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## MEMORANDUM

**To:** Economic Development Committee

**From:** CMAP and CWIC staff

**Date:** September 23, 2011

**Re:** Freight Cluster Drill Down Summary of Findings

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This document summarizes the findings from Freight Cluster Drill Down research. Pieces of this document will be included in the Executive Summary and most of it will be included in the full length technical report. Staff will present the key findings, answer questions from the committee, and seek feedback from the committee. Staff have identified a few particular areas where feedback from committee members would be especially helpful:

1. Are the tables on pages 4-5 and 6-7 an effective way to present and summarize the information?
2. Do any terms need to be defined or further explained?
3. The Bureau of Labor Statistics crosswalk between the Classification of Instruction Programs code (CIP) and Standard Occupation Code (SOC) was used to link post-secondary education to specific occupations. This crosswalk does not capture all programs—are there other resources the team should consult to link training programs to specific occupations?



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## Abstract

*The CMAP and CWIC freight cluster drill down analysis investigates the composition of and relationships between industry sectors within the Chicagoland freight cluster. This memorandum explains the methodology, summarizes the economic and workforce analyses, and explains the key findings.*

### Freight Drill Down Methodology

An industry cluster is a group of interdependent firms and related economic actors that draw productive advantage from their close geographic proximity and connections.<sup>1</sup> By definition, these firms also create wealth for the region through the export of goods and services.<sup>2</sup> One of the priorities identified in the CMAP GO TO 2040 comprehensive regional plan is to “improve the efficiency and interconnectedness of the region’s freight systems.”<sup>3</sup> The regional plan recommended that CMAP and other regional leaders drill down into the cluster to determine how freight businesses interact with one another and connect to the wider regional economy.

Much of the public understanding of the freight cluster centers around the modes of freight transportation: trucking, rail freight, air freight and water freight. These industries are most commonly invoked in discussions of freight-related economic development or workforce development policies. This is understandable; they are large and visible, and are often represented by vocal industry associations or labor organizations. However, the freight modes make up only about 30% of cluster employment. The remainder of employment is in related industries that either directly supply, indirectly support, or act as major customers to the modes of freight transportation. Together, the industries that make up the region’s freight cluster provide the nation with much needed services; in 2007 1.5 billion tons of freight moved through the Chicago region.<sup>4</sup>

Figure 1 displays the composition of the freight cluster as defined for this study. The freight cluster is made up of 42 industries that fall into four categories:

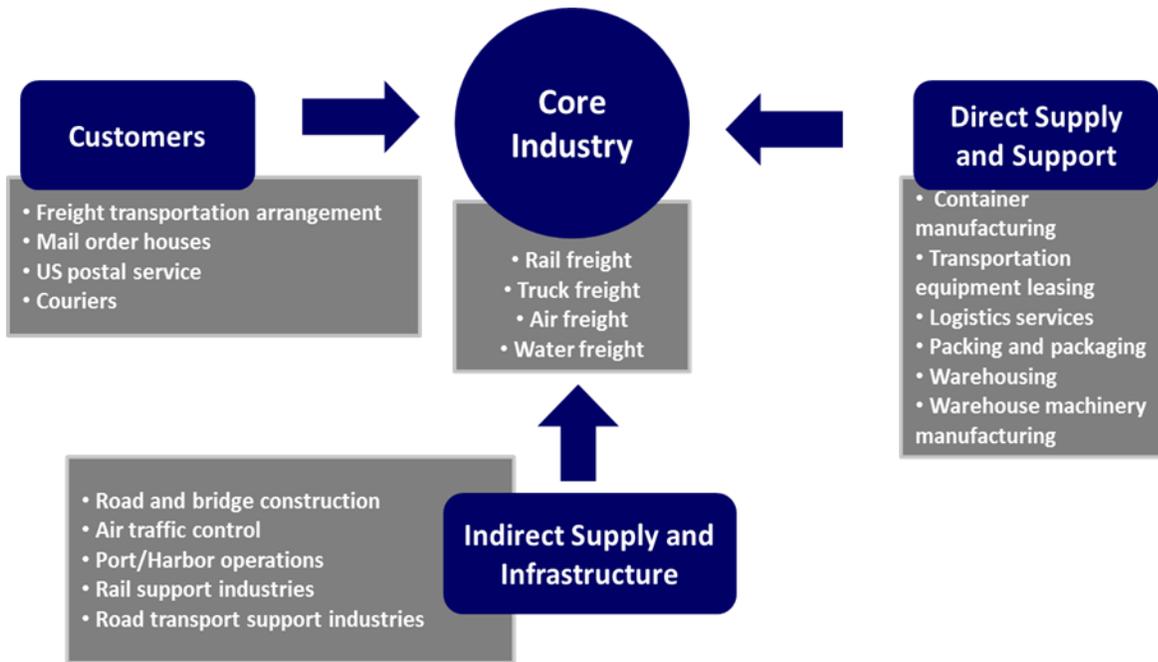
<sup>1</sup> The Brookings Institution Metropolitan Policy Program, 2006. “Making sense of clusters: regional competitiveness and economic development.” Available at <http://www.brookings.edu/metro>.

<sup>2</sup> San Diego Association of Governments, n.d. “Understanding Cluster Analysis.” P. 2.

<sup>3</sup> CMAP Go to 2040 Comprehensive Regional Plan, p 306. Available at <http://www.cmap.illinois.gov/2040/main>

<sup>4</sup> Chicago Metropolitan Agency for Planning, Freight System Planning Recommendations Project. See <http://www.cmap.illinois.gov/freight-system-planning>.

- Thirteen **core** industries are those most commonly thought of as freight - they represent modes of transporting freight from one location to another by rail, truck, air, or water.
- Four **customer** industries are those that primarily use freight services - such as couriers and freight transportation arrangement.
- Fifteen **direct supply and input** industries are engaged in providing goods and services to core freight industries. They include manufacturing shipping containers, warehousing, and transportation, and equipment rental and leasing.
- Thirteen **indirect support and infrastructure** industries include highway, street and bridge construction, and support activities for road, air, water, and rail transportation.



When economic development and workforce development research such as this is coordinated, it can result in the identification of creative and efficient strategies that encourage economic growth in the region and help prepare individuals for employment. A more complete understanding of the barriers to and opportunities for growth faced by local industries can inform the development of joint solutions that serve the needs of both businesses and residents, and provide for maximum return on investment of public dollars.

This study, completed jointly by the Chicago Metropolitan Agency for Planning (CMAP) and the Chicago Workforce Investment Council (CWIC) attempts to identify opportunities for strategic investments and policy solutions for the freight cluster that could promote economic growth and job creation. Through both an economic analysis and a workforce analysis, data was analyzed from several sources on the industries and occupations that make up the freight cluster.

Preliminary findings were vetted through interviews with 30 companies and organizations to see if the data collected on the freight industries and occupations reflected companies' experiences and expectations. These interviews also provided the opportunity to ask the firms and organizations about any policy and regulatory barriers they face in doing business, including lack of coordination between governments, tax policies, and land use constraints. This report's analysis of the industries and occupations in the freight cluster identifies and prioritizes areas where strategic government investment and policy change can lead to the greatest returns.

### **Economic Analysis**

The results of the economic analysis are displayed in Table 1. For each industry or group of industries, the table provides information on the size of the labor force and the percentage of the total cluster workforce. These data are 2008 numbers from Economic Modeling Systems, Inc. (EMSI). "Export" value is a measure of the total amount of wages paid to workers who produce export goods.<sup>5</sup> The demand and supply industries data are from IMPLAN cross-industry multipliers<sup>6</sup> and show the number of industries in the regional economy that rely on the freight modes as key suppliers to their industries (demand industries) and the number of industries that are suppliers significant to the operation of each freight mode (supply industries). The data indicates that the number of key suppliers for each industry is similar. However, the trucking sector is a significant supplier to far more industries than any other freight mode.

#### ***Cluster Trend: The Rise of Intermodal Business***

The second half of the 20th century saw the rise of "containerization," or the use of standard sized steel shipping containers that could be transferred between different modes of freight transportation. This trend resulted in increased efficiency of freight movement, as cargo no longer needed to be unloaded from one vessel and reloaded onto another – the container could simply be moved by crane from ship to rail to truckbed. This trend led to the development of intermodal sites that connect the different modes of freight.

Growth in intermodal containerized shipping has made the Chicago region the third busiest container-moving "port" in the world, behind only Hong Kong and Singapore. (Source: Chicago Metropolis 2020, "The Metropolis Freight Plan: Delivering the Goods," 2004, 5. See <http://tinyurl.com/2e5knme>.) The region's 20 intermodal terminals are a significant asset to the regional economy, sorting and distributing rail carloads and intermodal containers. These terminals are places where freight is re-arranged and either re-shipped or distributed throughout the region. This adds value to the Chicago economy by utilizing Chicago based supply companies (such as logistics operations and equipment leasing firms) and increasing employment opportunities.

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<sup>5</sup> For any industry where the number of workers is higher than the national per capita average, it is assumed that those extra workers are employed to produce export goods (since the workers up to the national average work to supply the region's needs).

Value added per job is the ratio of new revenue produced in the sector divided by the number of new jobs produced as the sector expands. Results are based on 2009 IMPLAN revenue and jobs multipliers. This data strikes a balance between industries that generate a substantial amount of revenue and new jobs during expansions. A high value added per job does not necessarily mean that an industry or group of industries actually gained jobs in 2009. The last column, regional labor force change, comes from the Bureau of Labor Statistics and shows how the industry in the region has changed relative to national and industry-wide trends. Most of the industries or groups of industries in the table have kept pace with, or grown relative to national or industry trends between 2004 and 2009 (10 growing or maintaining and 3 shrinking). Note that data on all of these measures was not available for all 42 industries in the cluster.

Table 1: Summary of Economic Analysis

Industry or Group of Industries	Labor Force (1000s) (2008)	Percent of Cluster	Export Value	Demand Industries (2009)	Supply Industries (2009)	Value Added per Job (2009)	Labor Force Change (2004-2009)
<b>Freight Modes</b>							
<b>Air freight:</b> <i>Scheduled air freight transportation; Nonscheduled chartered air freight</i>	1	<1	Medium	No significant linkages*	10	High	+
<b>Truck freight:</b> <i>General freight trucking (local, long distance truckload and less than truckload); Specialized freight trucking (long distance and local); Used household and office goods moving</i>	41	24	High	36	12	Low	+
<b>Rail freight:</b> <i>Short line railroads; Line haul railroads</i>	10	6	High	13	9	Medium	--
<b>Water freight:</b> <i>Coastal and Great Lakes, Inland Water, and Deep Sea Freight Transportation</i>	1	<1		1	7	High	
<b>Non-Mode Freight Industries</b>							
<b>Commercial transportation equipment rental and leasing</b>	1	<1	Medium			High	+
<b>Freight transportation arrangement</b>	15	9	High				+
<b>Mail order houses</b>	7	4	Medium				0
<b>Warehousing and storage</b> <i>General; refrigerated; farm product; and other</i>	28	16	Low			Low	--
<b>Industrial truck, trailer, and stacker manufacturing</b>	1	<1	High			High	0

Industry or Group of Industries	Labor Force (1000s) (2008)	Percent of Cluster	Export Value	Demand Industries (2009)	Supply Industries (2009)	Value Added per Job (2009)	Labor Force Change (2004-2009)	
<b>Paperboard container package manufacturing</b> <i>Corrugated and solid fiber box; folding paperboard box; setup paperboard box; fiber can, tube, and drum</i>	11	6	High			High		
<b>Packing and crating</b>	1	<1					+	
<b>Packaging and labeling</b>	3	2					--	
<b>Process, physical distribution, and logistics consulting services</b>	3	2	Medium				Medium	+
<b>Support activities for rail</b>	2	1						0
<b>Other support activities for road transportation</b>	1	<1						+
<b>Notes:</b> The industries represented here make up 71% of cluster employment. * Significant linkage means that as the industry grows by \$1 million, it spends at least \$20,000 on the freight mode. Multiplier effects that show less significant results are not included in Table 1. <b>Labor Force</b> indicates 2008 employment (Economic Modeling Systems, Inc. –EMSI) <b>Percent of Cluster</b> is the labor force of a given industry or group of industries as a percentage of the total 2008 cluster employment (172,476). ( EMSI) <b>Export value</b> is the value of wages paid to workers that is above the national average (assumed to be working in export-oriented parts of the industry) Low is < \$10 million; Medium is \$10 to \$100 million; High is >\$100 million (BLS) <b>Demand Industries</b> are the number of industries that depend on the freight mode as a key supplier (IMPLAN) <b>Supply Industries</b> are the number of industries that each freight mode depends on to supply it (IMPLAN) <b>Value added per job:</b> The ratio of revenue to jobs created during a \$1 million expansion. Low is \$100,000 to \$150,000 per job; Medium is \$150,000 to \$200,000 per job; High is > \$200,000 per job (IMPLAN) <b>Labor Force Change:</b> Regional change relative to national and industry trends 2004 - 2009: -- means region fell by >5% relative to the nation; 0 means region changed less than 5% relative to the nation; + means the region rose by >5% relative to the nation. (BLS)								

### Workforce Analysis

There are more than 500 occupations represented in the freight cluster, but just 20 occupations represent nearly half of all workers in the cluster. Those 20 can be organized according to the following five categories: railroad workers, truck drivers, material handlers and movers, production workers, and logistics planning and freight management services workers.

Table 2 provides information about each of these five occupational categories including: their size in relation to the rest of the cluster; their projected number of new jobs as well as total job openings, and median hourly earnings. In addition, the table provides information obtained through interviews about the education or skills requirements for entry level positions in each occupational group, as well as the level of additional training that is provided by employers once an employee is on the job.

As shown in the table, most of these occupational categories are projected to remain relatively steady or lose jobs between 2008 and 2018. Production workers stand out as a group with a significant projected decline in total jobs. Despite projections showing a decline, several employers across industries indicated that they expect to grow their labor force, and all industries are expected to have job openings. Many employers cited turnover and retirement as reasons. A close examination of these top 20 occupations revealed that the majority require no more than a high-school diploma, English proficiency, willingness to work, and other soft-skills. Most employers in the freight cluster provide necessary training on the job, largely because the tasks or industry is so specialized.

*Table 2: Summary of Workforce Analysis*

Occupational Category	Percent of Cluster (2008)	Projected Growth (2008-2018)	Projected Openings (2008-2018)	Median Hourly Earnings (2011)	Requirements for Entry Level Position*	Additional Training Provided**
<b>Railroad occupations:</b> <i>Locomotive Engineers and Operators; Railroad Conductors and Yardmasters; Railroad Brake, Signal and Switch Operators</i>	3%	-1%	2,046	High	Diploma/GED	Intensive
<b>Material handling and moving occupations:</b> <i>Hand Laborers and Material Movers; Hand Packers and Packagers; Supervisors of Laborers and Material Movers</i>	15%	-1%	7,521	Low (entry level) to Very High (supervisory)	No formal education requirements for entry level positions	Minimal
<b>Trucking occupations:</b> <i>Truck Drivers, Heavy and Tractor Trailer; Industrial Truck and Tractor Operators; Truck Drivers, Light or Delivery Services; Bus and Truck Mechanics and Diesel Engine Specialists</i>	20%	5%	10,044	Moderate to High (drivers); Very High (diesel mechanics)	Commercial Drivers License; 21 years of age (heavy truck); postsecondary credential (diesel mechanic)	None
<b>Production occupations:</b> <i>Paper Goods Machine Setters &amp; Tenders; Machine Feeders and Off Bearers; Team Assemblers; Production Workers, All Other</i>	3%	-15%	1,038	Low to Moderate	Diploma/GED with focus on math and technical skills	Minimal
<b>Logistics planning and freight management occupations:</b> <i>Cargo and Freight Agents; Shipping, Receiving and Traffic Clerks; Dispatchers (except police, fire, and ambulance ); Managers of transportation and material-moving</i>	8%	-3%	4,006	Moderate (shipping clerks); High (dispatchers and freight agents); Very High	Diploma/GED	Moderate to Intensive (depending on employer)

<i>machine and vehicle operators; Production, Planning and Expediting Clerks; First-line supervisors/managers of transportation and material-moving machine and vehicle operators</i>				(expediting clerks; managers)		
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\* At least one employer for each one of these occupational groups indicated that all hires must be drug free, proficient in English, and pass a criminal background check. Many also expressed the need for “soft skills.”

\*\* Government-mandated trainings, such as OSHA, are not included here, and are presumed to be provided by employer.

**Key**

Indicator	Definition
Percent of Cluster Employment	The top 20 occupations in the cluster are divided into five categories. Indicates percentage of total cluster employment (172,476) falls into each occupational category. (EMSI, 2008)
Projected Growth	Projected percent increase or decrease in total employment for each occupational group, 2008-2018. (EMSI)
Projected Openings	Number of total job openings due to new jobs and replacement jobs (due to retirement and turnover) (EMSI)
Median Hourly Earnings	Median earnings, not including benefits, for workers in a given occupation in the region. Low = <\$14/hr; Moderate = \$14-17/hr; High = \$18-20; Very High = >\$21/hr (EMSI, 2011)
Requirements for Entry Level Position	Educational or other requirements to entering the field as an entry level worker. Based on interviews and publicly available data (Bureau of Labor Statistics)
Additional Training Provided	Assessment of average level of job training provided by employer, per information gathered from interviews.

**Key Findings**

Several industries or groups of industries stand out as significant because they constitute a significant percentage of cluster employment, demonstrate a high export value, have multiple supply or demand linkages with other industries, have been performing well relative to national and industry-wide trends, are projected to have significant numbers of job openings, employ workers at good wages and/or provide opportunities for advancement.

Trucking

- The six trucking industries employ 24 percent of the cluster’s workers.<sup>7</sup> Truck-borne freight also grew in employment regionally compared to the nation between 2004 and 2009. However, the value added per job is low.
- The industry brings substantial value to the region by providing services to those outside the region; in 2009 trucking brought in over \$300 million in wages for workers employed to provide exported services. Trucking also outstrips the other freight modes as a key supplier to other industries, including concrete, building materials, agricultural commodities, and

<sup>7</sup> This figure is based on “covered” employment estimates, meaning jobs that are covered by unemployment insurance. “Complete” counts include proprietors and the unemployed, which are heavily represented in the trucking industries due to the number of owner-operators. Using complete data, the percent of cluster employed in the trucking industries jumps to 30%.

manufactured goods. In addition, it purchases goods and services from a significant number of other regional industries.

- Together the top trucking occupations are the fastest growing in the cluster, projected to add 1,600 new jobs in the region by 2018. Taking turnover into account, 10,044 job openings are expected during this period. Employers attribute this phenomenon in part to the aging workforce, and in part to a culture of high turnover among drivers. The high turnover was noted as a major challenge for employers; in recent years turn-over has been near 100 percent. Despite efforts to inform potential truck drivers of the challenging realities that come along with this occupation, many people pursue this occupation only to leave after a short period of time.
- Top trucking occupations earn a median hourly wage ranging from \$14.45 for industrial truck and tractor operators to \$22.16 for bus and truck mechanics and diesel engine specialists. Compared to the rest of the cluster’s top occupations these salaries are moderate and in the case of bus, truck and diesel mechanics, very high.
- Industrial truck and tractor operators and light and delivery truck drivers generally need only on the job training to enter the profession. Heavy truck drivers (the most prevalent occupation in the cluster) are required to have a commercial driver’s license and to be at least 21 years of age. Diesel mechanics are the only occupation in the workforce analysis required to obtain a postsecondary credential to enter the field. According to publicly available data, however, only one school in the region offers such a credential. If more diesel mechanic programs exist, our public information systems are flawed, and are not providing complete information to those seeking job training.
- Though different wage ranges are available there is little opportunity for upward movement from a driver position to management and no training is provided to drivers after they enter the field. However, workers with several years of experience often become self employed owner/operators.
- Because the operations of many trucking companies span numerous state and local jurisdictions, they must navigate through a complex landscape of differing road and bridge weight restrictions, delivery time restrictions, and permitting processes and fees. Often this lack of coordination is costly for trucking companies as they are frequently fined for violating local ordinances that they have not been made aware of. While the private sector does make some information available through GIS systems, there is not currently an updated data source that can act as an information clearing house across the region.
- Other barriers to business cited by industry executives include team driving restrictions,<sup>8</sup> hours of service regulations,<sup>9</sup> tolling policies and the fuel tax. Specifically, industry

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<sup>8</sup> Drivers used to be able to drive in teams where one individual would drive for five hours and then retire to the cab so the other driver could take over the next five hours. Now regulations require that the time on/off is at least 8 hours

<sup>9</sup> There is a new federal “hours of service” bill that will be in front of congress this October. The bill proposes that the hours a truck driver can work without a substantial break be reduced from 11hrs to 10 hours, and that they would need a 10hr break before beginning

representatives remarked that because of the high fuel taxes in Illinois, and especially Cook County, truck drivers tend to refuel in Indiana to avoid paying the higher prices.

## Rail

- Rail transportation is an essential mode for fewer industries in the region than trucking, though it does purchase goods and services from several local industries. Furthermore, regional rail employment declined more in the Chicago region from 2004 to 2009, relative to the rest of the nation, and is projected to continue its decline. However, interviews with industry representatives indicated that they predict the opposite: strong job growth in the industry. They credit the expansion of intermodal terminals, the rising cost of truck transportation due to increased fuel costs, and the acquisition of the EJ&E Railroad by Canadian National,<sup>10</sup> among other factors.
- Rail jobs offer high wages and accessible career pathways. To obtain positions in the rail industry, one must have a high school education, submit to drug tests, have English language proficiency, and no criminal record. However, candidates that meet these criteria are surprisingly difficult to find. Thus, many of the interviewees for this study have said that they look to hire those that have a background in the military, the police force, or the fire department, as these occupations have a similar organizational culture to that of the rail industry
- When rail companies are able to find and retain qualified employees they provide them with all necessary training needed to advance their careers, and as a result, individual careers with a given rail company tend to be quite long, and follow an upward trajectory toward management positions, better hours, and increased wages.
- Due to turnover and retirement, an estimated 2,000 jobs in top rail occupations will become available in the region’s freight cluster. This is primarily attributable to the “graying” of the rail workforce. Several major Class I railroad have reported 35% - 50% of their workforce as being over the age of 50. Employers are responding to these retirements by promoting from within, and hiring more entry level positions. One rail company did express a desire to work with the public education and workforce development system to find skilled diesel mechanics, welders, and electricians.
- Rail occupations, which are unionized, offer some of the highest median wages of any occupations in the cluster. Entry level jobs offer wages that range from \$15-\$20 per hour, but often include long hours, tough outdoor working conditions, and nights spent away from home.

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work again. Many in the trucking industry believe that this will reduce productivity by 13 – 14%, increase costs, push product prices up, & cause trucking routes to be re-written

<sup>10</sup> A 2008 CMAP study found that this acquisition would result in a \$60.1 million annual increase in the region’s Gross Regional Product, create 649 jobs, and generate new labor income of \$39.0 million.

<http://www.chicagometropolis2020.org/PDFs/MetropolisSummary.pdf>

- Rail experts cited the existing rolling stock exemption in Illinois as a major perk, and are concerned about proposals to remove that exemption; some indicated that such a move might incentivize rail companies to locate elsewhere. In addition, many rail industry executives also spoke with concern about the high fuel taxes in Illinois, and experience a lack of coordination between state, and local jurisdictions, particularly in connection to road and viaduct maintenance and the ability to contact appropriate parties regarding these matters. They also expressed frustration with uncoordinated agencies at the federal level.

### Freight Transportation Arrangement

- The freight transportation arrangement industry is notable for reasons related to both potential economic benefits, and workforce opportunities. Freight transportation arrangement, which includes the freight forwarding companies, demonstrates a very high export value, due to the fact that these industries coordinate freight shipment for entities based throughout the world. The industry employs nine percent of the cluster, has been growing within the region, and has a high value of wages paid to “export” workers (\$608 million in 2009).
- The industry is insulated from drastic economic downturns, because it deals in both exports and imports globally, and is therefore able to take advantage of both the weak and strong dollar. Furthermore, it has been growing more rapidly in the Chicago area than nationally.
- Freight transportation arrangement companies employ a large number of individuals in the logistics planning and management occupational group, a field with many opportunities for advancement and wage growth. Entry level wages are moderate (~\$14) to high (~\$18) compared to other top cluster occupations, and career advancement paths are easily accessible. Employees can enter with only a high school diploma, through some companies indicated that a bachelors degree was preferred. Depending on the company, employees will be exposed to moderate or intensive on the job training. Cargo and freight agents are predominantly employed in the freight transportation arrangement industry and are one of only four occupations in the cluster’s top twenty expected to grow by 2018.
- Employers within this industry indicate that the public sector could help facilitate growth by improving the transportation infrastructure in the area where many of these companies are clustered – around O’Hare airport. This includes both public transit options for employees to access jobs, as well as road maintenance and building to help shipments get to and from the cargo area of the airport.

### Transportation Equipment Rental and Leasing

- The Chicago region is home to GATX, which leases locomotive engines for railroads, TTX, which leases rolling stock for railroads, and several other companies that lease aircraft,

warehouse equipment (such as forklifts), trucks, and ships. Regionally, this industry has been adding employees faster than the national industry average. This industry also has a high value added per job – about \$218,000 in revenue per job added. This ranks equipment rental and leasing just below package manufacturing and air freight in this indicator, but well above trucking and warehousing and storage.

- This industry is a significant supplier of services to other cluster industries in the region. Each of the four freight modes includes equipment rental and leasing among their significant suppliers. Business throughout the cluster indicated that they are moving toward a model of renting rather than purchasing equipment, as a cost saving measure. This trend has accelerated since the recent financial crash and recession. As long as it continues to be difficult for freight operators to access additional capital to purchase equipment, the equipment rental and leasing industry is poised to experience significant growth.

### Package Manufacturing

- The packaging manufacturing industries (which include producers of corrugated and solid fiber boxes; folding paperboard boxes; setup paperboard boxes; and fiber cans, tubes and drums) employ approximately 11,000 workers and constitutes 6 percent of the region's freight cluster. The companies in these industries supply packages used by the major modes of transportation.
- This industries support a large amount of employment engaged in producing goods and services exported from the region; 61 percent of sector employment is export oriented. The total wages paid to the workers producing the export goods is very high, approximately \$500 million.
- Packaging manufacturing has one of the highest value added to jobs ratios in the cluster. As this manufacturing sector grows it gains more revenue per new employee than most of the rest of the cluster, including any of the freight modes.
- Three of the four top production worker occupations are projected to lose a combined 813 jobs by 2018. However, despite the total job loss expected in these occupations, 1,038 openings are still anticipated. With nearly 40% of their production workforce expected to reach retirement age in the next ten years, employers of production workers cite retirement as a key factor involved in creating job openings.
- The median hourly wage for these top production occupations in the cluster ranges from \$10.95 for team assemblers, to \$16.65 for paper goods machine setters and tenders, a type of machinist. According to employers, more advanced machinists can expect to earn up to \$20/hr within the first two years, and (counting generous overtime) up to \$100,000/year as an experienced machinist with supervisory duties. Moving from the shop floor to a management level position is not common.

- Experts in the manufacturing industry reported that many open production positions are being given to immigrants from Mexico and Eastern Europe who often offer employers a background with more extensive training than that of U.S. workers. Though these positions involve on the job training, employers report that applicants lack basic math or technical knowledge, and lack “soft skills.” The publicly available data on vocational and postsecondary training programs in manufacturing is incomplete; resources such as O\*NET from the Bureau of Labor Statistics do not identify any programs in the region that are linked to top manufacturing occupations in the freight cluster.

### **Discussion of Other Freight Industries**

Because the modes of freight transportation are highly visible, and very important to the regional economy, this section includes a discussion of the analysis of the modes not included in the previous section-- air freight and water freight. A discussion of the warehousing industries, which make up a significant part of the cluster (16%), is also included.

#### Air Freight

- Although the air freight industry represents a very small portion of the labor force (<1% of employment in the cluster), it does create a high value to jobs ratio when it expands and has been increasing within the region relative to the rest of the nation. That high value to jobs ratio affects the rest of the economy when the air freight sector buys from its numerous suppliers. The air freight industry did not express a need for help navigating or eliminating regulatory or workforce barriers.
- As Chicago continues to increase landing fees for planes, many air freight companies are looking into using other local area airports, such as Rockford, in order to bring goods into the region.

#### Water Freight

- Water freight carries approximately 5 percent of freight volume through the region and less than 1 percent of freight value.<sup>11</sup>
- Water freight is small relative to the rest of the cluster (less than 1,000 workers; less than 1% of total cluster employment, but demonstrates a high value added to jobs ratio, which is likely due to the small employment base. Water freight is not a significant supplier for many industries and tends to draw from few local suppliers.

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<sup>11</sup> CMAP forecasts with Global Insight data, <http://www.cmap.illinois.gov/freight-snapshot>

## Warehousing and Storage

- Warehousing and storage industries (general warehousing and storage, refrigerated, farm product, and “other”) employ approximately 28,000 workers -- nearly 16 percent of the cluster’s employment. While warehousing and storage may provide opportunities for the least skilled workers, wages are low and those jobs do not usually allow for much additional training or wage increases.
- This sector also generated approximately \$304 million in value of “export services.” While essential to the operation of intermodal operations, the ratio of revenue to jobs created is the lowest in the cluster – the result of low revenue creation and high job growth. This sector reports several labor difficulties in terms of shortage of qualified workers and high turnover rates.
- According to some employers, the current regional tax environment is favorable for the warehousing and storage industry. However, some expressed concern that this could change if Illinois enacts an inventory tax.
- Some issues related to the availability of land were reported by warehousing and storage businesses. Many believe that there is a lack of sufficient warehousing and storage space near urban freight and intermodal yards. This could be due to problems inherent in urban areas such as irregularly shaped parcels of land, brownfield contamination, cost, permitting processes, or simply because there is no available nearby land. Therefore, freight carriers are required to travel to suburban warehousing and storage facilities.

## **Conclusion**

Based on the results of the three components of the freight drill down – economic analysis, workforce analysis, and review of policy and regulatory barriers – CMAP and CWIC identified several industries and occupational groups of interest. These areas include: trucking, freight transportation arrangement, transportation equipment rental and leasing, and package manufacturing. These stood out due to the opportunities for these industries and occupational groups to generate significant additional economic growth and job opportunities with strategic support and investment from both the economic and workforce development systems. Further investigation into these areas is required before developing specific initiatives. The stakeholders interviewed for this report expressed enthusiasm about the future of the freight cluster and its importance to the region, and many indicated a willingness to participate in any discussions that stem from the results of this study, and to contribute to the implementation of strategic initiatives aimed at capturing these benefits.