

Expanding Regional Freight Information Resources for Northwest Ohio: An International Freight Resource Delivery System

*A Partnership between
GISAG Center, Intermodal Transportation Institute, The Urban Affairs Center
And The Lucas County Port Authority*

FINAL REPORT

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Project Summary

The primary objective of this project was to conduct a pilot study to evaluate the feasibility of tracking freight imports and export flows in the Upper Midwest region as part of the ongoing efforts undertaken in the development of the *Midwest FreightView* (MFV) system. To complete this, we proposed to subscribe to the *Port Import Export Reporting Service* (PIERS) Database to supplement the existing data within MFV.

At present, MFV is a distributed GIS developed to track patterns of intermodal freight movements within a seven state area of the upper Midwest. The principal objectives of this system are threefold: 1) to provide a means to spatially relate existing and projected freight flows to the regulatory environment and the physical capacity of the infrastructure, 2) to track trends in freight movement over time and space, and 3) to link freight movement to population characteristics and economic activity within the region. Users can take advantage of the GIS location-based query and selection capabilities as well as mapping functions to illustrate these relationships. The system has begun to evolve into an effective tool for economic development planning as a means to measure accessibility to markets, identify bottlenecks in the network that hinder freight flows, and for identifying feasible locations for warehousing, manufacturing, retail and intermodal connection facilities. The system displays data on highways, railroads, port facilities, intermodal connections, waterways and air transportation.

To date, the majority of the data deal with domestic freight movements. However, international trade plays a significant role in the movement of freight within the region and this study was undertaken to gain a better understanding of import and export movements into and out of the region. Air freight networks were first included into the database that contain both domestic and international traffic. A new portion of the reporting site was then developed to identify patterns of international trade flows into the U.S. with particular attention devoted to the Midwest.

The next phase was to include maritime flows that include intermodal transfer of freight at ports outside of the seven state region. For example, we needed a mechanism to report freight traffic originating in Japan, unloaded in Los Angeles, and transshipped onto container rail service traveling to Chicago. Given the significant increase in offshore manufacturing in recent decades and the growth of intermodal transportation for general cargo, it was originally argued in the project proposal that these data are important to gain an

understanding of freight flow patterns coming into the region and to identify how flows may be optimized to avoid congestion. Furthermore, it was argued that this information will be necessary for state departments of transportation, MPOs, and regional economic development authorities as freight traffic increases within the region over time. Of greatest importance to the study was the value of this information to the local economy of Northwest Ohio through a detailed investigation of freight traffic entering the region through east coast and gulf ports that could be diverted through the Port of Toledo.

As a result, we used the funding granted in this project to acquire import/export volume data from the **Port Import Export Reporting Service** (PIERS), a highly detailed data reporting service for waterborne transportation. PIERS collects export data from bills of lading at all U.S. Ports and obtains import data from vessel manifests at U.S. Customs entry points. According to PIERS, approximately 25,000 bills of lading are obtained every day (Commonwealth Business Media, 2005)*. These data sources provided valuable data on country of origin (including port), port of entry, destination location for imports, and origination location, U.S. port of exit, and destination port overseas.

The major obstacle to overcome in acquiring these data was the cost. PIERS charges \$16,000 monthly for U.S. import data alone. For Midwest imports at a university rate, PIERS charges \$5880 monthly for both import and export data. We therefore proposed to negotiate with PIERS to acquire one month's data (for the representative month of August, 2005) to input into the system as a means to demonstrate its feasibility. Unfortunately, a number of difficulties and restrictions were encountered which suggest that a continued subscription to PIERS is not advisable at the present time.

First, PIERS does not permit the display of the raw data within MFV due to disclosure limitations specified in the purchase agreement. We therefore set up an alternative framework for storage, analysis and display of the data outside of MFV where we could retrieve selected portions of the database and report the resulting information in aggregated form. While this provides us with an excellent source of data that we can store and manage in the GISAG, we will never be able to incorporate it in MFV. However, the data can be displayed and reported in aggregate and in derived formats that combine freight flows with other variables in the database. It is also a valuable resource in any analysis performed in-house which can provide important insights for project researchers and can provide information which can be reported in MFV without violating disclosure agreements

We also did not anticipate that many of the fields in the database were incomplete—particularly with regard to the destination and origin cities of goods shipped into and out of the region. The database had complete records of the consignees of the shipments, but their locations were often not where the shipments were originating from or ending at. In fact, most of the origin and destination fields in the database were empty. This was found to be a very significant limitation in the utility of the database in terms of describing the flow of commodities. It thus provides the strongest argument not to subscribe further to the service.

One extremely useful application of the database however, was to track commodity movements into and out of the region that are shipped through East Coast and Gulf ports. We are currently working with The Port of Toledo in providing information regarding commodities that can be diverted away from those ports and through the Great Lakes. It is argued here that this information will justify the expenditure of the funds if the result is a higher volume of import traffic into the Port of Toledo. The original proposal noted that one of the main objectives envisioned for MFV was to generate and maintain a database that would be available for the Port Authority, the University of Toledo, and other interested decisionmakers and stakeholders within the region.

* <http://www.piers.com/about/>

In summary, the PIERS data obtained for the month of August, 2005 provided a significant amount of information regarding the volume of freight traffic flowing into and out of the upper Midwest with regard to the types of commodities, the volume of cargoes shipped, the ports of entry and exit, and the consignees who originally ordered the shipments. However, these data were of limited value if we cannot adequately determine specifically where these shipments are originating and ending. These data are useful in tracking the ports through which these commodities are shipped, but it is the opinion of this investigator that the cost of the data is prohibitive for this purpose alone.