced. Firms that manufacture raw materials and other low value-density items tend to use the most cost-effective method of shipping available, like rail, while firms that produce lighter weight high-value items, such as medical supplies or electronics, are more likely to use faster, costly shipping options such as truck or air freight. The variety of freight options in the region allows Chicago's manufacturing sector to produce and ship a wide variety of goods.

The co-location of freight and manufacturing activity is especially high in and around both of Chicago's major airports – O'Hare and Midway International Airports. This analysis focuses on the freight and manufacturing cluster in the O'Hare area. At a subregional level, numerous local and regional factors affect the success of the freight and manufacturing clusters. This analysis focuses on the specific workforce, infrastructure, and economic development challenges and opportunities related to freight and manufacturing in the subcluster.

## **The O'Hare cluster**

As described above, the O'Hare subregion is one of two zones in the Chicago metropolitan area that have a significant concentration of both freight and manufacturing uses. The communities near O'Hare Airport have historically had a strong concentration of these uses because of access to major rail, interstate, and air transportation resources. Equally critical, the study area also has access to a skilled labor pool, including a substantial proportion of the region's workforce employed in the goods producing or trade, transportation, and utilities sectors.

Although the subregion includes a significant concentration of manufacturing and freight-related businesses, it is also a major office location and contains the largest retail shopping center in the region. As of 2013, the study area contains roughly 534,000 jobs distributed across all employment sectors. The area's largest employment sector is Manufacturing, followed by Health Care and Social Assistance, and Wholesale trade. Overall, 24 percent of the O'Hare subregion's employment is within the Freight-Manufacturing cluster. This includes traditional manufacturing and freight industries as well as support industries like wholesale trade, administrative services, or computer programming.

The subregion is served by multiple freight transportation modes, making it a prime location for manufacturing activity. Major roadways within the study area include I-90, I-290, I-294, and I-355, as well as a number of major arterial roads. In addition to its extensive road network, the study area contains a sizable rail network which allows local businesses to receive and distribute goods. The area contains two intermodal facilities located in Northlake and Franklin Park, which allow shipping containers to be moved between rail and truck, and a container yard in Melrose Park. In addition, O'Hare airport has two existing cargo areas with warehouse space. An additional cargo area that will better facilitate the transfer of goods from air to truck freight is planned for the northwest side of the airport.

While freight and manufacturing are most concentrated in communities directly adjacent to O'Hare airport, manufacturing has a substantial presence in a much broader area west of



O'Hare. As a result, the subregion for this analysis spans 24 municipalities, 26 ZIP codes, two counties, and O'Hare International Airport.<sup>4</sup>

The subregion study area was defined using ZIP code data and therefore does not fully match municipal boundaries. As described above, the subregion is one of two regions identified in the Chicago metropolitan area that has a high degree of both freight and manufacturing activity. The Freight-Manufacturing Nexus report identified high-concentration ZIP codes based on the total number of individuals employed in freight or manufacturing in those ZIP codes. To account for both concentration and high employee counts within the freight and manufacturing clusters, this analysis has refined the definition of freight and manufacturing specialization to add ZIP codes in which 30 percent or more of all employment is in manufacturing or 10 percent or more of all employment is in freight as high density. This adds Schiller Park to the set of previously identified high-density manufacturing areas and Stone Park to the set of high-density freight areas.

In addition to those ZIP codes identified as high-density in freight or manufacturing, the study area includes several ZIP codes not identified as specialized in either freight or manufacturing that still play an important role in freight and manufacturing. These ZIP codes are highlighted in yellow on the map. Most play a key role in manufacturing activity as part of the larger "Golden Corridor," an area near and around I-90.<sup>5</sup>

The high-density freight and manufacturing ZIP codes, or the "core" ZIP codes, in the subregion contain nearly 320,000 jobs, with 100,000 of them in the freight and manufacturing cluster. Approximately 31 percent of all jobs in these core ZIP codes belong in the freight or manufacturing clusters while roughly 15 percent of jobs in outer ring ZIP codes belong. The broader manufacturing network of outlying ZIP codes is also an important contributor to the freight and manufacturing clusters near O'Hare.

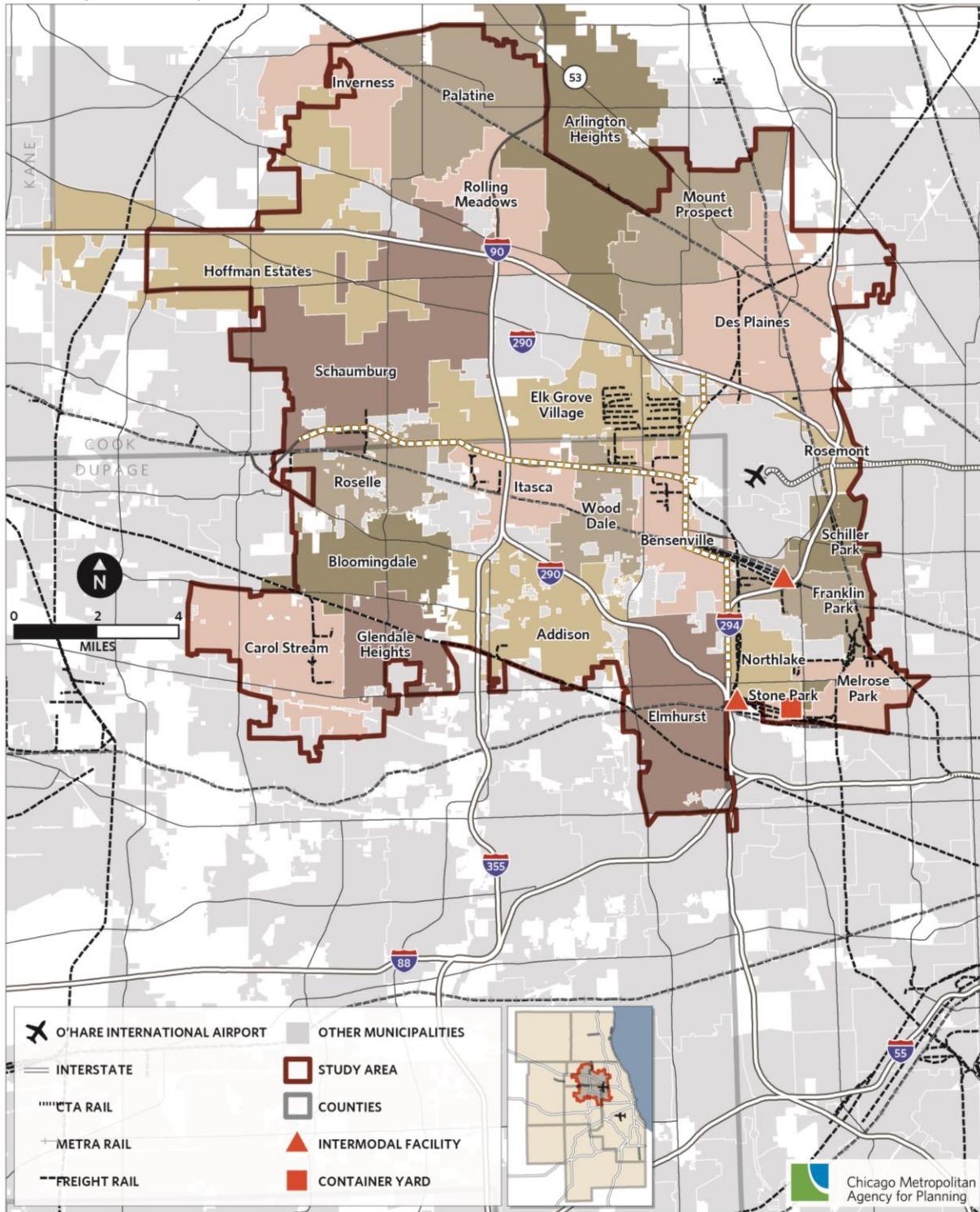
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<sup>4</sup> O'Hare International Airport (O'Hare) is located within the City of Chicago. However, this analysis does not include data from O'Hare International Airport ZIP code 60666.

<sup>5</sup> In 2013 CMAP's Local Technical Assistance group worked closely with the Golden Corridor Advanced Manufacturing Group and the Village of Hoffman Estates to create a strategic plan for future development in the Golden Corridor, which is located around I-90. For more information about the Golden Corridor, see CMAP's reports at <http://tinyurl.com/lxumye>.



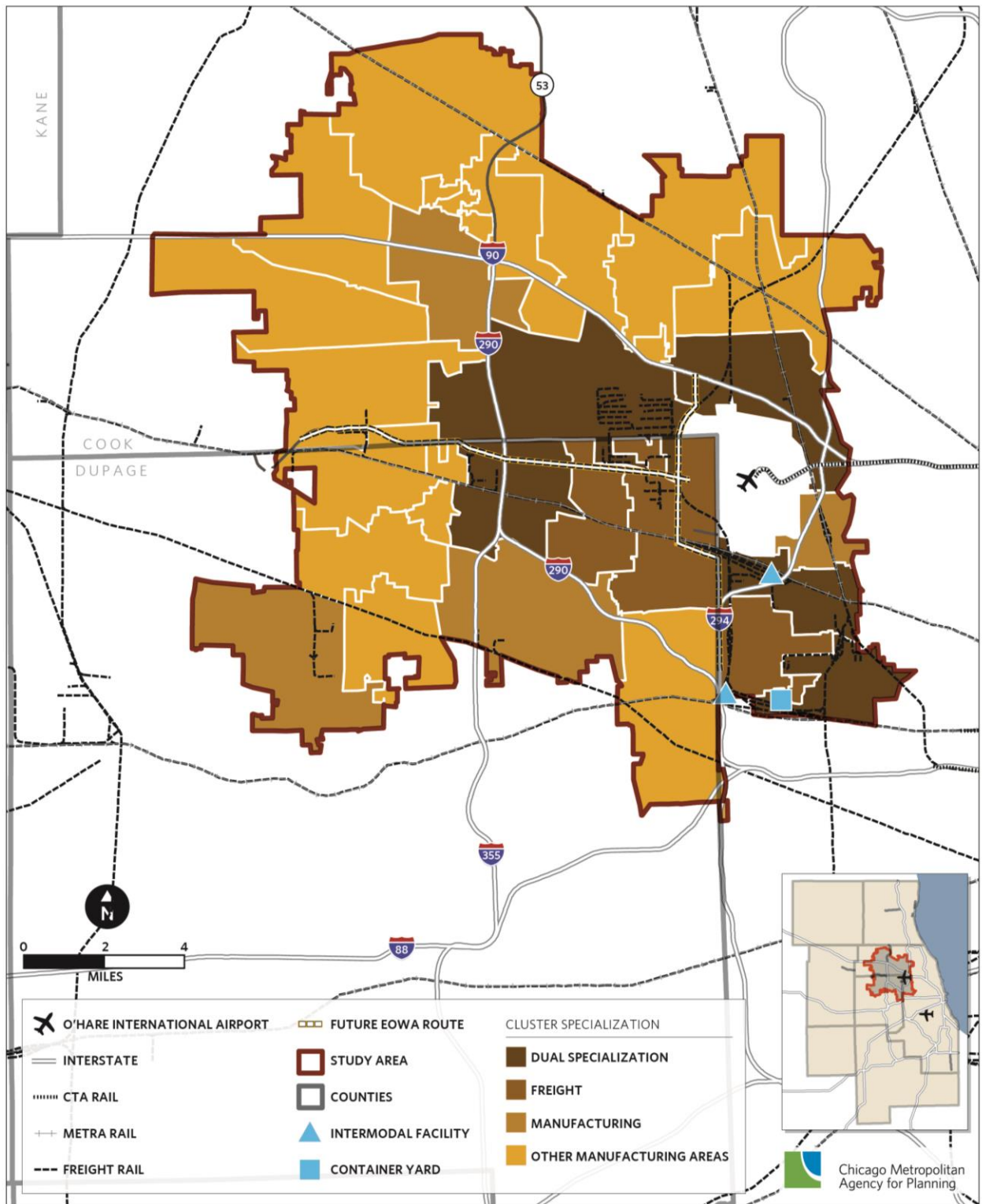
Figure 4. Study Area



Note: The study area boundary is based on ZIP codes due to the availability of economic data. Municipalities are shown for reference.

Source: CMAP analysis of Economic Modeling Specialists International (EMSI), U.S. Census, and Illinois Department of Transportation data.

Figure 5. Freight and manufacturing specialization by ZIP code



Note: "Other manufacturing areas" do not meet the Freight-Manufacturing Nexus benchmarks for freight or manufacturing employment but still have a significant amount of manufacturing employment.

Source: CMAP analysis of Economic Modeling Specialists International (EMSI), U.S. Census, and Illinois Department of Transportation data.

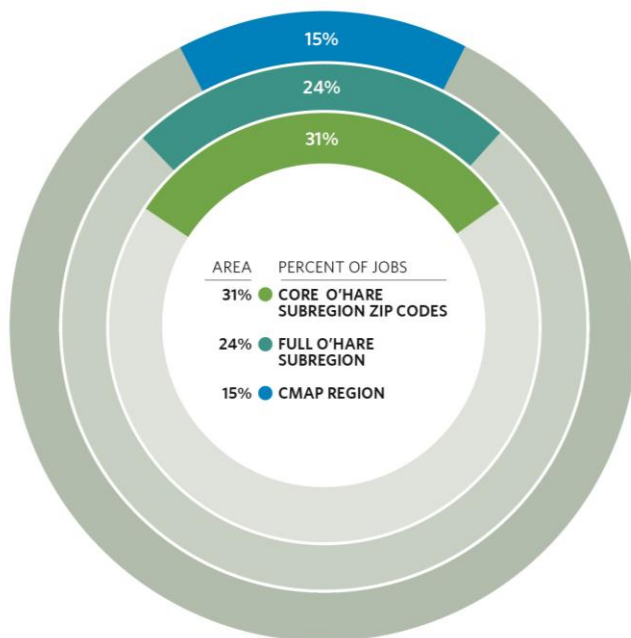
# Freight and Manufacturing Trends in the O'Hare Subregion

The subregion is home to roughly 534,000 jobs. Similar to the region as a whole, the study area contains a number of jobs spanning a variety of sectors. The freight and manufacturing clusters, which include job classifications that span across multiple industries, account for roughly 25 percent of all jobs in the subregion. Freight and manufacturing cluster employment is concentrated in the core ZIP codes of the study area.

## Major employment sectors and trends

Outside of the freight and manufacturing clusters, top employment industries include: Health Care and Social Assistance, Wholesale Trade, Administrative and Support and Waste Management and Remediation Services, and Retail Trade. Jobs within these five industries which are not counted as part of the freight or manufacturing cluster comprise roughly 43 percent of all employment in the study area.

**Figure 6. CMAP region and O'Hare study area employment concentration in the freight and manufacturing cluster, 2013**



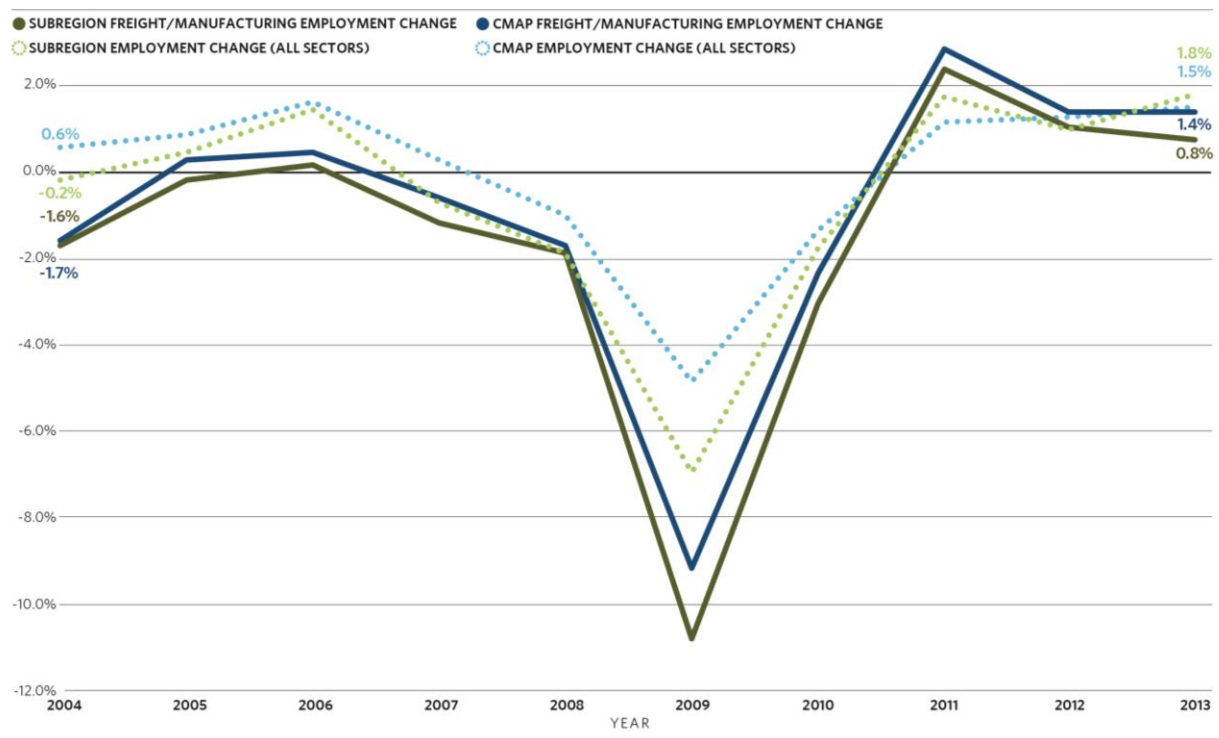
Source: CMAP analysis of Economic Modeling Specialists International (EMSI) data.

Over the last decade, the study area has experienced a net loss of about 29,000 jobs, which represents a decline in employment of 5 percent. This decline is in contrast to the Chicago region as a whole, which saw a very small increase in employment between 2003 and 2013. Year-over-year employment growth in the study area has lagged behind the regional average for eight of the last ten years.



The study area's larger job loss over the last decade is mostly attributable to the area's high concentrations of manufacturing activity. Manufacturing cluster employment has been declining at a faster rate than other industries in recent years. Between 2003-13, the study area shed roughly 22,000 manufacturing cluster jobs, and the cluster shrunk by 16 percent. This represents approximately 75 percent of the job losses in the subregion since 2003. Year-over-year freight and manufacturing cluster employment in the study area has lagged behind the regional average every year for the last decade. This trend reflects larger declines in manufacturing nationwide as well as the movement of firms to other areas of the region. The Wholesale Trade and Construction industries, both of which contain a small number of manufacturing and freight cluster jobs, also lost employment in the study area at a faster pace than national trends from 2003-13.

**Figure 7. Employment change in the O'Hare study area and the CMAP region, 2004-13**



Source: CMAP analysis of Economic Modeling Specialists International (EMSI) data.

In contrast to the manufacturing cluster, the subregion's freight cluster is growing. Between 2003-13 freight cluster employment in the subregion grew by 8.6 percent and added 3,300 jobs. This growth is in line with the national rate of 8.9 percent, and below the region's growth of 12.2 percent. The subarea's Transportation and Warehousing industry, which contains a substantial number of freight cluster jobs, added nearly 1,700 positions between 2003-13 and now employs over 35,000 individuals. The industry's location quotient grew by 0.16 points since 2003, making it the second fastest growing industry in terms of total location quotient growth in the last 10 years, falling behind only Administrative and Support and Waste Management and Remediation Services. A location quotient measures the region's proportion of jobs in a sector as



compared to that sector's proportion in the nation as a whole. A location quotient above 1.0 indicates that a sector has a higher concentration within the region as compared to the nation.<sup>6</sup>

**Figure 8. Components of the regional manufacturing cluster**



Source: CMAP analysis, 2012.

<sup>6</sup> For example, approximately 14.5 percent of the study area's jobs are in the manufacturing sector, as compared to 8.0 percent in the nation as a whole, generating a location quotient of 1.8.

Employment in industries outside the manufacturing cluster are experiencing the fastest growth in the subregion. The largest job gains in the last decade came from Health Care and Social Assistance industry, which added 9,400 jobs, followed by Administrative Support (7,800 jobs), and Professional, Scientific, and Technical Services (4,300 jobs). The Health Care and Administrative support industries do not contain any freight or manufacturing cluster jobs, but the Professional, Scientific, and Technical service industry does. Nearly half of all Professional, Scientific, and Technical service jobs provide support and supply services to either the freight or manufacturing cluster. Growth in both Health Care and Professional Services were consistent with national trends. The Administrative Support industry, which provides professional services to businesses, witnessed growth much stronger than the national average.<sup>7</sup> In the last decade the industry grew its location quotient in the study area by 0.24 points – the largest gain of any industry in the study area.

## **Manufacturing cluster employment trends**

The O’Hare subcluster lost 26,000 manufacturing cluster jobs between 2003-10. Since 2010, the cluster has experienced modest job growth, recovering 4,000 manufacturing jobs over the last three years for a total net decline of 22,000 jobs over the last decade. Despite these losses, the location quotient of the study area’s manufacturing cluster changed little between 2003-13, oscillating between 1.71 and 1.75. This long-term consistency in location quotient suggests that much of the area’s manufacturing cluster job losses can be attributed to broader changes in the national manufacturing environment.<sup>8</sup>

The manufacturing cluster as defined by CMAP includes four components. “Core” industries include the heart of manufacturing activities – businesses that transform materials into new products through mechanical, physical, or chemical processes. In addition to core manufacturers, the cluster contains support industries that provide R&D services, supply industries that provide inputs for production, and customer industries that move goods through supply chains and into the market.

Historically-strong manufacturing industries within the subregion’s cluster have experienced recent decline. With one exception, every core industry within the study area’s manufacturing cluster has experienced an employment decline over the last decade. The one exception -- leather product manufacturing -- is a small component of the cluster and added only 40 jobs since 2003. The five largest core manufacturing industries in the subregion (Fabricated Metals, Machinery, Computer and Electronic Products, Food, and Printing) lost a combined 17,500 jobs over the last decade and all experienced declining location quotients. This means that employment declines in these industries exceeded national trends.

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<sup>7</sup> The Administrative and Support Services sector includes business types such as janitorial services, pest control, temporary staffing, and credit and collections services.

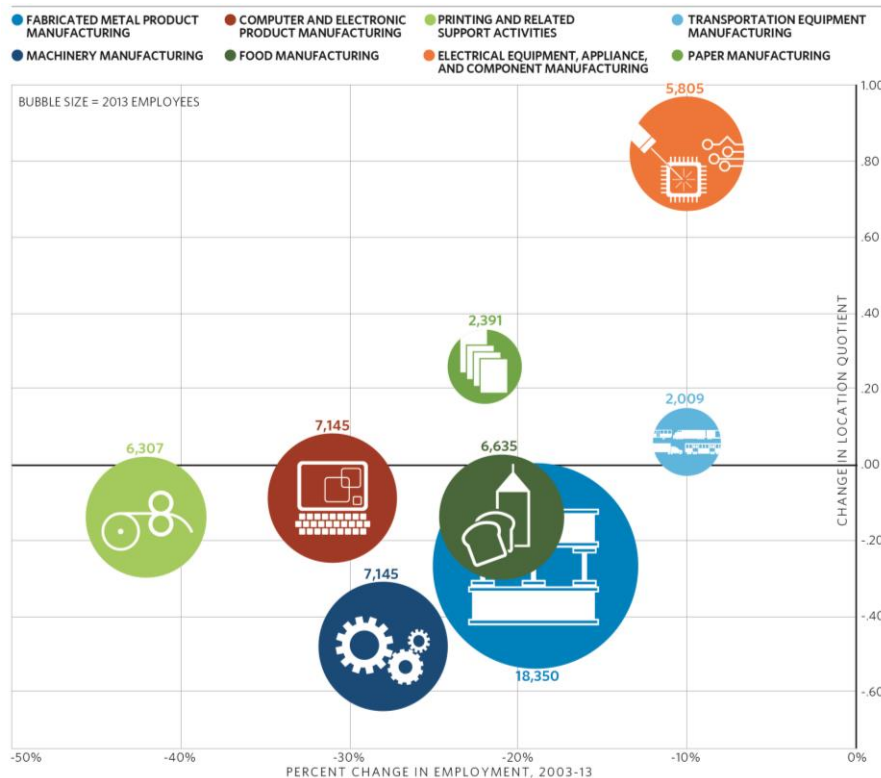
<sup>8</sup> CMAP analysis of EMSI data.



But, employment data for recent years shows that manufacturing is again growing in the subregion. Between 2010-13, the subregion’s manufacturing cluster grew by 3.6 percent, adding nearly 4,000 jobs. The subregion’s largest manufacturing industry subsector – Fabricated Metal Product Manufacturing – has added over 1,100 jobs since 2010, and the Transportation Equipment Manufacturing subsector added nearly 350 jobs. In an effort to support the rebound of metal fabricators in the subregion and across Cook County, the Cook County Bureau of Economic Development recently applied for a federal grant to be designated as a Metal Manufacturer Consortium via the Investing in Manufacturing Communities program.<sup>9</sup>

Declines in the location quotients of the largest core manufacturing industries in the study area have been offset by increasing location quotients in manufacturing types that have traditionally had a smaller presence in the subregion, such as Electrical Equipment, Appliance, and Component Manufacturing, Transportation Equipment Manufacturing, and Paper Manufacturing. The growth in location quotient of these industries indicates growing diversity within the study area’s manufacturing cluster. Over the long term, this diversification trend will support greater stability in manufacturing employment within the study area.

**Figure 9. Study area core manufacturing sectors change in employment and location quotients, 2003-13**



Source: CMAP analysis of Economic Modeling Specialists International (EMSI) data.

<sup>9</sup> Per CMAP staff conversations with Cook County, May 2014.

## **Freight cluster employment trends**

In contrast to job losses in the study area's manufacturing cluster, freight cluster employment in the study area increased between 2003-13. Employment grew by 8.6 percent from 37,800 to 41,100. The study area's freight cluster has a location quotient of 2.17. The concentration of freight cluster employment in the study area is over twice as high as the national average. Historically steady, much of the area's location quotient growth has come in recent years. Between 2008-13, the study area's freight cluster grew at a much faster pace than the national average and the cluster's location quotient increased from 2.01 to 2.17.

### ***Support activities for transportation***

The study area's high freight cluster location quotient has been fueled by a large employment increase in the Freight Transportation Arrangement industry, which added 1,900 jobs over the last ten years and now employs over 8,900 people in the study area. This industry is primarily engaged in arranging transportation between shippers and carriers. Common business types in this category include freight forwarders, shipping agents, and other businesses that provide shipping support across multiple freight modes.

The significant growth of Freight Transportation Arrangement employment is not surprising in the context of greater trends in freight and logistics. Manufacturing supply chains are becoming increasingly global and fuel costs are on the rise, leading many manufacturers to rely on increasingly complex multi-modal transportation solutions that minimize costs and move goods more effectively. This trend has created demand for dedicated transportation arrangement services. In addition, freight forwarders often prefer to locate near major airports, and the expansion of O'Hare International has spurred investment and expansion in the area by Freight Arrangement firms.<sup>10</sup>

### ***Truck and rail transportation***

The study area has also experienced employment growth in truck and rail transportation. Long-distance general freight trucking employment in the study area increased by 26 percent over the last decade and experienced a location quotient growth from 1.34 to 1.81. The study area is now home to 5,400 long-distance general freight trucking jobs. Local short-distance trucking employment declined slightly in the last ten years; however the study area still maintains a location quotient of 3.1. Rail Transportation employment in the study area increased between 2003-13, growing from 1,000 to 1,350, however nearly all of that increase occurred between 2012-13, likely due to a single company moving its employment base into the study area.

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<sup>10</sup> CMAP interview on 2/11/14 with Colliers International.



## **The freight and manufacturing workforce**

An increasingly global economy has led to a permanent shift in the composition of the study area's labor force. Many lower-skilled manufacturing positions have been moved overseas, and manufacturers are now seeking a more educated workforce to compete in today's economy. Freight and logistics are playing a greater role in moving products efficiently around the globe and through the region. Understanding the future needs of the region's manufacturing and freight workforce will ensure that these clusters remain competitive with other metropolitan areas.

### ***Growing and declining occupations***

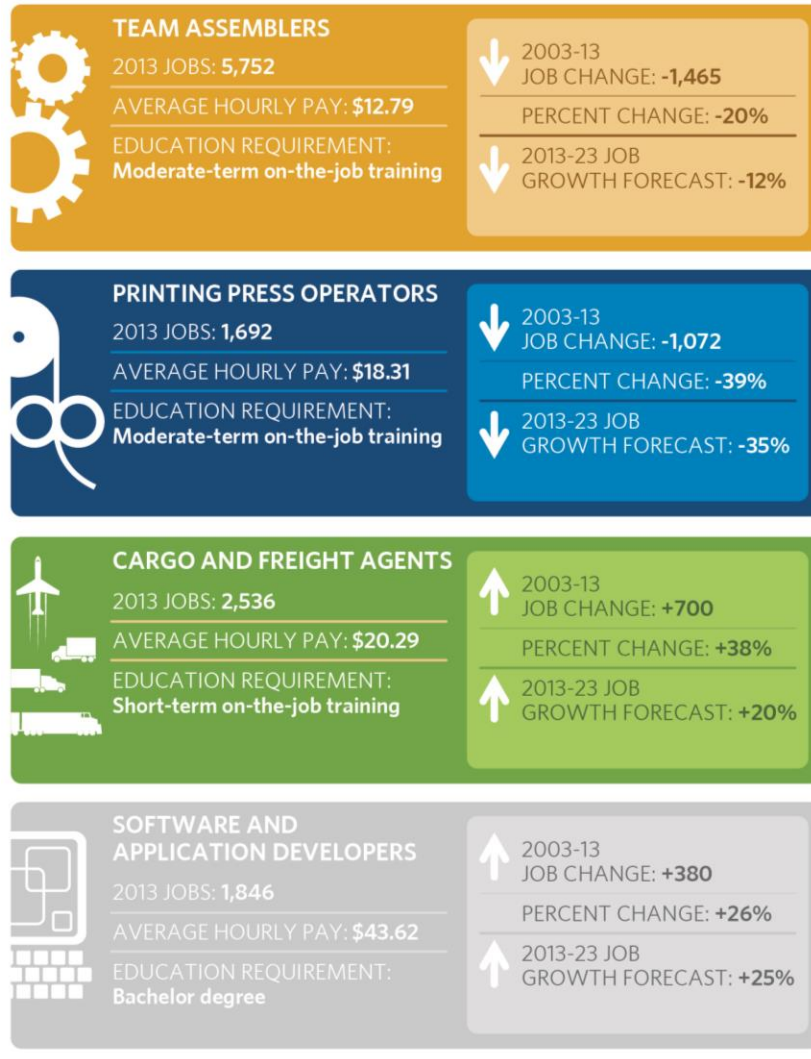
The rise and fall of various industries in the study area have led to dynamic changes in occupations for individuals working in the area. As is the case across the U.S., more occupations now require postsecondary educations. This is especially true in the freight and manufacturing cluster within the study area. An analysis of EMSI data shows that, between 2003-13, employment in freight and manufacturing in study area occupations requiring less than an Associate degree declined by 15.6 percent from roughly 120,200 to 101,200. During the same time period, employment in occupations requiring an Associate degree or higher declined by 7.6 percent from 30,500 to 28,200. Although jobs declined in each category of work, the loss of jobs in occupations requiring less educational experience was much greater over the last decade.

The biggest job-losing occupations in the study area over the last decade include Team Assemblers, Printing Press Operators, and First-Line Supervisors. The Team Assembler position involves assembling products or components along an assembly line. Employment in the occupation shrunk by an estimated 1,465 jobs from 2003-13. Printing press operator employment fell by over 1,000 positions, and First-Line Supervisor employment fell by over 950 positions. All three of these positions require moderate on-the-job training or less, making them susceptible to movement to areas where labor costs are lower. In fact, nine of the top ten largest occupational declines in the study area over the last decade came from positions which only require short or moderate length on-the-job training while seven of the top ten fastest growing freight and manufacturing cluster occupations require a postsecondary degree or higher.

Although most growing occupations within the cluster require a postsecondary education, the fastest-growing cluster occupation in the subregion from 2003-13 – Cargo and Freight Agent – does not. Cargo and Freight Agents expedite and route the movement of incoming and outgoing freight shipments in air, train, and trucking terminals, as well as shipping docks. Agents also prepare and examine bills of lading to determine shipping charges and tariffs. In the last decade, the subregion has added 700 new Cargo and Freight Agent positions. The occupation pays on average \$20 per hour and only requires a high school diploma and on-the-job training. But, area businesses indicate that some level of technical, writing, and computer training is still valuable for these jobs.



**Figure 10. Current status and anticipated change for O'Hare area freight/manufacturing occupations**



Source: Economic Modeling Specialists International (EMSI).

The second-fastest growing freight-manufacturing occupation in the study area over the last ten years was Software and Computer Application Developers. The increasing complexity of manufacturing and freight activity has led to increased demand for software and application development that support advanced manufacturing and logistics management. It should be noted that not all of the increase in software and application development employment in the region can be attributed solely to increased demand from the freight-manufacturing nexus. Other industries in the subcluster, such as health care, generate substantial demand for application development and information technology solutions. The data available on changes in employment in this occupation are not granular enough to discern what proportion of the increase in demand for software and technology-related fields comes from freight and manufacturing activity.



The growth of the Cargo and Freight Agent position is a benefit to the study area as the position provides good wages and has a lower education requirement, which makes it accessible to a larger portion of the workforce. As previously mentioned, outside of this occupation, most growing positions in the study area's freight and manufacturing cluster require a postsecondary degree. Manufacturers are increasingly relying on advanced production processes and employee skill to compete in a global economy, and occupational trends reflect this phenomenon. In order to continue growing Chicago's manufacturing cluster both in the study area and across the region it will be important for employers and educators to provide individuals with the workforce training needed for future success.

### **Workforce development**

The subregion is one of many manufacturing hotspots in the Chicago metropolitan area. Growth in the subregion's manufacturing cluster in recent years is a welcome sign for the local economy, but several challenges and future trends will continue to re-shape the subregion's freight and manufacturing cluster.

As previously mentioned, demographic trends show that the region's manufacturing workforce is growing older and many employees are close to retirement. Some of these employees have spent decades learning and improving their trade and enhancing manufacturing productivity. The departure of these high-skilled individuals will create significant demand for new skilled employees. Unfortunately, misconceptions about manufacturing careers have led to a decreasing supply of young skilled manufacturing laborers.

Today's manufacturing positions require increasingly complex mathematical and critical thinking skills. Advanced machinery such as Computer Numerically Controlled (CNC) machines now dominate factory floors. Many welding positions have now become automated, but not enough welders have the necessary skills to program and run new robotic welding machines.<sup>11</sup> Manufacturing clusters nationwide are having trouble finding employees to fill the positions.<sup>12</sup>

#### **The Manufacturing Technology Program at Harper College**

Located in Palatine, just north of Interstate 90, Harper College has partnered with the Illinois Network for Advanced Manufacturing to develop advanced manufacturing training curricula in areas such as Mechatronics, CNC Operations, Metal Fabrication, and Supply Chain Logistics. The program aims to address a widening skills gap between employer needs and workforce qualifications.

Several local manufacturers have expressed support for the program, pledging to provide paid internships to students participating in the training. The program is expanding, and will have a stronger presence within the O'Hare subregion.

Several institutions in the subregion are already working to address this skills gap. Harper and Oakton Community Colleges, for example, received a \$12.9 million federal grant in 2012 to

<sup>11</sup> CMAP interview with Valley Industrial Association.

<sup>12</sup> Tom Morrison et al. "Boiling point?: the skills gap in U.S. manufacturing." 2011. See <http://tinyurl.com/l675dcs>.





expand the number and scope of advanced manufacturing training courses offered, and local workforce investment boards (WIBs) have increased efforts to expand training opportunities.<sup>13</sup> The DuPage workforce board, in partnership with other collar county WIBs recently secured a \$2 million federal grant to provide advanced manufacturing skills training to low-income and dislocated workers. The state's Department of Commerce and Economic Opportunity has also dedicated funding toward addressing the skills gap through its Employee Training Investment (ETIP) program.

Surveys of Golden Corridor manufacturers show that many manufacturers in the study area provide financial assistance in helping employees obtain training outside of work. Many manufacturers also provide internal on-the-job training. On-the-job training is usually conducted in-house, while a smaller portion of manufacturers seek help from outside agencies to provide training.<sup>14</sup>

The Golden Corridor Advanced Manufacturing Partnership has been working to coordinate training opportunities for local residents and inform young people about careers in advanced manufacturing. CMAP's recently-completed Golden Corridor report provides multiple recommendations with regard to ensuring the long-term viability of the organization and strengthening efforts to connect students, training programs, and potential employers.

Connecting manufacturers and employees to training resources is becoming increasingly critical. While the combined freight and manufacturing workforce in the O'Hare subcluster has declined over the last decade, positions requiring no postsecondary degree have declined at twice the rate of those requiring a degree. Growing industries in the subcluster will increasingly require some level of post-secondary education, from basic technical certifications to bachelor's degrees.

An additional workforce concern is that 25 percent of the workforce in the study area is aged 55 or over.<sup>15</sup> It is likely that, over the next decade, there will be a significant turnover in the cluster's workforce. Providing training for the new workforce in growing sectors will be critical to support the freight and manufacturing cluster. It is often difficult for manufacturers to find

#### **Advanced Training in Manufacturing (ATIM) Grant**

In 2013 the region's collar counties received a Workforce Innovation Fund grant through the U.S. Department of Labor. The grant will allow collar county Workforce Investment Boards and local manufacturers to provide advanced manufacturing training to approximately 170 individuals. The grant funding will provide training in areas such as CNC Operations, Metal Fabrication, Industrial Machinery Mechanics, and Robotics. The grant targets low-income and dislocated workers (workers and workers who have been previously laid off due to economic conditions).

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<sup>13</sup> Kimberly Pohl, "Innovative Harper College manufacturing program spreading statewide," Daily Herald, September 20, 2012. See <http://tinyurl.com/mabw8qf>.

<sup>14</sup> Chicago Metropolitan Agency for Planning, "Manufacturing in the Golden Corridor." See <http://tinyurl.com/l3jgpwo>.



employees for jobs that require advanced skillsets, and education can be cost prohibitive for individuals seeking employment in manufacturing. Metropolitan Chicago’s transition to high-tech manufacturing presents a significant opportunity for community colleges and WIBs to step in and provide relevant, low-cost education to current and future manufacturing sector employees.

### **Access to workforce**

One of the subregion’s greatest assets is its skilled workforce. A total of 40 percent of all study area workers, whether they work within the study area or not, are employed within the goods producing industry class or the trade, transportation and utility class, as compared to 34 percent for the Chicago region as a whole.<sup>16</sup> Approximately one-quarter of all study area employees both live and work in the study area.

Shorter commutes are a critical component of worker attraction, retention, and productivity.<sup>17</sup> Approximately 40 percent of those who work in the study area live within 10 miles and 81 percent live within 25 miles. Furthermore, many of the region’s workers in the goods producing class live on the north and west sides of Chicago, within adjacent suburbs, or in the Northwest corridor, complementing the labor force within the study area. This provides a strong, talented base of workers for employers to draw from within a small commute shed. Interviews with brokers indicated that access to the trained workforce in and near the subregion is a critical factor in attracting freight and manufacturing tenants to the study area.<sup>18</sup> Over the long term, continuing to capitalize on this accessible, trained workforce will be essential to the success of the study area.

The following graphic describes two components of journey to work in the subregion: where residents work, and where workers reside. Both charts show the direction, distance, and proportion in which workers are traveling. The chart on the left indicates the distance and direction that residents of the study area travel for work, and the chart on the right provides information on how far those employed within the subregion travel for work. 53 percent of subregion residents travel less than 10 miles for work, while a lesser 40 percent of workers within the subregion travel less than 10 miles to reach the study area. Both graphs show a

#### **Figure 11. Location and distance of the study area worker homes**

strong amount of travel to and from the southeast, indicating workers going to downtown Chicago or traveling from the north and west sides of the city and adjacent suburbs.

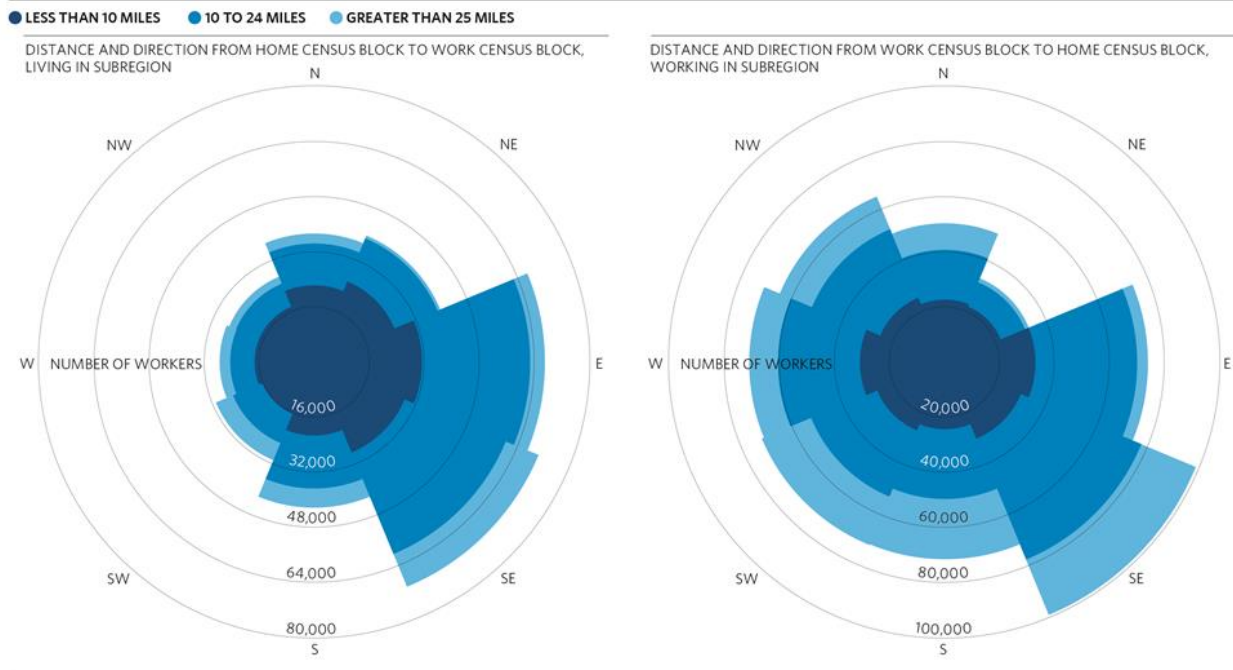
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<sup>16</sup> The source is CMAP analysis of Longitudinal-Employer Household Dynamics Program data, accessed February 25, 2014 at <http://lehd.ces.census.gov/applications/help/onthemap.html>. Goods producing jobs include the traditional manufacturing sector. Trade, transportation and utilities jobs include freight jobs, retail trade, and the utility sector. The latter two are outside of the freight and manufacturing clusters, but could not be disaggregated for this analysis.

<sup>17</sup> William Clark, Youqin Huang, and Suzanne Withers, “Does commuting distance matter? Commuting tolerance and residential change,” University of California, Los Angeles, 2002.

<sup>18</sup> In order to further understand what drives investment within the study area, CMAP conducted interviews with 5 real estate brokers in the study area. The interviews were conducted between January and February of 2014.





Source: U.S. Census OnTheMap, <http://onthemap.ces.census.gov>.

## The freight-manufacturing nexus in the O’Hare subregion

The study area is a key freight node for all three of the region’s freight transportation mechanisms. Major improvements planned for study area’s road, rail, and air infrastructure will make freight movement into, through, and out of the region even easier for local businesses. The freight and manufacturing sectors benefit from one another, but work force, supply chain, building needs, and other factors play into location choice for each. The manufacturers present in the subregion depend on the local freight networks, particularly truck and air freight. But, rail freight and study area manufacturers are not as strongly interdependent due to changing manufacturing and transportation needs.

CMAP’s Freight-Manufacturing Nexus report identified three categories of production within manufacturing that tend to use specific types of freight transportation. These three types of manufacturing are present in the studying area to varying extents. The presence of each of these production categories has a strong influence on the types of freight that are most utilized by study area manufacturers.

The study area is home to all three types of these firms. But measuring the study area’s location quotient for all three of these industry categories against the CMAP region’s location quotients shows that the study area is highly specialized in Regional Processing and Globally Traded Final Goods, but not in Resource-Intensive Primary Production.



**Figure 12. Study area and regional location quotients for nexus industries**

MANUFACTURING TYPE	SUBREGION LOCATION QUOTIENT	CMAP REGION LOCATION QUOTIENT
Resource-intensive primary production	.87	.81
Regional processing	2.34	1.36
Globally traded final goods	1.65	.89

Source: CMAP analysis of Economic Modeling Specialists International (EMSI) data.

Regional Processing and Globally Traded Final Goods manufacturers tend to produce higher value-added products and often select truck or air as their primary freight method. Resource-Intensive Primary Production (RIPP) manufacturers, on the other hand, produce low-margin products and often seek to minimize costs by selecting lower cost shipping options such as Rail. The lack of RIPP specialization in the study area indicates that there is a limited connection between rail infrastructure and primary production manufacturers prevalent in the subregion. The study area does, however, seem to be leveraging its road and air infrastructure assets with significant specializations in Regional Processing and Globally Traded Final Goods, both of which tend to rely on trucking or air as primary freight methods.

The study area’s lack of specialization in RIPP is not necessarily surprising. Although the area is served by rail infrastructure which caters to this type of manufacturing, land values may be too high and building stock too small for many RIPP manufacturers to consider locating in the area. RIPP manufacturers tend to have low profit margins and require larger building footprints, meaning that they are priced out of the study area.

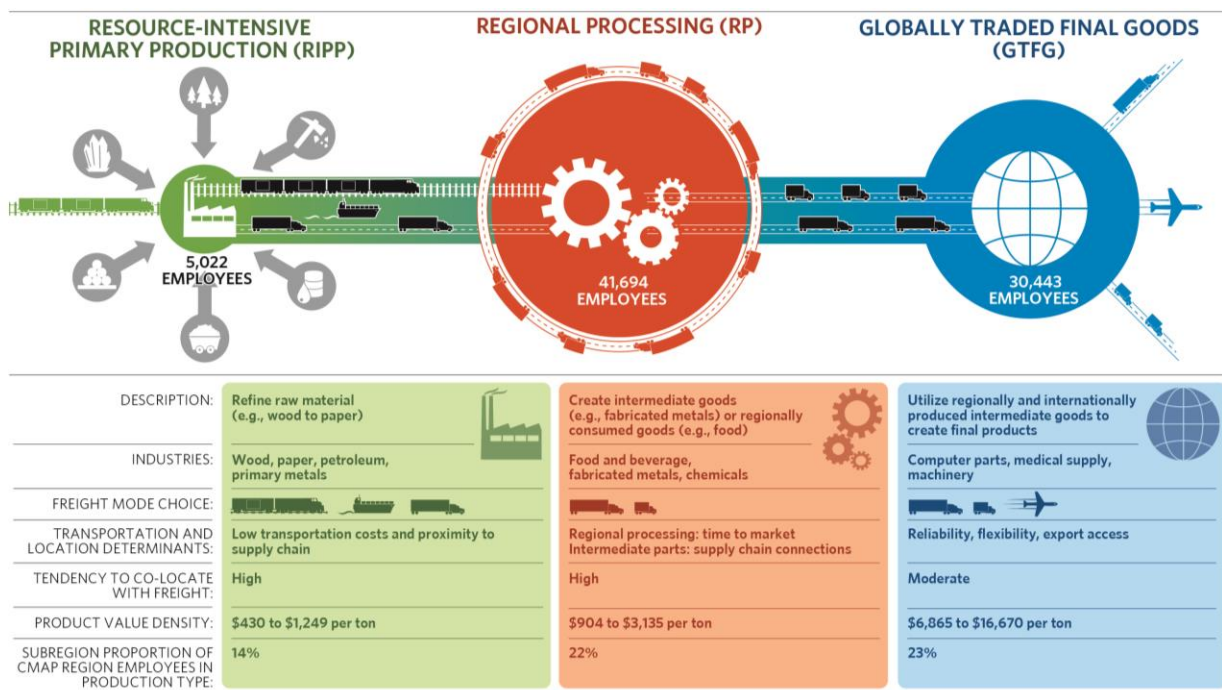
**Resource-Intensive Primary Production Industries**, such as Wood and Paper or Primary Metals tend to ship products that have a low value density. For example, paper is very heavy relative to its monetary value. Products produced in primary production industries tend to have low product margins and high transportation costs. These characteristics lead firms to choose freight movement methods that minimize costs, such as truck, rail, or water transportation.

**Regional Processing Industries**, such as Food and Beverage, Chemicals, or Printing rely heavily on up- and down-stream supply chains. For many of these manufacturers, time to market and freight costs in moving intermediary products are important considerations when choosing a freight mode. Trucking is a common transportation choice for these firms since it provides a mix of flexibility and speed at an affordable cost.

**Globally Traded Final Goods** manufacturers turn primary and intermediate goods into final consumer products. Example industries include consumer electronics manufacturing, medical supply manufacturing, and furniture and apparel manufacturing. These products are highly valuable and are often produced for a global market. These industries must be able to react quickly to shifting consumer demand and get products to markets quickly. Many globally traded final goods producers rely on air freight or specialized truck modes as a means of moving their products to market.



**Figure 13. The freight-manufacturing nexus in the O'Hare subregion**



Source: CMAP analysis of Economic Modeling Specialists International (EMS) data and Wial et al. "Why Does Manufacturing Matter?", 2012.

Real estate broker interviews confirm what the data show.<sup>19</sup> Interviewees suggested that much of the rail traffic in the study area is created by the intermodal stations and consists of long-range shipments moving through the study area. Several brokers suggested that the local spur connections to industrial buildings in the study area may be outdated and deteriorating, and the cost of fixing rail connections can be cost-prohibitive for many businesses. Small repairs can cost as little as \$5,000, but replacement of rail access spurs costs as much as \$100,000.<sup>20</sup> The end result of these industry and rail factors is an underutilization of local rail infrastructure, and a high dependence on truck freight.

It is worth noting again that the study area is truly unique with its diverse mix of road, rail, and air infrastructure. Manufacturers who locate in the study area for transportation purposes primarily choose the area for one of these three transportation benefits, and the existence of all three modes of freight transportation in the study area pits all three manufacturing types against one another in a competition for space, which drives up land values and rents. In the end, industrial space is allocated to manufacturers and freight and logistics companies willing to pay the highest amount for the privilege of using the area's infrastructure. Some RIPP manufacturers are priced out of the area by competition from higher value-density manufacturers seeking to use trucking and air infrastructure.

<sup>19</sup> CMAP conducted interviews with five real estate brokers from various real estate firms in the study area between January and February of 2014.

<sup>20</sup> CMAP interview with the Chicago Terminal Railroad on March 20, 2014

# Infrastructure in the Freight and Manufacturing Context

The high utilization of the subregion's infrastructure underscores how the transportation network is supporting the region's economy. But, extensive usage of rail and road infrastructure does have negative consequences. In particular, traffic congestion and the high maintenance costs caused by extensive use of public infrastructure are significant problems.

## The transportation network

Despite the area's access to local rail spurs and national rail lines, data suggest that truck freight is the preferred mode of goods transportation for most study area manufacturers. While there are primary production businesses in the area that traditionally use rail, the study area's greatest concentration of employment is in sectors more likely to be dependent on local truck freight. It is worth noting that the study area does have a strong presence of rail and intermodal facilities that provide for transfer of goods between trucks and trains. These facilities may cater more toward long-haul shippers not located in the immediate study area, however.

### Roadways

The study area is served by several major interstates, which are essential to manufacturers—not just to move their freight, but also to connect local suppliers, customers, and other service providers. Major interstates and tollways in the region include I-90, which is the longest interstate highway in the U.S. and runs through Chicago on its way from Boston to Seattle, as well as I-290, I-294, I-355, the Elgin-O'Hare Expressway, and Illinois Route 53.

Construction workers in 2013 broke ground on the \$3.4 billion Elgin O'Hare Western Access (EOWA) project. The project will extend the current Elgin O'Hare Expressway eastward to O'Hare International Airport and build a new expressway that will connect I-90 to I-294 on the western side of the airport. Other improvements include two added lanes on the existing Elgin-O'Hare, a new ramp crossing York Road and freight rail lines to the airport, a four-lane Taft Avenue connector with a new crossing over the Bensenville Rail Yard, and several new interchanges and access points. Construction is expected to run through 2025.

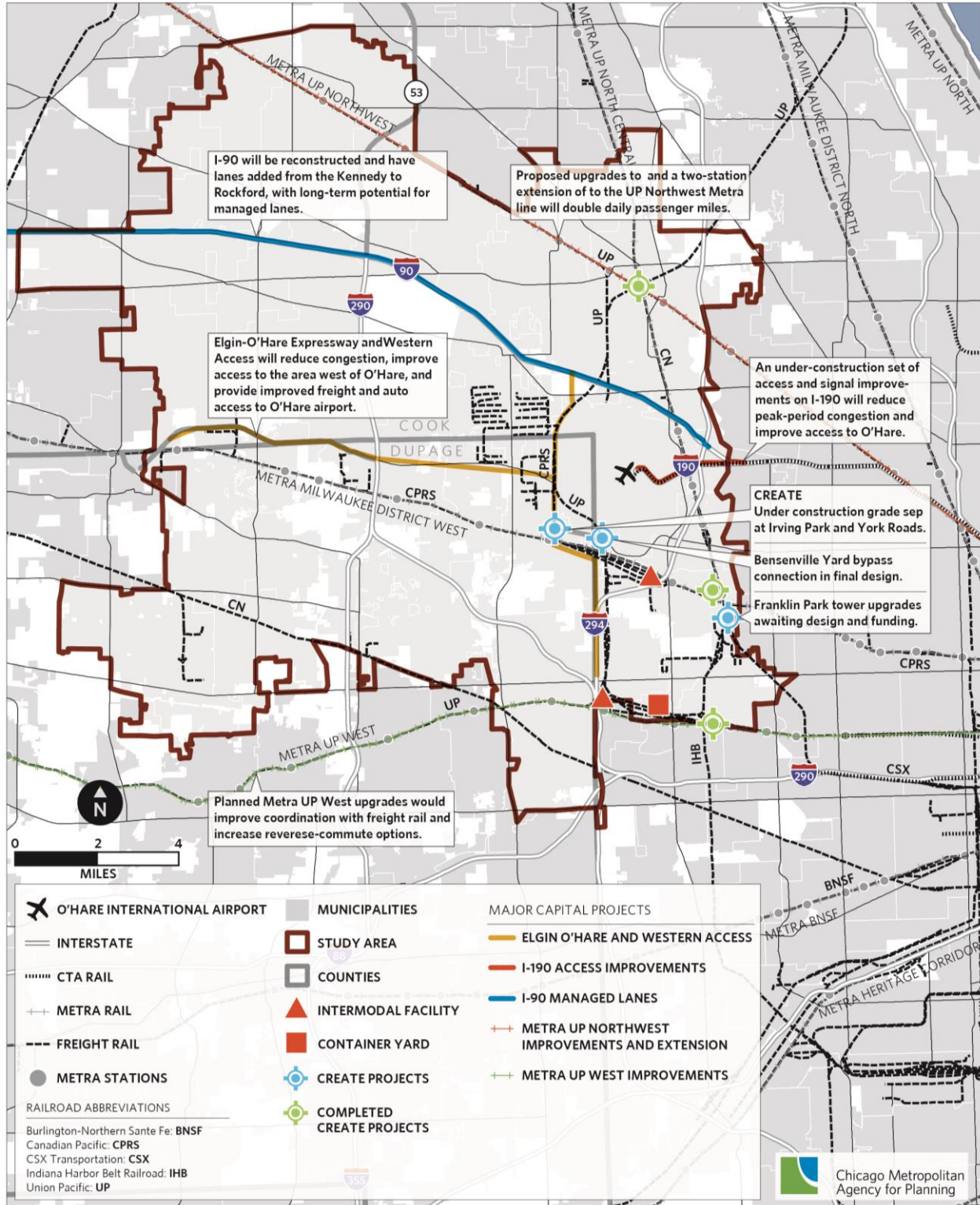
Upon completion, the EOWA will be capable of handling three times as many vehicles per day as local roads can currently carry. Travel delays on local roads will be reduced by an estimated 24 percent and the project will save drivers \$145 million annually by 2040.<sup>21</sup> Traffic on local roads will decrease, which will allow manufacturers to move goods more efficiently into and out of the study area.

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<sup>21</sup> Illinois Department of Transportation, "Elgin O'Hare Western Access Project Overview." See <http://tinyurl.com/bfd4z97>.



Figure 14. Existing, planned and underway major transportation facilities in the O'Hare Subregion



Source: CMAP analysis of Illinois Department of Transportation, Illinois Tollway, Metra, and CREATE data, 2014.

The EOWA is also projected to spur redevelopment in the study area. The Elgin O'Hare Western Bypass Advisory Council's final economic impact analysis projects that nearly 10 million square feet of new office, retail, and industrial space will be developed as a result of the construction of the EOWA and modernization of O'Hare airport.<sup>22</sup> Several municipalities will gain new direct access to the airport and/or the EOWA, which could spur new development. In a separate analysis, AECOM estimates that the OMP and EOWA have the potential to drive \$3 to \$6 billion in new construction investment in the northeastern portion of Bensenville alone.<sup>23</sup>

In addition to the EOWA, reconstruction and lane additions on the Jane Addams Tollway (I-90) will also improve expressway access in the study area. The Tollway has already begun work on this project, which will rebuild and widen the Jane Addams from the Kennedy Expressway (I-90 east of O'Hare) to I-39 in Rockford.<sup>24</sup> The project also includes installation of a widened inside lane and shoulder to accommodate the potential for future transit opportunities like Pace's bus-on-shoulder project on I-55.<sup>25</sup> The project will be completed in 2016.

Finally, arterial roads in the study area provide a critical network for accessing the area's freight and industrial facilities. These roads face significant congestion from through-traffic, especially along York Road and near the western side of O'Hare Airport. The planned expressway improvements will address congestion issues by moving some traffic onto those facilities, making travel easier for cars and trucks on arterial roads in the study area.

### **Freight rail**

The study area contains roughly 170 miles of freight lines, including three Class I railroads, two Class III lines, one belt line, and one short line. Rail is generally used to transport lower-value goods over a longer distance. For example, estimates show that most goods need to move a minimum of 500 to 600 miles in order for rail to be price competitive with trucking.<sup>26</sup>

The Class I railroads in the study area include the Canadian Pacific (CP) railroad, which serves CP freight trains, Metra's Milwaukee District-West (MD-W), North Central Service (NCS), and Union Pacific (UP) Northwest trains; Canadian National (CN) railroad, which serve CN freight trains as well as the NCS; and UP railroad, which serves UP freight trains. Indiana Harbor Belt's Class III railroad serves IHB freight trains. The study area also contains the Chicago Terminal Railroad short line. The most heavily used rail line in the area is the CP, which runs north from the Elk Grove Village and Bensenville border through Des Plaines.

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<sup>22</sup> Northwest Municipal Conference meeting notes from January 24, 2013.

<sup>23</sup> AECOM, "Village of Bensenville Comprehensive Economic Development Strategy," 2013. See <http://tinyurl.com/d2uswf9>.

<sup>24</sup> For more information, see the Tollway's Jane Addams Memorial Tollway site at <http://tinyurl.com/alfxy9f>.

<sup>25</sup> Pace instituted a bus-on-shoulder pilot project on I-55 in 2011, and, in April 2014 the Illinois General Assembly House approved a measure to make the program permanent. The measure is awaiting review by the General Assembly Senate.

<sup>26</sup> National Center for Freight and Infrastructure Research and Education, "Logistics for the Public Sector Training Course." See <http://tinyurl.com/7aetewk>.





Rail congestion in the study area and region is a serious concern. In order to address increasing rail congestion problems, key rail stakeholders in the Chicago region have come together and formed the Chicago Region Environmental and Transportation Efficiency (CREATE) program. CREATE is a public-private partnership of private railroads, the U.S. Department of Transportation, the Illinois Department of Transportation, the Chicago Department of Transportation, and Metra. The program aims to decrease rail congestion and vehicular congestion caused by rail traffic through \$3.2 billion in various projects including flyovers, grade separations, improved signalization, and modernization of equipment.<sup>27</sup> The O'Hare subregion contains six CREATE projects.

The most critical CREATE program project in the study area will address road congestion caused by at-grade rail traffic at the intersection of Irving Park Road and York Road. The project will create a grade separation for two sets of railroad tracks that currently cross Irving Park Road at grade and create significant track and auto backups. Securing funding for CREATE projects remains an important regional need. To date, less than one-third of the program's funding needs have been secured. While the majority of CREATE projects in the study area were small, low-cost improvements that have been completed or are underway, there are still substantive needs to complete the program and improve flows to and from the study area.<sup>28</sup>

Finally, the rail lines that traverse the subregion also share substantial sections of track with Metra passenger rail lines. As a result, there are recurring conflicts between these modes. A third track is planned for the UP West line within Elmhurst to provide additional capacity and address some of these conflicts.<sup>29</sup>

### ***Intermodal facilities***

The study area contains intermodal facilities in Franklin Park and Northlake, as well as a container yard in Melrose Park. Intermodal facilities allow shipping containers to be moved between rail and truck, allowing for multi-modal shipments which reduce transportation costs. The Chicago region is the largest intermodal container handler in the Western Hemisphere. Nearly half of all intermodal freight movements in the nation originate, terminate, or pass through the region.<sup>30</sup>

The CP Railway Bensenville Intermodal Facility is located just south of O'Hare International Airport in Franklin Park. Activity at this intermodal facility has recently increased since CP consolidated operations from the Schiller Park Intermodal Facility into the Bensenville Intermodal Facility. This yard serves as a conversion point for larger, west coast freight rail

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<sup>27</sup> For more information about the CREATE program, see <http://www.createprogram.org/>.

<sup>28</sup> For a full list of CREATE projects in the Chicago Metropolitan area, see <http://tinyurl.com/l3wlg6l>.

<sup>29</sup> CMAP, 2013. Universe of Major Capital Projects, <http://tinyurl.com/kxm9ra4>.

<sup>30</sup> OECD, 2012, "The Chicago Tri-State Metropolitan Area, United States," <http://tinyurl.com/ldpburd>.



configurations and smaller, east coast configurations. In addition, smaller trains are sent to local rail operators like the Chicago Terminal Railroad, which serves the O’Hare subregion’s spur network. The UP Global Two Intermodal Facility is located in Northlake, near the southern edge of the study area. Some of the goods moving into this facility are transferred to local truck operators and distributed throughout the O’Hare subregion and CMAP region.<sup>31</sup>

The presence of these intermodal facilities is a regional asset, though they also provide a smaller benefit to O’Hare subregion manufacturers that use local rail spurs and/or truck freight. Several establishments in the study area have direct access to rail and the intermodals via short lines and a beltline, but their use can be problematic for new tenants due to the condition of many of the spurs, the lack of proper access from adjacent buildings, and/or the inability to store the quantity of goods received in a typical rail delivery.

### ***O’Hare airport***

O’Hare airport, the world’s second busiest in terms of total arrivals and departures, is located on the eastern border of the study area. Manufacturing establishments in the area the producing high-value globally-traded goods benefit from locating near O’Hare, which is the sixth largest cargo airport in the U.S. in terms of total landed cargo weight. In 2012, O’Hare International moved 4.6 billion pounds of cargo, an increase of over 13 percent since 2001.<sup>32</sup> In addition to being a center for freight movement, the airport’s location is convenient for the subregional firms bringing in visitors.

The O’Hare Modernization Program (OMP) has been underway since 2003. With the exception of the proposed western terminal, the project is expected to be completed by 2015. The western terminal is currently unfunded and does not have an anticipated completion date. The OMP includes the reconfiguration of the airfield by reorienting and extending runways, adding a new terminal, and adding other supporting infrastructure to create a more modern and efficient airport. The airport will grow in size by a total of 433 acres upon completion. The project is projected to add \$18 billion in annual economic activity to the region.<sup>33</sup>

In addition to runway and terminal improvements, the OMP includes the development of a \$200 million, 82,000 square foot cargo center designed to improve and expand the airport’s cargo operations. The added capacity of this project will allow for greater exports—an important goal of the nation, state, and region.

### ***Transit infrastructure***

The subregion is home to a wealth of transit assets, including three Metra lines and numerous Pace bus routes. In many cases, these services provide critical access to freight and manufacturing jobs. But, local communities and stakeholders have indicate that, as with many

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<sup>31</sup> CMAP interview with the Chicago Terminal Railroad on March 20, 2014

<sup>32</sup> Federal Aviation Administration air cargo estimates, <http://tinyurl.com/pe9tpj3>.

<sup>33</sup> For more information, <http://tinyurl.com/kwm5ml8>.



suburban areas, it can be difficult to provide last-mile connections from transit assets to employment areas.

Substantial planning work has been completed to address this issue. Rolling Meadows, Schaumburg, Addison, Hoffman Estates, and Melrose Park have all recently completed studies that address transit and pedestrian connections, coordination of multiple transit services, provision of shuttle services, and other initiatives to improve access in key corridors.

As with other transportation assets, opportunities for improvement are multijurisdictional in nature. This is particularly true due to the size of the freight and manufacturing areas in the subregion. Continued coordination among subregion communities on transit access will improve the competitive position of the corridor over the long term.

## **Infrastructure support for the freight and manufacturing cluster**

The confluence of transportation infrastructure in the study area attracts a large number of users which create significant traffic. The impact of this traffic is of considerable concern to the local governments within the cluster. Congestion slows the movement of people and goods through the region and erodes a key competitive advantage for businesses located in the study area. Heavy traffic places significant wear on the study area's infrastructure, which results in high maintenance costs for local governments. Furthermore, disparate local regulation of truck traffic can create problems for firms moving goods into and out of the study area.

In addition, the subregion is adjacent to the Des Plaines River and contains a number of areas within the floodway. Local stormwater infrastructure is also not fully sufficient to address storm events, leading to consistent flooding problems. Drainage infrastructure in some areas is in disrepair or is insufficient to address stormwater flows in low-lying areas outside of the floodway. In some cases, local manufacturers have installed pumps and other systems to manage chronic flooding and seepage.<sup>34</sup> While some municipalities have developed strategies to address flooding problems, the current situation, particularly for communities south of O'Hare, is problematic. Stormwater flows cross municipal boundaries, and improvements in one community have the potential to affect adjacent communities.

### ***Stormwater and flooding***

Portions of the study area experience significant and chronic flooding issues. In response to these problems, counties and municipalities in the study area have increased stormwater mitigation requirements and constructed various improvements to reduce flooding. But, the subdivision of the study area into two counties and 24 municipalities somewhat complicates management of storm water issues. For example, the Des Plaines River, Salt Creek, and the twelve watersheds that traverse the study area link the impacts of stormwater run-off in one municipality directly or indirectly. Therefore, challenges and solutions associated with

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<sup>34</sup> Per CMAP interviews with local real estate brokers, February 2014.



stormwater management are also multijurisdictional in nature and require close coordination among neighbors.

Municipal stakeholders within the study area have expressed the negative impacts of stormwater run-off from upstream communities and the need for inter-jurisdictional collaboration. In particular, past stormwater management improvements have served to move flooding issues from one community to another.

Some manufacturers in flood-prone portions of the study area with insufficient or poorly-maintained local stormwater systems have installed their own pump systems and flood control improvements. This can, however, move the problem to adjacent properties. In response to flooding concerns, DuPage County recently passed a Stormwater and Flood Plain Ordinance, which impacts industrial development via increased stormwater mitigation requirements for new developments and limits on outdoor storage. There was general consensus among real estate professionals that these changes can have significant impacts on the potential for industrial redevelopment and expansion in DuPage County because they reduce the buildable area of a site.<sup>35</sup>

Stormwater infrastructure conditions and levels of service vary by municipality from poor to fair. As with road conditions, some municipalities have not had sufficient funds to modernize or reconstruct their existing stormwater systems. Upgrading stormwater infrastructure to address chronic flooding issues, particularly in the southeastern portions of the study area, will be a key component of maintaining the area's competitive advantage in the long-term. To this end, a number of study area municipalities have recently undertaken programs to assess or improve stormwater management. Recent measures within the study area to fund stormwater system improvements include:

- Special Service Areas (SSAs), e.g., Village of Bensenville
- Stormwater utility fees, e.g., Village of Hoffman Estates
- General obligation bonds, e.g., Village of Elk Grove Village
- IEPA grants, e.g., Village of Franklin Park
- Prioritization within Capital Improvement Plans (CIP), e.g., Village of Carol Stream

But, these improvements have been undertaken at the municipal level to address problems that cross many jurisdictions. Furthermore, the subregion crosses county boundaries and, as a result, stormwater management jurisdictions. Based on interviews with municipalities, some chronic stormwater issues are due to location in the floodway, while others are due to localized drainage issues. However, analysis and identification of the key drivers of flooding and identification of which jurisdictions can appropriately address the flooding problems has not yet occurred.

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<sup>35</sup> CMAP interviews with local real estate brokers, March 2014. The DuPage County stormwater ordinance can be found at <http://tinyurl.com/l2d3lzk>, and the Cook County stormwater ordinance can be found at <http://tinyurl.com/mo2f64p>



Within Cook County, the Metropolitan Water Reclamation District of Greater Chicago (MWRD) can provide assistance to communities located in the floodway.<sup>36</sup> Similarly, DuPage County's stormwater management program also addresses regional overbank flooding, but not localized flooding and drainage issues. These actors have already planned for and completed numerous projects to address floodway issues in watersheds that travel through the subregion. For example, the Office of Water Resources within the Illinois Department of Natural Resources, the Natural Resources Conservation Service, and Cook County Metropolitan Water Reclamation District have constructed 9 flood control projects in the upper salt creek watershed and over 40 in the Lower Des Plaines River Tributaries watershed. The latter have been in partnership with U.S. Army Corps of Engineers and the DuPage County Stormwater Management Commission.<sup>37</sup> The MWRD indicates that five projects are in design or analysis phases within the study area.<sup>38</sup>

### **Congestion and aging infrastructure**

Road congestion within the study area is a problem that has become increasingly severe in recent years. Previous analysis performed for the EOWA route found that 86 percent of the interstates and primary roads in the area bounded by I-90 on the north, I-294 on the east, I-290/US20 on the south, and the western terminus of the existing Elgin O'Hare Expressway experience severe congestion.<sup>39</sup> The EOWA study concluded that, if no action is taken, businesses in the area will experience much slower future travel times.<sup>40</sup>

In addition to road congestion in the study area, regional freight rail congestion is also a concern. Users of the subregion's major short line (Chicago Terminal Railroad) must often deal with congestion caused by freight rail movement on rail lines owned by the UP and CP railroads. Traffic on these major lines in and around the subregion's intermodal facilities can impede the timely delivery of goods to rail users in Bensenville and Elk Grove Village, for example. The Chicago metropolitan area is the nation's largest rail bottleneck with average freight train speeds of 5 to 12 miles per hour.<sup>41</sup> Problems such as at-grade crossings, aging infrastructure, and the use of rail lines for multiple purposes cause congestion. At-grade

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<sup>36</sup> For more information on the services provided by the Cook County Metropolitan Water Reclamation District, see <http://tinyurl.com/oskhjsq>. For information about DuPage County stormwater services, see <http://tinyurl.com/tw7d4o>.

<sup>37</sup> Metropolitan Water Reclamation District of Greater Chicago. 2007. Cook County Stormwater Management Plan. See <http://tinyurl.com/mhps5p8>.

<sup>38</sup> See the MWRD's Engineering Design Projects mapping utility form more information on in-process projects at <http://gispub.mwrdd.org/ecpjs/>.

<sup>39</sup> Illinois Department of Transportation, "Elgin-O'Hare West Bypass Study: Tier One Final Environmental Impact Statement," 2013. See <https://www.dot.il.gov/desenv/Elgin-Ohare%20Final%20EIS/>.

<sup>40</sup> John Vickerman, "Rail Delivers Jobs and Drives Economic Development," The Rail Summit hosted by the Lakeshore Chamber of Commerce, Chesterton, IN, March 16, 2012.

<sup>41</sup> John McCarron and Jim LaBelle, "Critical Cargo: A Regional Freight Action Agenda for Jobs, Economic Growth, and Quality of Life in Metropolitan Chicago." *Business Leaders for Transportation*. 2002. See <http://tinyurl.com/kn23bfo>.



crossings in the study area are a serious concern for auto and freight traffic as modern trains carry a much larger number of cars and create significant delays.

Studies conducted by the Illinois Commerce Commission in 2011 show that the Village of Bensenville and City of Des Plaines experience significant vehicle delays due to at-grade rail crossings. Des Plaines ranks third in the region with 33 crossings delaying nearly 14,000 motorists on a typical weekday, and Bensenville ranks sixth with 12 crossings delaying approximately 4,000 vehicles.

Additionally, heavy truck traffic puts great stress on the study area's roads. This traffic leads to advanced deterioration of infrastructure and increases maintenance costs for local governments. A study conducted on road conditions in the Village of Franklin Park, for example, found that nearly all the roads in the Village's industrial areas were ranked as failed, serious, or poor condition, including key arterials. In addition, a recent CMAP study on the pavement conditions near the study area's intermodal facilities' (UP Global Two and CPRS Bensenville) access roads indicates that the entrances to both facilities have road segments rated at fair or worse condition.<sup>42</sup> Trucks have grown longer since the time many of the roadways in the study area were designed, and these roads are not wide enough to accommodate the turning radius of a modern truck. As a result, trucks often go over the curb, causing significant damage to road infrastructure.

While planned and underway projects like CREATE and the EOWA will provide significant congestion relief for the study area, many local roads still need to be upgraded to accommodate modern trucks and improve connections. Additionally, access to key facilities like the intermodal centers needs to be modernized. Many of these issues are within the control of multiple jurisdictions, and will require significant cooperation to be effectively addressed.

### ***Truck routing***

As with roadway condition and congestion issues, truck routing concerns cross many jurisdictions. The State of Illinois and local governments impose restrictions on trucking activity to mitigate the negative impacts of truck traffic and direct trucks to roads that can better accommodate them. Local jurisdictions can take two approaches to truck routes: designating truck routes and imposing restrictions on the weight or dimensions of a truck.

In Illinois, trucks are allowed on any state or county highway unless the road is specifically limited by a weight or size restriction. Depending upon the size and weight of the truck, trucks may also travel up to one mile from any interstate interchange and up to five miles from a designated truck route. Local jurisdictions may impose both weight and dimension restrictions and/or require permits for trucks that do not meet these restrictions. This complicated system makes truck travel in the subarea and region difficult and can create circuitous routes. While CMAP is participating in an effort to allow streamlined truck permitting for local jurisdictions,

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<sup>42</sup> Chicago Metropolitan Agency for Planning, "Intermodal Freight Connectors: Pavement Condition Update," 2011. See <http://tinyurl.com/lxo33g9>.



disparate truck and permitting regulations have a strong impact on efficient movement of freight in the study area.

Truck restrictions and regulations are common in the study area. In most cases, local truck regulations and restrictions are implemented without collaboration between municipalities. Streets designated as a truck route in one municipality may be truck-restricted route in another, creating access challenges and confusion for truck drivers. In addition, special permits may be required by the counties and/or municipalities, requiring manufacturers, truckers, or logistics companies to apply and pay for a series of permits. Figure 15 shows truck restrictions and designated truck routes in the study area. However, as noted, trucks may also travel on other county and local roads within varying limits.

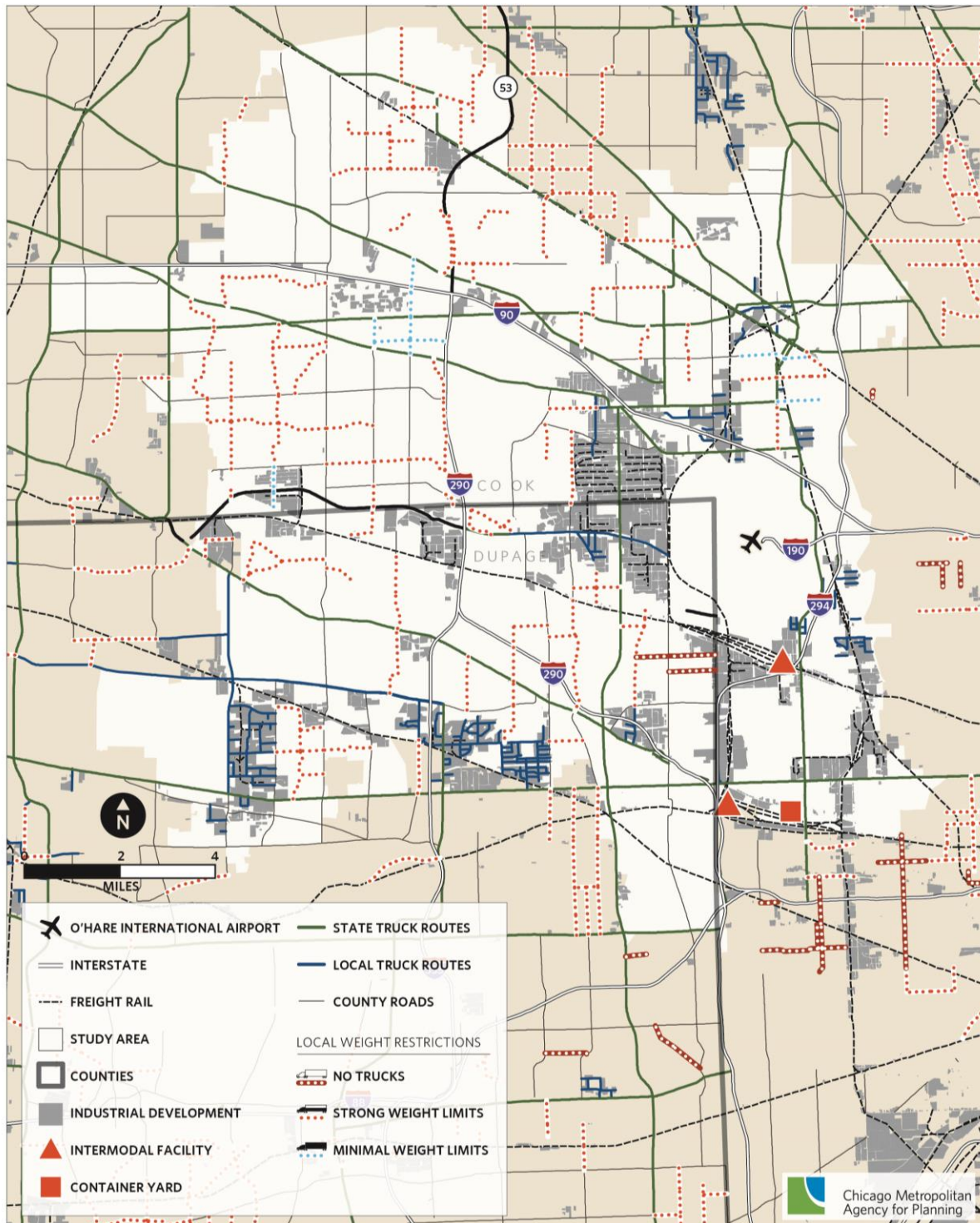
The disjointed regulation of truck routing erodes the study area's competitive trucking advantage, making it difficult for trucks to move through the study area and adding to congestion problems. By regulating against truck traffic rather than planning for it on a multijurisdictional scale, municipalities run the risk of alienating local manufacturers or forcing trucks to travel down streets with inadequate public infrastructure. But, truck traffic can impose significant costs on municipalities in the form of increased wear and tear on roads, generating the need to build roads to a higher standard to bear heavier loads, and through increased noise and pollution. Local regulations seek to limit these negative impacts and minimize local costs.

As described above, the condition of many of the study area roads in key industrial areas is poor. In some cases, municipalities may limit trucks on a roadway to stop further degradation. In other cases, municipalities have put in place restrictions because they serve as a truck route for development in adjacent jurisdictions. But, coordinating truck routing across jurisdictions can serve to funnel truck traffic to fewer routes and allow municipalities to reduce the negative externalities imposed by more dispersed truck traffic.

Municipalities should work together to plan for and address truck routing issues throughout the study area. This should include rationalizing existing restrictions to provide more direct access to industrial areas, identification of key infrastructure upgrades and connections needed to create more direct routes, prioritization of capital infrastructure needs, planning for funding of improvements, and integration of this plan into local comprehensive and capital improvement planning. Planning for truck routing should be balanced with local desires to preserve community character and address safety concerns.



**Figure 15. O'Hare subregion local truck routes and restrictions**



In Illinois, roads are assumed to carry 80,000 lbs (the weight of a fully-loaded semi truck) unless they have signage restricting weight. Many county roads are not designated truck routes, and can carry trucks, although they may have some level of dimension or weight restriction. For weight restrictions, CMAP categorized local government data on weight restrictions into three categories. Roads listed as no trucks or allowing less than 5,000 lbs were categorized as "No Trucks." Roads allowing weights from 5,000-60,000 lbs were categorized as "Strong Weight Limits." Roads allowing from 60,000 to 78,000 lbs were categorized as "Minimal Weight Limits." Overweight trucks would be required to obtain permits from affected jurisdictions.

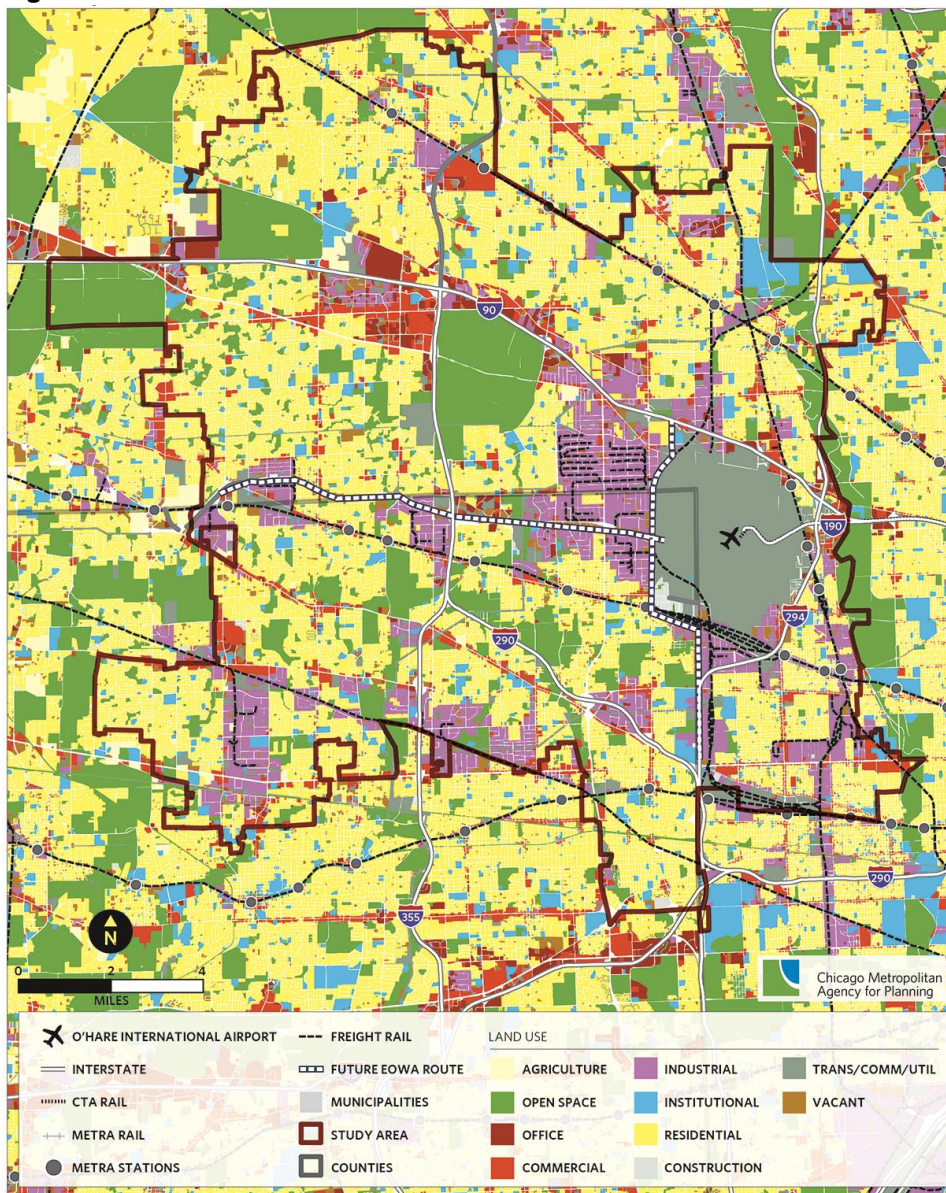
Source: CMAP analysis of municipal and county codes, Illinois Department of Transportation data, and Google Earth data.



# Land Use and the Freight and Manufacturing Cluster

While the study area is a major center for industrial activity in the region, it also contains a major office cluster and the largest retail shopping center in the region. Municipalities located adjacent to O'Hare Airport are characterized by high concentrations of industrial activity while those located west along I-90 have more office and retail land uses. Many of the interior municipalities in the study area experienced industrial building booms in the 1950s due to the construction of O'Hare Airport.

**Figure 16. Land use in the O'Hare area**



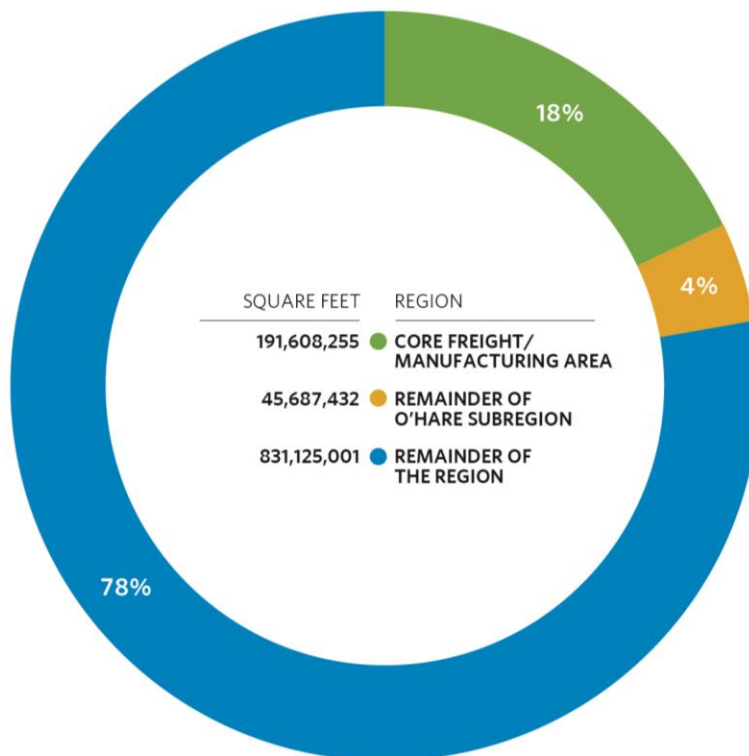
Source: CMAP analysis of Cook and DuPage County Assessors data, 2010.

The study area has many qualities that attract freight and manufacturing firms. Interviews with real estate brokers in the study area enforce the importance of assets identified elsewhere in this report. The study area’s access to an educated/skilled labor force, its status as a major industrial and freight hub, and proximity to major transportation assets make it a desirable place to locate. Many manufacturers in the study area work with one another and form localized supply chains to minimize freight costs, and freight forwarders find the area’s rail, road, and air infrastructure to be advantageous.

## Industrial development in the study area

The strength of the manufacturing and freight cluster in the study area is reflected by real estate trends. The cluster contains over 237 million square feet of industrial space, equal to approximately 22 percent of the total industrial space in the region. Industrial development is most concentrated in the areas that are the core of freight and manufacturing employment near O’Hare. This portion of the study area contains approximately 192 million square feet of industrial space, which represents 18 percent of the industrial space in the cluster and region.

**Figure 17. Distribution of industrial/flex rentable building area in the study area and CMAP region**



Source: CMAP analysis of CoStar data, first quarter 2014.



This significant concentration of industrial space in the study area and its core developed due to the study area's location at a major confluence of the region's air, expressway, and rail systems, providing connections to regional, national, and international destinations.

The study area contains some of the most valuable industrial land in the region. However, much of the study area's building stock is older and in need of modernization. As such, it has many of the issues that are common to older industrial areas. These include lack of adequate ceiling heights for modern industrial production, antiquated fire sprinkler systems that limit the type of products that can be stored, and undersized truck docks that do not afford easy access to larger, modern trucks. Many municipalities within the study area are actively planning for redevelopment, particularly in light of the potential offered by the EOWA.

### ***Industrial building stock***

The vast majority of buildings in the study area are considered to be second or third generation. Despite the physical drawbacks of these older buildings, industrial vacancies in the area are relatively low and land prices are high, suggesting that industrial users are willing to forego some modern amenities not available in the study area in order to take advantage of other benefits that the area provides. While the occupations in the freight and manufacturing cluster are diverse and may occupy a mix of office or industrial space, the latter is the most prevalent.

According to CoStar, the study area has approximately 5,130 industrial buildings. The majority of these buildings are class B and C, reflecting their age, size, and lack of modern design and amenities.<sup>43</sup> Most of the industrial buildings are small, ranging from 10,000 to 50,000 square feet in size. Median year constructed is 1976. Total industrial space has remained relatively constant over the last decade, with a net decrease in total rentable building area (RBA) of less than 1 percent. This decline is likely due to the normal demolition and redevelopment of properties at lower densities. Modern industry requirements as well as building, stormwater and zoning regulations mean that most industrial redevelopment is likely to reduce total square footage on a parcel.

While the study area's total RBA remained relatively constant from 2003-13, the Chicago region's total RBA increased by approximately 4.8 percent. This growth is a result of newer industrial developments built in the region's outer areas, such as along I-80 near Joliet and I-88 near Aurora. Many cost-sensitive manufacturers or those seeking a larger footprint have moved out to these corridors over the last several decades. Land values and wages are lower in these areas, and there are fewer impediments to developing larger and more modern facilities.

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<sup>43</sup> Class A buildings are generally defined as the highest quality buildings available, providing exceptional accessibility and modern amenities while attracting above average rents. Class B buildings are considered to be more utilitarian in design and may lack modern amenities. Class B buildings tend to compete on price to attract tenants. Class C buildings are generally older buildings which have not been as well maintained over time as Class A or B buildings. Class C buildings may have inferior systems (electrical, plumbing), and depend on lower prices to attract tenants.

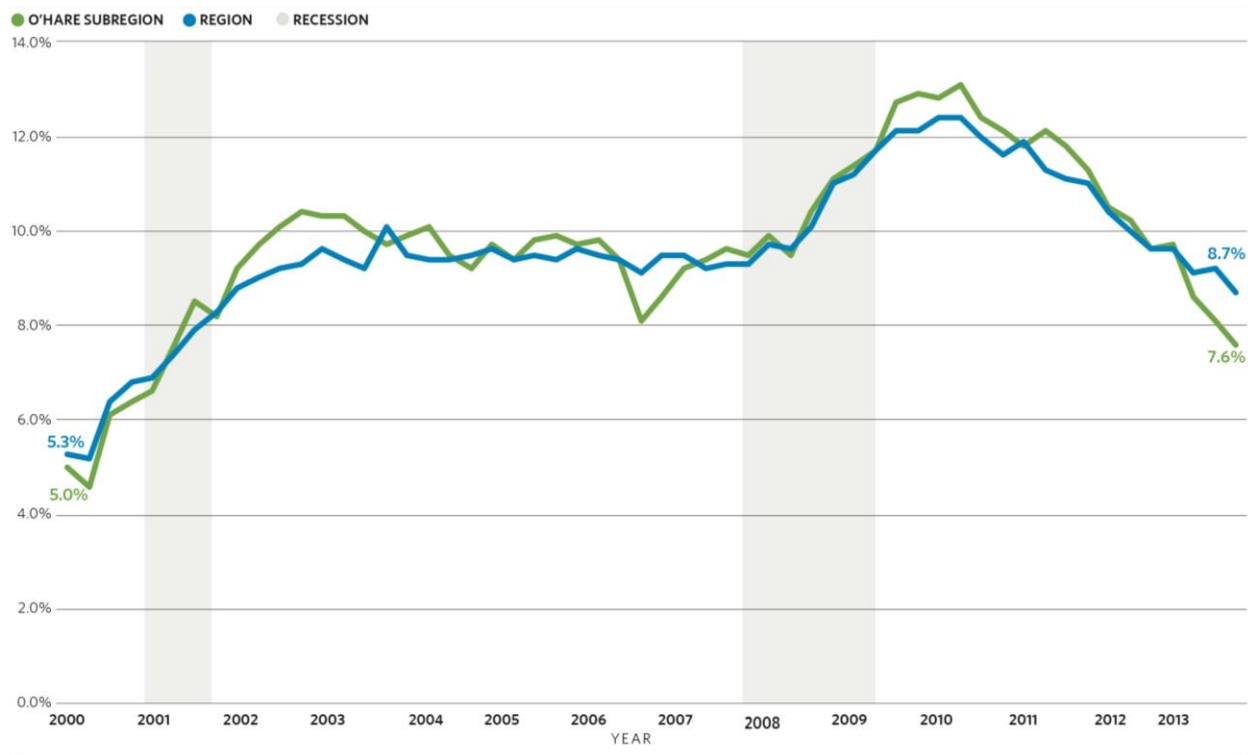


## Vacancy and net absorption

Despite the age and configuration of building stock, industrial space within the study area is competitive with the rest of the region. Over the last decade, the cluster's vacancy rate has largely shadowed the region's, with vacancy decreases in both geographies since 2003. Possible factors contributing to the relatively high 2003 vacancy rates include a decline in manufacturing industry, and an oversupply of new industrial development in the early 2000s which failed to be absorbed.<sup>44</sup>

Following a peak in 2002, industrial vacancy rates decreased at a moderate rate. But, regional and study area rates did not fully recover from the 2001 recession. With the onset of the Great Recession, vacancy rates rose dramatically starting in 2008, with rates peaking at 12 to 13 percent in 2010. Since 2010, rates have declined to their lowest level in the past decade and have finally matched 2001 levels. The outlook for the region, and especially the cluster is optimistic. The planned infrastructure improvement projects such as the O'Hare Modernization Program and EOWA have and will continue to enhance the desirability of the study area allowing it sustain its competitive position in the region.

**Figure 18. Study area and CMAP region industrial vacancy rates, 2000-13**



Source: CMAP analysis of CoStar data.

<sup>44</sup> CMAP analysis of CoStar data.



Net absorption data indicate that the cluster has also been experiencing significant development and leasing activity. Net absorption is the total change in the amount of occupied space in the market during a defined period of time after accounting for new construction, demolition, leases renewals and expirations. Net absorption in the study area has generally been positive and significantly high since mid-2010. This is partially attributable to market recovery, as space vacated during the recession obtains tenants. Core communities such as Elk Grove Village, Bensenville, and Wood Dale have also experienced a surge of redevelopment. These communities, specifically Elk Grove Village, are experiencing high levels of activity as companies redevelop aging industrial facilities. Elk Grove Village has proactively planned for and marketed redevelopment opportunities, and other communities have begun to capitalize on the opportunities offered by the EOWA.

In addition to industrial square footage, the study area contains a large stock of office development equivalent to approximately 10 percent of the region's total. But, vacancy rates are substantially above industrial vacancy rates. CMAP analysis indicates that the region has yet to recover from increased vacancy resulting from the 2001 recession, and that the O'Hare subregion consistently maintains higher office vacancy rates than the region as a whole. Current office vacancy for the subregion is 19.4 percent, as compared to 14.4 percent in the region. This reflects a larger trend of higher office vacancy rates in the region's suburban areas.

## **Property taxes and property classification**

A concern expressed by brokers and municipalities in the study area is the difference in total property taxes in Cook and DuPage counties. This difference is built in part upon Cook County's use of classification in its assessment process. The county assesses residential properties at 10 percent of their market value, and industrial and commercial properties at 25 percent of their market value.

Cook County's use of property tax classification leads to higher assessed values and property taxes for industrial and commercial properties on the Cook County side of the study area. This distorts development patterns as businesses prefer to locate in the DuPage portion of the study area if all else is equal. Cook County's 6b property tax incentive program aims to mitigate the effects of this discrepancy by providing short-term tax relief for businesses. The program does not, however, address property tax disparities over the long term.

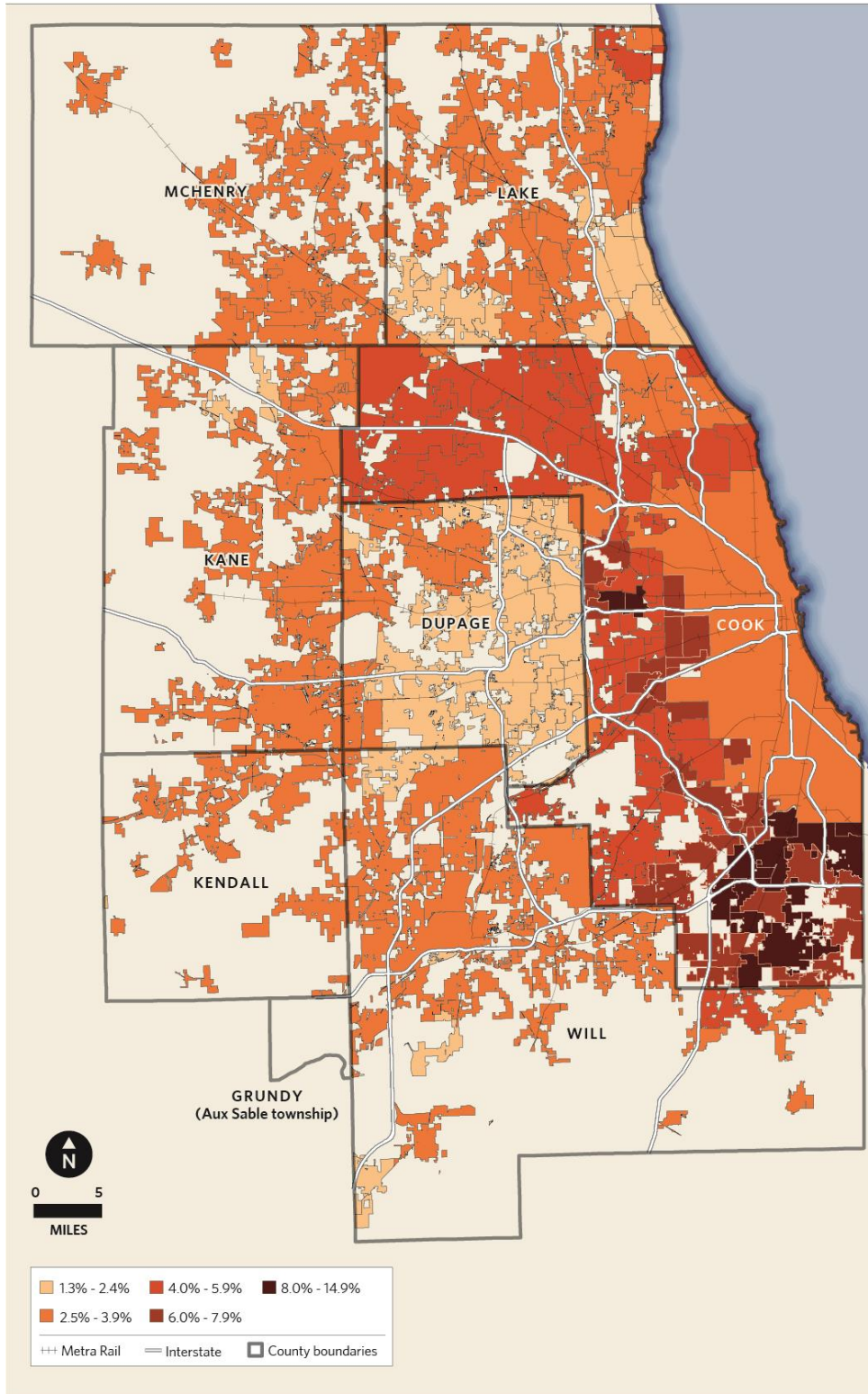
Prior CMAP analysis of this issue indicates that the contrast in property tax rates is stark for DuPage and Cook County municipalities. In 2009 in the Cook County portion of the study area, industrial properties experienced an effective property tax rate on market value of 4.0 to 5.9 percent, depending upon the jurisdiction. In the DuPage portion of the study area, the effective rates were generally 1.3 to 2.4 percent.<sup>45</sup> This creates a disincentive to locate on the Cook County side of the study area as well as a significant impediment to redevelopment and reinvestment in a major portion of the study area.

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<sup>45</sup> For more information, see CMAP's website on property tax classification at <http://www.cmap.illinois.gov/economy/tax-policy/cook-property-tax-classification>.



**Figure 19. CMAP region effective property tax rates, 2009**

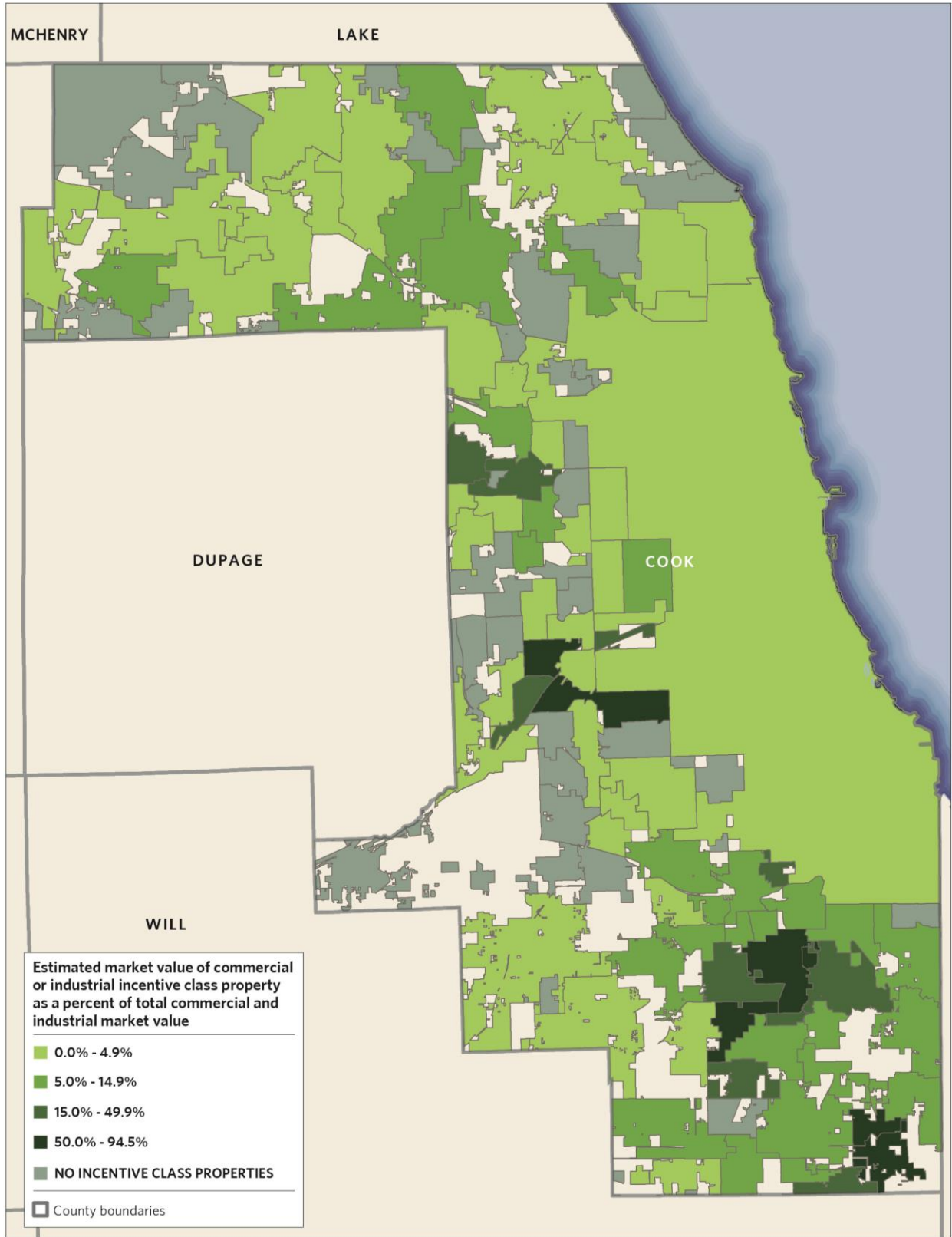


Source: Various County Clerk offices.

Note: These rates equal the property tax extension as a percent of market value. These composite rates are inclusive of rates levied by counties, municipalities, school districts, and special districts.



**Figure 20. Prevalence of commercial and industrial property tax incentive classes in Cook County municipalities**



Source: CMAP analysis of Cook County Assessor and SB Friedman Development Advisors data.

Property tax classification affects many communities on the border of Cook County, rather than just those in the study area. At the recommendation of GO TO 2040, [CMAP's Regional Tax Policy Task Force](#) analyzed the impacts of property classification.<sup>46</sup> The task force recommended that classification be phased out slowly over time, to allow residential property owners time to adjust to the increases in their total property taxes.<sup>47</sup>

## Market values and redevelopment

The study area's access advantages produce high market values which cause difficulty for companies seeking to build new facilities and prices cost-sensitive manufacturers out of the area. Industrial land in and around O'Hare is some of the most valuable in the Chicago metropolitan area, and building occupancy has remained high despite declines in manufacturing in recent years. In most cases, the high prices for land in the study area make it cost-prohibitive for developers to tear down existing buildings and build new. Thus, tenants and buyers looking to move into the area tend to modify existing structures to meet their needs.

In interviews, brokers indicated that pre-recession land values reached a somewhat prohibitive level, with sales prices at heights that only institutional investors and larger development firms would be willing to pay. The Great Recession moderated these increases, but development in the study area is costly due to the typical costs of any type of redevelopment: assembly of multiple smaller parcels, the need to meet modern parking and stormwater requirements, and the smaller ratio of developable square footage per acre of land in new development.

Figure 19 shows market value per square foot in the study area for both commercial and industrial property. Interviews with brokers indicate that, above \$10 to \$15 per square foot of land, costs of redevelopment in the study area become prohibitive as compared to market returns. This map indicates that industrial properties closer to the western edge of O'Hare are more likely to be above the \$15 threshold. Over time, this dynamic may encourage the transition of industrial land to other uses such as office, which can afford higher initial land prices and already has higher land values in the study area. While Federal Aviation Administration height limits near O'Hare will constrain this transition to some extent, it will be critical to plan for conservation of key industrial areas and transition of those that are not as central to the cluster.<sup>48</sup>

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<sup>46</sup> Regional Tax Policy Task Force advisory report to the CMAP Board (<http://tinyurl.com/ocbbwus>).

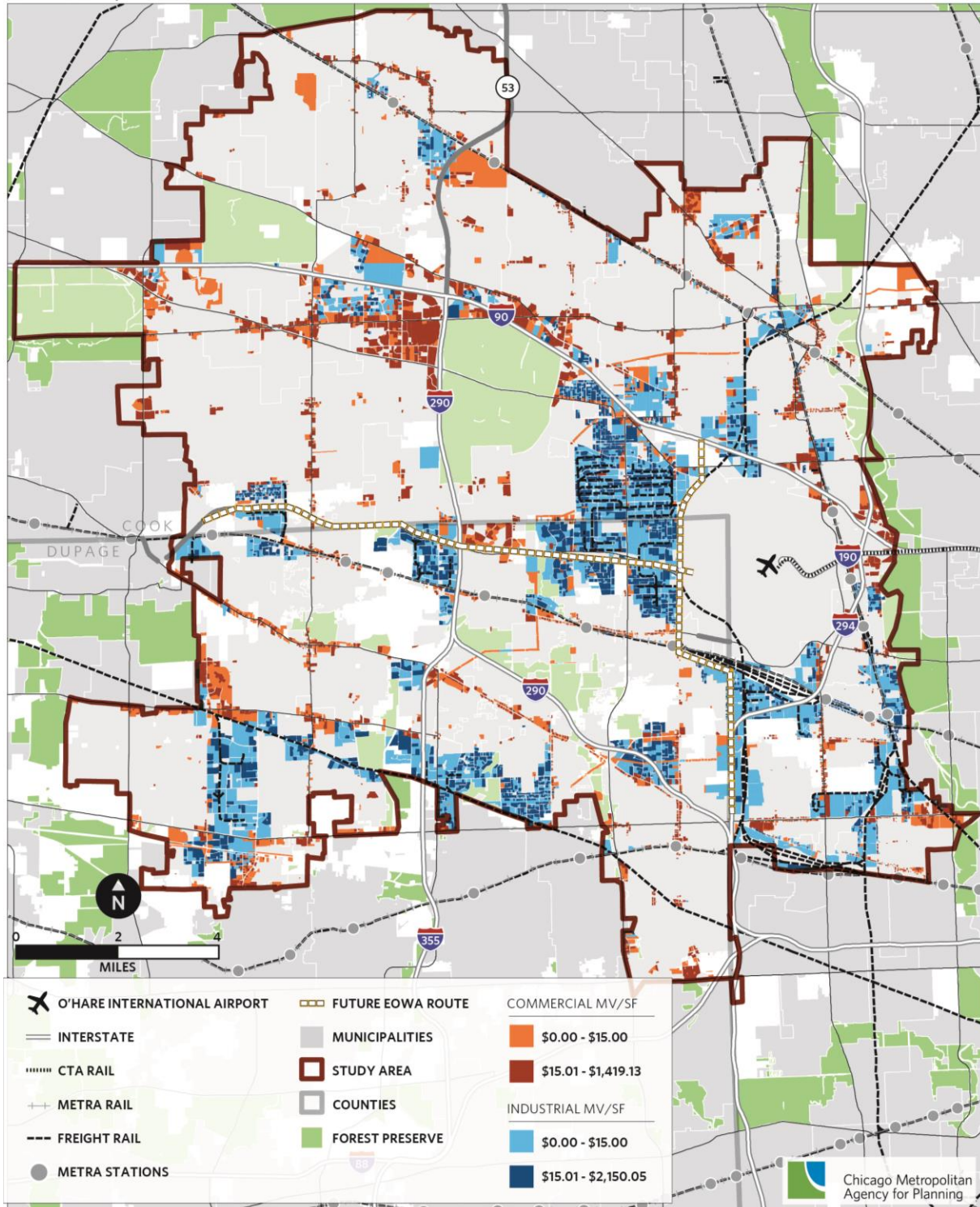
<sup>47</sup> CMAP analysis of Cook County property taxes (<http://tinyurl.com/kgpqeaj>).

<sup>48</sup> The FAA requires developments within 20,000 feet of a runway to meet varying height requirements based on their distance from the runway and relationship to flight paths.





Figure 21. Industrial and commercial property market values in the study area



Note: The study area boundary is based on ZIP codes due to the availability of economic data. Municipalities are shown for reference.

Source: CMAP analysis of Economic Modeling Specialists International (EMSI), U.S. Census, and Illinois Department of Transportation data.

## Local planning initiatives

Local land use planning and zoning play an important role in supporting the success of the freight and manufacturing cluster. Interviews with brokers suggest that study area municipalities are open to working with local businesses to encourage development and reinvestment in manufacturing and freight activity. In addition to working with local businesses, study area communities have continually explored new opportunities to improve their competitive advantage within the O'Hare study area. This has taken the form of short-term strategic plans, long-range comprehensive plans, economic development incentives, regulations, and new funding opportunities. Many municipalities also offer programs like assistance with energy efficiency upgrades, façade upgrades, or larger redevelopment projects in order to encourage investment in their existing industries.

The following table summarizes several key initiatives related to freight and manufacturing in the study area. This list is not comprehensive, but provides an overview of the range of options being explored or implemented at the municipal level. A number of municipalities are seeking to understand the impact of the OMP and EOWA, and find ways to best take advantage of the opportunities they offer. While these are individual community plans, most have noted the need to work collaboratively to sustain the success of the area.

Communities have expressed a desire to provide a modern industrial building stock, but also to diversify their land use base by transitioning some areas to office and commercial uses. While the freight and manufacturing jobs generally found in industrial buildings often provide a large regional economic benefit, the industrial building stock frequently provides a lesser fiscal benefit than retail or office uses might.<sup>49</sup> In combination with the high cost imposed by frequent heavy truck traffic, this lower fiscal benefit can serve as a disincentive for communities with other development options. As a result, communities with new expressway access are not only planning for new industrial development, but also a diversification of land uses to office and retail development. While this has the potential to provide a more positive fiscal outcome for local municipalities, it may also limit industrial square footage in an area that is critical to the success of the region's freight and manufacturing cluster.

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<sup>49</sup> For more information, see CMAP's report on the fiscal and economic impacts of local development decisions at <http://tinyurl.com/od2ktdn>



**Figure 22. Planning studies affecting the study area freight and manufacturing clusters**

STUDIES COMPLETED/UNDERWAY	COMMUNITIES INVOLVED	DESCRIPTION
Comprehensive Economic Development Strategy (CEDS)	Bensenville	The goal of the CEDS was to assess existing economic conditions and evaluate how the Village could capitalize on the O'Hare Modernization Project and the Elgin-O'Hare Western-Access. The Plan outlines recommendations to help enhance the Village's fiscal position, maximize economic opportunities created by the OMP and EOWA, sustain industrial growth, and enhance residents' quality of life. Two sub-areas in the study are the northern industrial area and eastern industrial area in Bensenville.
Industrial Commercial Revitalization Master Plan	Elk Grove Village	The master plan includes an analysis of existing physical and infrastructure conditions in the Village's industrial areas and recommendations to improve the same over the course of the next decade. One of the goals of this initiative was to set apart the industrial businesses in Elk Grove Village from neighboring communities and identify improvements required to take advantage of the planned OMP.
Franklin Park O'Hare Industrial Corridor Plan	Franklin Park	This ongoing study will outline strategies to optimize the Village's western industrial corridor and its proximity to the planned EOWA project and O'Hare Airport. The Plan will address issues of infrastructure, physical improvements, land use, and workforce development so to promote industrial retention, reinvestment, and redevelopment.
Thorndale Corridor Master Plan	Wood Dale	The City of Wood Dale created a master plan for the area adjacent to the planned EOWA corridor. The EOWA will impact industrial businesses significantly and the master plan took a proactive look at methods to take advantage of this project. This plan envisions a major transition to office uses for parcels directly adjacent to the EOWA, with industrial redevelopment in other areas.

Source: CMAP analysis.

Additionally, there can be conflict between the goals of manufacturers and freight providers and local municipalities. Manufacturing and freight firms need well-maintained roads that can support freight traffic, while local governments must find an appropriate balance of land uses that produces adequate revenues to cover the costs of maintaining local infrastructure and providing public services. In some cases, local municipalities may rezone industrial land for alternative uses that have the potential to generate higher revenues and lower costs. For example, Bensenville rezoned an area of industrial development to commercial, limiting the potential to lease or sell vacant spaces to new industrial users. Due to concerns voiced by property owners, Bensenville's recent Comprehensive Plan recommends restoring the zoning in the area to industrial.

## Redevelopment planning to support the freight and manufacturing cluster

As described above, much of the study area's industrial building stock is older and smaller than modern manufacturers may desire. However, this is balanced by the strong transportation and labor force access afforded by the study area. Tenants in O'Hare industrial areas want to locate near these assets and have adapted poorly-suited buildings, constructed auxiliary stormwater systems, and worked through often-complicated redevelopment processes to locate within the study area. Over the long term, a more-coordinated strategy may be required to ensure the success of the freight and manufacturing cluster in the study area.

In particular, high land prices and new expressway access present the potential for change. The EOWA will provide valuable new access to areas adjacent to the roadway, and also the potential for redevelopment and/or a transition from industrial to other uses. As described above, municipalities have invested significant time and effort into planning for the EOWA. In



some cases, those plans call for a transition to office and retail uses. These uses tend to provide higher fiscal benefits to municipalities, but can have much lower regional economic benefits.<sup>50</sup> The subregion is critical to the region's freight and manufacturing industry. The area has strong access to existing transportation assets and a trained workforce, and represents a significant investment of public and private resources. A multi-jurisdictional approach that plans for appropriate transition to other uses and preservation of core industrial areas in the cluster will be critical to support freight and manufacturing in the subregion over the long term.

## Moving the O'Hare Freight and Manufacturing Cluster Forward

The O'Hare subregion is characterized by a diverse economy with high concentrations of freight and manufacturing employment. The subcluster's location and confluence of transportation infrastructure make it an attractive area for both freight and manufacturing firms to locate. But, employment changes in the study area's manufacturing cluster have closely followed national trends of declining manufacturing employment. Despite these significant job losses, the area's manufacturing cluster location quotient has remained high over the last decade and currently stands at 1.7. Freight cluster employment in the study area has been more robust, growing at a pace faster than national trends, and the study area now contains roughly 23 percent of the CMAP region's freight cluster jobs.

Addressing infrastructure, congestion, and multijurisdictional policy issues in the study area will be a key part of nurturing the study area's future growth in freight and manufacturing. Major initiatives such as the Elgin-O'Hare Western Access project and CREATE program are already underway to address some of the study area's most pressing problems. Additional opportunities exist to address these issues by encouraging multijurisdictional cooperation to address infrastructure, workforce, and planning issues that impact the success of the O'Hare freight-manufacturing cluster.

### Workforce training

Workforce training is an integral part of ensuring economic prosperity in the subregion. School districts, community colleges, community-based organizations, and local governments are already working together to understand how to more fully prepare the subregion's workforce. Expanding these efforts will ensure that manufacturing in the subregion will continue to prosper.

In particular, local stakeholders must expand ongoing efforts to strengthen and scale-up coordination between industry, educators, and training providers to match skills development with industry needs. This increased coordination will help leverage the resources required for

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<sup>50</sup> For more information see CMAP's report on the fiscal and economic impacts of local development decisions at <http://tinyurl.com/od2ktdn>.



costly trainings programs, provide students access to the latest manufacturing equipment, and ensure that training program curriculae help students obtain the most up-to-date skills required for an advanced manufacturing career.

Stronger connections between middle and high school educators and the region's manufacturing cluster are needed to ensure a consistent supply of well-educated employees. Academic programs that teach basic skills such as math and reading comprehension in the manufacturing context provide essential preparation and improve the transition from school to the work force. Steps should be taken to explore new educational models that equip students with the skills required to secure a job as they explore advanced manufacturing opportunities.

The subregion's workforce challenges are diverse and widespread, requiring longer term efforts. Localized solutions tailored towards area industries, institutions, and workers can enable stakeholders to implement appropriate and achievable strategies. The co-location patterns of freight and manufacturing in the subregion present an opportunity for related industries to work with one another to develop solutions to shared problems.

**Timeframe:** Ongoing.

**Lead Implementers:** The Golden Corridor Advanced Manufacturing Partnership has been working to coordinate training opportunities for local residents and inform young people about careers in advanced manufacturing. The organization has received the support of many manufacturers, training organizations, and community colleges in the study area. The recommendations of CMAP's Golden Corridor report to provide a more formal structure, a focused mission, and long-term funding for this organization should be followed so that it can serve as a forum to address subregional workforce needs.

## **Plan for truck routing and infrastructure improvements across jurisdictions**

Projects like EOWA and CREATE will help ease congestion in the study area. But, cooperation across jurisdictions could also be utilized to route trucks more effectively throughout the study area. As previously mentioned, multiple layers of government in the study area have imposed truck restrictions and regulations which limit when and where trucks of various sizes and weight are allowed to travel. Many of these restrictions are enacted on a local level without coordination among governments. This results in convoluted and inefficient truck routing system in the study area that degrades the area's competitive freight advantage. In addition, the subregion lacks key connections within some industrial areas, often forcing trucks onto arterial roads unnecessarily.

Municipalities should collaborate with one another, the counties, and the state to more efficiently plan for truck routing. This may also require associated planning for upgrades of key truck routes. Piecing together various infrastructure studies conducted in the area suggests that the existing infrastructure is in poor condition, particularly on some major freight routes. In



addition, collaboration on truck routing and infrastructure improvements could have the added benefit of decreasing excessive wear on local road infrastructure, reducing road maintenance costs for municipalities, and improving quality of life by reducing truck traffic on some routes.

**Timeframe:** Near term.

**Lead Implementers:** Municipalities are the key local actors for truck routes, and should work together to simplify truck routing and identify required truck freight infrastructure improvements in the subregion. CMAP and DuPage and Cook Counties could build on current regional discussions to provide streamlined truck permitting and utilize the O'Hare area as a pilot project for streamlined truck routing. The focus should be on communities with a significant industrial base and the municipalities that trucks must traverse to move between these areas. Planning should also address the higher cost of maintaining truck routes and seek to share those costs among affected jurisdictions.

## **Opportunity for coordinated stormwater planning**

The O'Hare area currently experiences widespread and ongoing flooding problems. There are two key components of stormwater management. The first is at the municipal level, where the condition and sophistication of stormwater infrastructure determines the capability of a municipality to address storm events. The second is at the watershed level, where coordination amongst neighboring communities, counties, and various government bodies is critical to address flooding.

Moving forward, a multijurisdictional approach to stormwater management and infrastructure improvement will be critical for the success of the study area. While smaller level, local efforts have been undertaken to address flooding issues, there is a need for broader analysis of stormwater problems, identification and prioritization of key improvement needs, and development of a plan to improve stormwater management across jurisdictions. While the counties have already undertaken some portions of this need, a specific analysis should be completed for the O'Hare area to identify the key problems, offer potential solutions, and identify key implementation steps to better manage chronic flooding problems. In addition, municipalities can update their zoning and subdivision codes to better align with the new Cook County Watershed Management ordinance. Municipal codes can often be overly prescriptive in their calls for grey infrastructure and/or other impervious surface generators. Streamlining municipal ordinances with the appropriate county stormwater ordinance will also help developers to better navigate the process.

**Timeframe:** Moderate to long term.



**Lead Implementers:** The most impacted communities are directly south of O’Hare. The MWRD has already identified several key improvements that should reduce problems within the floodway, and has also worked with nearby communities on watershed plans and flooding issues. The MWRD, in partnership with DuPage County’s stormwater program, should build on this prior work to identify further potential improvements needed within the study area. The Metropolitan Planning Council, which has recently completed significant work on multijurisdictional stormwater management, may also provide resources.

## **Multijurisdictional redevelopment plan**

Much of the study area’s industrial building stock was developed forty to fifty years ago, and office development was developed 30 to 40 years ago. Some redevelopment has occurred, albeit very slowly. Industrial redevelopment potential is limited by high land values, small lot sizes, and modern building, stormwater, and zoning requirements. In particular, some manufacturer types have moved to areas with lower real estate costs and land available for larger footprint buildings. However, other manufacturing and freight tenants have adapted sites and buildings to meet more modern needs, indicating the continued desire to locate in the study area. Office redevelopment must overcome high vacancy rates in the subregion and changing trends in demand for suburban office space.

Planned transportation investments in the O’Hare area also have the potential to substantially change land uses in some areas and lead to a reduction in industrial space. In particular, communities located along the EOWA may experience large-scale redevelopment in response to the new access and visibility that the facility will provide. Several communities have already developed individual plans in preparation for the EOWA. But, this piecemeal approach does not fully capitalize on the area’s existing industrial assets and will not provide a coordinated strategy to support the freight and manufacturing cluster over the long term. Taking a comprehensive approach to redevelopment planning will ensure that manufacturers in the subregion have access to the necessary land and resources to remain competitive.

To enhance local communities, preserve the O’Hare area’s industrial strengths, and best capitalize on the confluence of transportation and human capital assets, a multi-jurisdictional redevelopment plan should be completed for the area. This plan should lay out a vision for industrial development, and the freight and manufacturing cluster, to continue to thrive in the O’Hare area. The plan should acknowledge the changing nature of freight and manufacturing in the area, identify those portions of the study area that are best suited to industrial uses, and lay out a framework and strategies for industrial preservation and redevelopment. The plan should also recognize that some industrial areas will transition to office or retail, and plan for that transition. The market potential of the corridor should be analyzed and provide a guide for planning for both industrial redevelopment and new office and retail space. The redevelopment plan should also give special consideration to how and where new development could capitalize on existing or expanded rail spurs.



Construction of the EOWA is already underway and is the near-term focus of many of the subregion's communities. But, planning across jurisdictions offers an opportunity to understand the broader market potential for the study area and capitalize on the potential for change in a way that leverages infrastructure, workforce, and economic assets across the subregion.

**Timeframe:** Immediate/near term.

**Lead Implementers:** Communities within the EOWA study area provide a critical starting point for a redevelopment plan. Communities directly adjacent to the facility include Franklin Park, Bensenville, Elk Grove Village, Itasca, Wood Dale, Roselle, and Hanover Park, but other nearby communities may also choose to participate. DuPage County encompasses all or part of many of these communities, and provides a logical forum for moving forward with a redevelopment plan. The County, in strong partnership with Cook County and interested communities, should pursue the redevelopment plan through CMAP's Local Technical Assistance program.

## Conclusion

The O'Hare subregion is a center of freight and manufacturing activity in the Chicago region. Manufacturers and freight carriers in the area benefit from being located near multiple modes of transportation and along high-traffic corridors which reduces a firm's transportation costs and increases freight movement options. Local manufacturers are fully leveraging these assets as a competitive strength, and as global trade continues to increase, the study area will rely even more on these advantages.

Many opportunities exist to support the study area's industries into the future. Steps are already being taken to support future workforce skill development, and major projects are underway to reverse the deterioration of infrastructure and solve congestion issues. Additional opportunities exist to better support the cluster in this changing environment. Collaborative, multijurisdictional projects to address freight congestion, stormwater management, and redevelopment planning will be a key to take advantage of these opportunities. These undertakings will foster greater competitiveness and ensure that the study area continues to be an asset to the region's economy.









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