Chicago Metropolitan Agency for Planning

233 South Wacker Drive
Suite 800
Chicago, Illinois 60606

312 454 0400
www.cmap.illinois.gov

MEMORANDUM

To: **Economic Development Committee**

From: **Brett Baden, Senior Economist**

Date: **April 19, 2011**

Re: **Cluster Drill Down Update**

GO TO 2040 recommends that CMAP perform research to "drill down" into the Chicago region's clusters of industrial specialization in order to identify workforce, infrastructure, financing needs, and to provide strategies for coordination and communication. The goal is to provide a deeper understanding of the specializations in the region to policy-makers, to identify any needs that the public sector can address, and to address and encourage economic growth. The drill down report on the freight cluster will be the template for several CMAP drill down reports into other clusters. These reports will be completed in partnership with the Chicago Workforce Investment Council (CWIC). CMAP and CWIC staff will present the drill down methodology that will be used as well as how the freight cluster was defined, as described in the pages attached.

ACTION REQUESTED: Discussion

###

Chicago Metropolitan Agency for Planning

CHICAGO WORKFORCE INVESTMENT COUNCIL

Cluster Drill Down Report Methodology

The cluster drill down will contain analyses not produced or collected elsewhere that will complement other cluster-oriented work. The report will begin with some historical background on the industry in the region, and then will summarize some of the core challenges the cluster faces. The report will then focus on several analytic components for an in-depth understanding of the freight cluster. The report will conclude with recommendations to strengthen and grow the freight cluster.

I. Economic Analysis

Cluster Industry Economic Multipliers. This analysis will show how the freight industry is linked to other industries in the region. The analysis will look at the economic impact multipliers from input/output models that measures the economic effects of policy interventions.

Economic Base Analysis This type of analysis looks at industries that are more concentrated within a region than the rest of the nation, and how this concentration serves to provide additional local employment that would not exist otherwise.

Shift-Share Analysis This type of analysis compares regional, industry-wide, and nation-wide business trends. This is a standard practice in clusters analysis, but has not been done in the Chicago region to date.

Business Starts / Closures Analysis CMAP has partnered with World Business Chicago and the Chicagoland Chamber of Commerce track where and when new businesses begin operation. This analysis will also look at where businesses move to the Chicago region from, and where they move out of the Chicago region to.

II. Labor Force Analysis

Workforce Development Analysis This component of the analysis seeks to understand the landscape of workforce providers and programs, and to identify duplication, gaps, best-practices, and opportunities for improvement, especially in the areas of alignment with employer needs, and coordination between providers.

Occupation and Career Analysis This component will develop an understanding of the occupational structure of the industries within the cluster; the education, skills and experiences required to get different jobs within the cluster; career pathways available within the cluster; and wages available in different occupations within the cluster. This

analysis will be two-stage: the first, drawing on public data and existing research, will provide a general picture of employment in the cluster; the second, involving interviews or surveys with selected local companies, will refine and confirm the picture developed in the first stage to ensure local accuracy, and will add additional detail and depth.

Labor Market Sizing and Forecast This component will provide detailed information on the demand for labor in the various industries and occupations comprising the cluster, as well as to provide near- and medium-term projections. Additional desired outputs from this component include anticipated openings, workforce demographics, existing labor supply, and new labor supply. To the extent practicable, these outputs will be categorized by industry, occupation and geography

III. Policy Analysis

Barriers to Business Operations. This analysis will add value to freight policy discussions by bringing detailed information specifically about regulatory and institutional barriers to freight business operations in the region. Several reports have addressed this topic in part, but this report will be more comprehensive and will include specific implementation actions to address business impediments. Examples of this include parking restrictions, night-time delivery restrictions, poor information about routes and regulations across towns.

IV. *Recommendations and Conclusion*

The analyses and research findings will be presented to industry leaders, policy-makers, and other stakeholders to develop specific and realistic strategies. The focus of these strategies will be on how to address the challenges identified and pursue opportunities that strengthen the freight cluster. This section will include recommendations and outline next steps for implementation.

Chicago Metropolitan Agency for Planning

CHICAGO WORKFORCE INVESTMENT COUNCIL

Defining the Freight Cluster: Scope and logic of the freight cluster definition used for the CMAP-CWIC Freight Study

Given that multiple definitions of "cluster" exist, and that several approaches exist for scoping a specific cluster, CMAP and CWIC are using this document to make clear how the freight cluster will be defined and scoped for the purposes of this study. Broadly, CMAP and CWIC understand a cluster as a group of companies and activities that are geographically co-located and are engaged in similar, connected, or complementary activities. The cluster is centered on a core industry—in this case, freight—and encompasses other firms and institutions that the core industry relies on, benefits from, purchases from, or sells to. However, despite this straightforward definition, the inclusion or exclusion of an industry is not always straightforward. Therefore, CMAP and CWIC have had to clarify additional rules for inclusion.

What is a Cluster?

Many individuals and organizations have proposed slightly differing definitions for the term "cluster," but all of them share a focus on geographic proximity and the variety of inter-firm relationships, dependencies and benefits. One concise definition that fits this project's approach comes from *The Economic Impacts of Go To 2040*, produced by The Chicago Community Trust and Affiliates: "Economic 'clusters' are interdependent groups of firms and related institutions that gain benefits from their proximity and interactions."

CMAP and CWIC have chosen, for the purposes of this study, to categorize firms into one of four categories that comprise the freight cluster: core; direct supply and input; indirect support and infrastructure; and customer. These categories are defined as follows:

- *Core:* Companies directly involved in the movement of goods;
- *Direct Supply and Support:* Companies that provide necessary or value-additive goods or services to the freight industry, whose health is tied to the health of the freight industry, and who are more likely to locate in an area with a strong freight industry;
- *Indirect Support and Infrastructure:* Companies (and other organizations) that provide generalized support or infrastructure-related services for freight activities; and
- *Customer:* Those companies that rely heavily on freight services and are affected by the quality and extent of those services, and are therefore more likely to locate in an area with a strong freight industry.

Guidelines for Inclusion

CMAP and CWIC reviewed freight clusters defined by others, adopting what was appropriate from the *Go To 2040* report and the US Economic Development Administration-sponsored *Unlocking Rural Competitiveness* study. However, the team also conducted its own exercise of determining what to include and exclude, examining the entire list of nearly 1,200 six-digit NAICS codes, and coding each as "In" or "Out" of the cluster, based largely on the four-category model outlined above. However, for certain NAICS codes, the model could be used to support or oppose inclusion. To deal with these, the team developed a set of additional guidelines governing inclusion.

In general, the team operated from the principle that, *to be included in the study, an industry should be straightforwardly a freight industry (e.g., a company that transports shipping containers from ports to buyers), or it must be observably related to freight activities, be related to the movement of goods into or out of the region, and, preferably, gain some advantage through co-location with other industries in the cluster (here, location quotient was used as rough proxy)*:

- *Inter-city movement*. The team chose to exclude those industries focusing primarily on the movement of goods within the city or region, and not tied into the broader freight industry. Thus, while regional, same-day truck shipments of bulk agricultural goods are included, home grocery delivery are not.
- *Importance of industrial geography*. The team chose not to include the manufacture or supply of all major inputs to core freight activities, tending to exclude those activities that lack a disproportionate relationship to core freight activities and a compelling operational or marketing logic to locate in major freight nodes. The team chose to include those activities apparently and logically more likely to locate near their freight customers.
- *High location quotient*. The team used location quotient (LQ) as one indicator of an industry's presence being connected to the region's strength in freight, rather than due to the general distribution of industries in the US. The former—implied by an LQ above 1.0—was considered an argument for inclusion. However, LQs were not considered dispositive evidence.

Notable Exclusions/Inclusions

Most decisions to include or exclude industries from the cluster were obvious and uncontroversial. However, several industries were considered borderline. These industries—and their inclusion or exclusion—are discussed here.

- *Pipelines* (Excluded). Although pipelines move goods—primarily oil and gas—between cities, they are excluded from this study because the means, the infrastructure, and the

companies are very different between transportation via pipeline and via surface freight transport by vehicle.

- *General construction and facility operations* (Excluded). Freight companies will require construction and facility operations groups to build, maintain and operate the facilities central to their business, and, in that sense, such companies are critical to the freight industry. However, construction and operations firms will be present to support any businesses—there is little special connection with freight. Further, including this would begin to stretch the borders of the cluster to highly tangential activities.
- *General vehicle and craft manufacturing* (Excluded). Despite being essential to freight movement, the manufacture of trucks, aircraft, and rail cars is not included, largely because they do not display a greater tendency to locate in major freight nodes—see aircraft in Washington, auto in Michigan and Alabama, ships in the northeast and south.
- *Special vehicle and equipment manufacturing* (Included). Manufacturers specializing in freight industry requirements appear to be disproportionately located in Chicago (e.g., Packing Machinery Manufacturing has an LQ of 3.02), and may gain proximity advantages, and are therefore included.
- *Warehousing* (Included). Warehouses are both logically and demonstrably more concentrated at freight hubs, and warehousing is highly central to logistics. Therefore, warehousing is included in the study.
- *United States Postal Service* (Included). Despite its government relationship and attendant unique characteristics, which complicate the analysis, the USPS is such a large player in the movement of goods between cities that the team decided it must be included in the study. The USPS also contracts work to other postal carriers with some regularity; omitting USPS would cause the analysis to be incomplete.

The following six-digit NAICS codes are considered to constitute the freight cluster

Core	Direct Supply/Input	Indirect Support/Infrastructure	Customer
481112 – Scheduled Freight Air Transportation	321920 – Wood Container and Pallet Manufacturing	237310 – Highway, Street and Bridge Construction	454113 – Mail-Order Houses
481212 – Nonscheduled Chartered Freight Air Transportation	322211 – Corrugated and Solid Fiber Box Manufacturing	488111 – Air Traffic Control	488510 – Freight Transportation Arrangement
482111 – Line-Haul Railroads	322212 – Folding Paperboard Box Manufacturing	488119 – Other Airport Operations	
482112 – Short Line Railroads	322213 – Setup Paperboard Box Manufacturing	488190 – Other Support Activities for Air Transportation	
483111 – Deep Sea Freight Transportation	322214 – Fiber Can, Tube, Drum and Similar Products Manufacturing	488210 – Support Activities for Rail Transportation	
483113 – Coastal and Great Lakes Freight Transportation	326212 – Tire Retreading	488310 – Port and Harbor Operations	
483211 – Inland Water Freight Transportation	333924 – Industrial Truck, Tractor, Trailer, and Stacker Machinery Manufacturing	488320 – Marine Cargo Handling	
484110 – General Freight Trucking, Local	488991 – Packing and Crating	488330 – Navigational Services to Shipping	
484121 – General Freight Trucking, Long-Distance, Truckload	493110 – General Warehousing and Storage	488390 – Other Support Activities for Water Transportation	
484122 – General Freight Trucking, Long-Distance, Less Than Truckload	493120 – Refrigerated Warehousing and Storage	488490 – Other Support Activities for Road Transportation	
484210 – Used Household and Office Goods Moving	493130 – Farm Product Warehousing and Storage		
484220 – Specialized Freight (except Used Goods) Trucking, Local	493190 – Other Warehousing and Storage		
484230 – Specialized Freight (except Used Goods) Trucking, Long-Distance	532411 – Commercial, Air, Rail, and Water Transportation Equipment Rental & Leasing		
491110 – Postal Service	541614 – Process, Physical Distribution, and Logistics Consulting Services		
492110 – Couriers and Express Delivery Services	561910 – Packaging and Labeling Services		