

OHIO DEPARTMENT OF TRANSPORTATION
QUARTERLY RESEARCH REPORT



For Quarter Ending: March 31, 2004
Date Submitted: April 29, 2004

Project Title: Upper Midwest Freight Corridor Study

Research Agency: University of Wisconsin-Madison

Principal Investigator(s): Dr. Teresa M. Adams

State Job No.: 134138

Agreement No.: 20252

Pooled Fund Study No. (if applicable): TPF-5 (078)

Project Start Date: August 19, 2003 Contract Funds Approved: \$360,003.80

Project Completion Date: Oct. 19, 2004 Spent To Date: \$54,455.24

% Funds Expended: 15.1% Work Done: 49.35% Time Expired: 52.8%

List the Technical Liaisons and other individuals who should receive copies of this report: Suzann Rhodes (ODOT), Stew Sonnenberg (FHWA)

SUMMARY OF PROGRESS FOR QUARTER:

Attach a progress schedule consisting of graphical information depicting (1) a schedule of research activities tied to the tasks defined in the proposal, (2) a comparative status of actual versus estimated expenditures, and (3) a percentage completion of the research.

ACCOMPLISHMENTS

Task 1

- For the administrative issues part of the study, the research group continued to compile information from a variety of sources including:
 - *Effect of Truck Weight on Bridge Network Costs NCHRP Report 495 (2003)*
 - *Federal Truck Size and Weight Policy: Looking Beyond the Comprehensive Truck Size and Weight Study, Workshop Proceedings U.S. DOT (2002)*
 - *Effects of Truck Size and Weights on Highway Infrastructure and Operations: A Synthesis Report, Center for Transportation Research, UT at Austin (2001)*

- *Longer Combination Trucks, Potential Infrastructure Impacts, Productivity Benefits, and Safety Concerns, GAO (1994)*
- *The Productivity Effects of Truck Size and Weight Policies, Oak Ridge National Laboratory (1994)*
- The research group at the University of Toledo continued to assemble all available capacity data for railroads and highways within the corridor and linked these data as attributes to the cartographic elements in the GIS database. Requests have also been worked on for additional data from state, provincial, and MPO sources.
- Work has just begun on this same task for motor terminals, rail yards, intermodal transfer facilities, airports and ports in the corridor.
- The research team at the University of Illinois continued their work on identifying their data gaps and the DOTs that need to be contacted to fill the gaps. Made a “second round” of contacts of these DOTs, working with the group from Toledo.
- A plan for collecting data from MPOs was developed by the research group, as was briefly noted above. The UIC team met with four of these MPOs and the Toledo team met with several others, collecting data from all meetings.
- The previous listing of potential freight performance measures has been revised based on later input.
- Work was finished on contacting participants in other corridors to understand their practices relative to performance measures.
- Research was also done to see if possible measures on list noted above can be used without significant added data collection.

Task 2

- Finished work on documenting the data for highway and rail capacity; other data regarding administration, performance and flows is currently being collected and processed.
- A preliminary draft of an internet-based system to report and display capacities within the corridor was presented to the Steering Committee again in March; additional features are being added—particularly area-based economic and population data.

Task 4

- Work continued on defining variables for capacity of motor terminals, rail yards, intermodal transfer facilities, airports and ports.

Task 5

- The survey for the private sector was catalogued electronically and then analyzed by the research team.
- Contacts were made regarding performance measures in the public and private sectors for freight transportation to learn more about their implementation.

Task 6

- Work was done to update the files available on the website, such as archived meeting minutes and presentations

Task 7

- The research team fully utilized the time they had with the steering and advisory committees on March 29 and 30, 2004 to get their feedback on various parts of the study and interim results.
 - To assist the researchers working on the clearinghouse of resources, about one hour was given to the steering committee representatives to share what was going on with freight transportation in their agency.

- On the second day of the meetings, a format was used so that after each presentation by the research team the committees broke up into smaller groups and discussed what they had just heard. The groups then had time to give feedback to the researchers and to ask questions. Many critical insights were gained during this time for all parts of the study.
- Also see section of this report titled *Contacts and Meetings* for additional meetings conducted by the research team.

Task 8

- Finished work on the computation procedures for highway and railroad capacity. Begin development of capacity computation procedures for motor terminals, rail yards, intermodal transfer facilities, airports and ports.
- Capacity computations for highways and railroads have been completed. Capacity computations for motor terminals, rail yards, intermodal transfer facilities, airports and ports have begun.

Task 9

- Work continued on entering the current collection of resources on hand at the Midwest Regional University Transportation Center. At the end of the quarter, about 80 resources were entered into a database. This database is still unofficially accessible on the MRUTC's main website (www.mrutc.org/doclib).
- Prepass E-Screening sites data was plotted on the corridor map and attributes were assigned.
- The matrix showing CVO projects being implemented or planned across participating states and/or different agencies was populated with more projects, like Advantage CVO, Electronic one-stop shopping etc.
- CVISN impacts on freight were explored and documented. A framework for detailed benefit-cost analysis was developed.

Task 10

- Research team in this area finished compiling the list of potential case studies from several sources. To narrow this list from over 50 to about six, selection criteria was developed and critiqued by the research team and study committees. In the process of gathering potential case studies, the team collected more resources that will aid in the comprehensive literature search.
- The outline of the report of best practices, which contains the elements to focus the research on, continues to be evaluated by others.

Task 11

- Capacity computations for highways and railroads have been completed. Capacity computations for motor terminals, rail yards, intermodal transfer facilities, airports and ports have begun.
- Began coding link traffic volumes for Illinois and Minnesota.
- For administrative impediments, the researchers used interview materials and reference literature to identify impacts in the following categories:
 - Highway Infrastructure
 - Safety
 - Traffic Operations
 - Environment
 - Economic Productivity and Modal Competitiveness
 - Finance and Energy
 - Compliance and Enforcement

- Intergovernmental Issues

Task 12

- Prepared a memorandum to document the highway link selection process.

Task 13

- Completed analysis of 1998 and 2001 Waybill data, 1997 and 2002 Commodity Flow Survey (CFS) data, and Freight Analysis Framework (FAF) data. Extracted relevant information from these sources.
 - Cross checked DOT link traffic volume data against HPMS and FAF data.
- Linear Referencing Scheme for plotting ADT and other data has been developed and is being implemented.

Task 14

- The second workshop took place on March 29 and 30, 2004 in Milwaukee, Wisconsin.

Task 16

- Work began on research into data standards for reporting capacity and usage data from agencies and firms within the corridor.

Final Report

- A high level outline of the final report was done before the meeting of the steering and advisory committees. Each area of the study is responsible for filling in the details of the outline for their parts. Several of the areas have begun this work. It is currently being reviewed internally by the research team. *(Current draft of outline is attached to this report)*
- Several documents, maps, and tables created for presentation at the second workshop will be used in the final report.
- Work continues on the reporting of the performance measures area of the study. Potential measures have been listed and a draft framework for implementation has been completed. The outline has been completed and work has begun on the writing of this report.

DEFINITIONS OF ALL TASKS

Task 1: Collect data from public and private agencies/Literature review for performance measures and administrative issues.

Task 2: Design and implement database of freight information for optimal organization and easy access.

Task 3: Define, organize and layout the highway and rail networks that will be part of the study.

Task 4: Identify and map the significant airports, seaports and intermodal facilities in the study area.

Task 5: Release survey for planning agencies across the country, compile results of performance measure questions and administrative issues questions.

Task 6: Design and launch study website.

Task 7: Conduct State DOT and other stakeholders visits and interviews.

Task 8: Determine the capacity of the infrastructure identified in tasks 3 and 4.

Task 9: Research freight transportation planning activities in the region, including ITS CVISN plans.

Task 10: Research best practices for corridor studies.

Task 11: Identify system level bottlenecks that inhibit the flow of freight on the transportation network, including administrative impediments.

Task 12: Document data characteristics.

Task 13: Analysis of freight demand data.

Task 14: Plan and execute second steering/advisory committee meeting.

Task 15: Identify next steps for demand data, such as forecasting.

Task 16: Determine future bottlenecks.

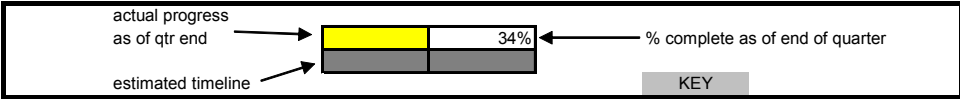
Task 17: Plan and execute concluding workshop for the study.

TASKS

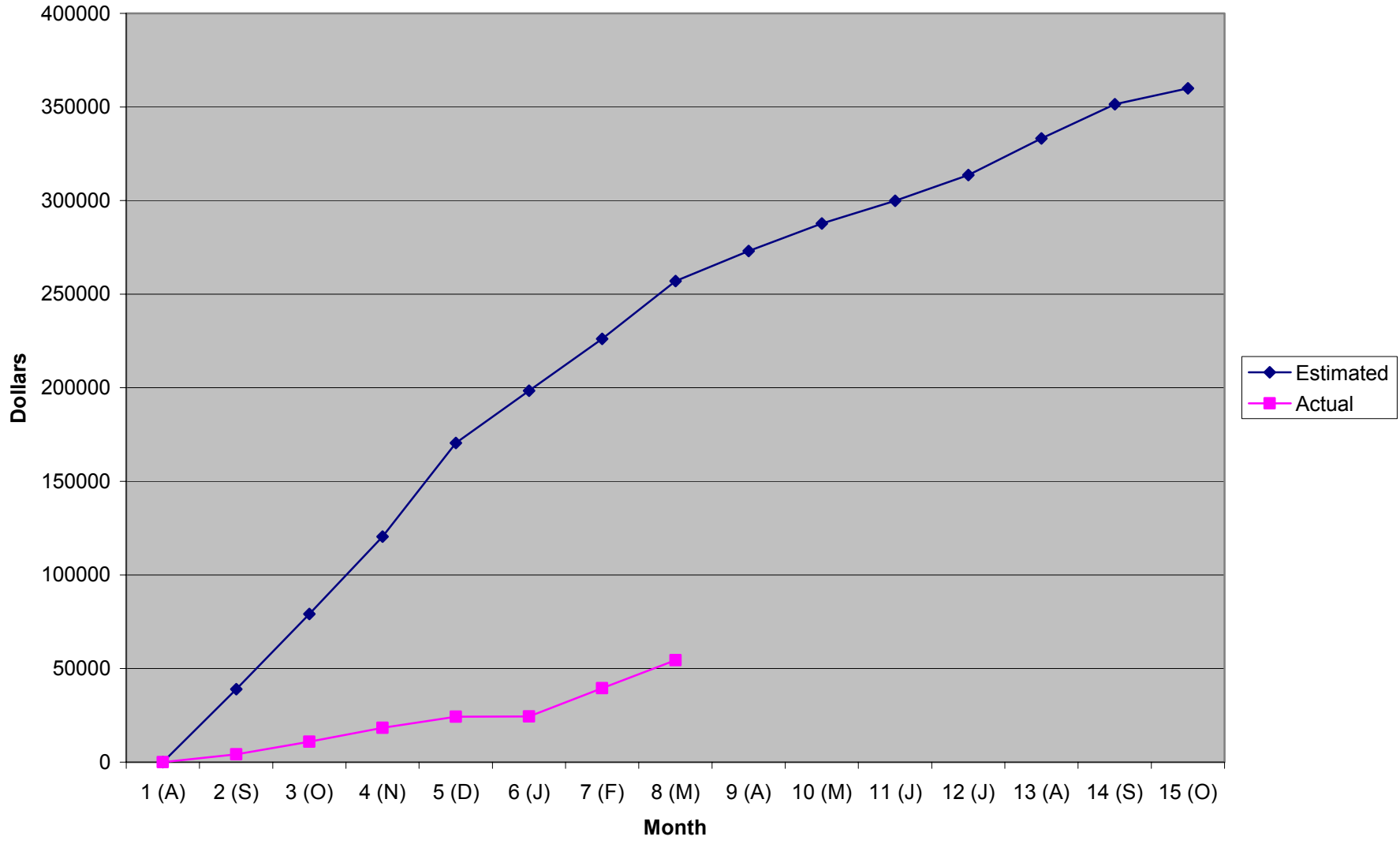
MONTH

TOTAL TASK COMPLETE

	August	Sept	October	Nov	Dec	Jan	Feb	March	April	May	June	July	August	Sept	October	
1	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	85%							85%
2	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	93%							93%
3	Yellow	Yellow	100%													100%
4			Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	90%							90%
5	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	92%							92%
6	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	75%							75%
7	Yellow								39%							39%
8		Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	80%							80%
9		Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	25%							25%
10			Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	35%							35%
11			Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	41%							41%
12							Yellow	Yellow	10%							10%
13				Yellow	Yellow	Yellow	Yellow	Yellow	30%							30%
14					Yellow	Yellow	Yellow	Yellow	95%							95%
15									0%							0%
16								Yellow	20%							20%
17									0%							0%
Final Report	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	22%							22%



Costs Estimated vs. Actual



PROPOSED WORK FOR NEW QUARTER:

Task 1

- Research team will continue to compile publications and other documents regarding previous regional freight studies to learn about impacts of inconsistencies in regulations.
- Visits with MPOs in the corridor area will be completed by the teams at Toledo and UIC. Data that is collected from these visits will be catalogued and added to the database.
 - Continue to follow up with State DOT contacts as necessary.
- Special attention will be given to the gathering of capacity data for motor terminals, rail yards, intermodal transfer facilities, airports and ports within the corridor, again followed by the linkage of these data to the cartographic elements in the GIS database

Task 2

- In support of the data collection and organization efforts, Toledo researchers will document the contents of other components of the database dealing with administration, flows, and performance metrics on the project web page as new data are added to the database.
- Continue work on the internet-based system to report and display capacities within the corridor using map, graphic and text formats. Obtain all necessary licenses to open up the site to agencies.
- Toledo will continue ongoing duties of secure FTP site, including maintaining protocols and permissions for transfer of data between sites.

Task 4

- Continue to define the necessary variables in capacity computations for motor terminals, rail yards, intermodal transfer facilities, airports and ports within the corridor, and include them in the data documentation on the Toledo Project Web Site.

Task 5

- Final analysis of the surveys will be completed. One-on-one contacts with selected respondents from the public and private sectors will also be completed.

Task 6

- Efforts will be made to update parts of the website as needed, such as the calendar and resources (which relates to task 9).

Task 7

- Interviews with stakeholders in multi-jurisdictional efforts will be done, possibly a site visit to follow up.
- To research freight efforts in the region, follow up will be done with state and provincial representatives from the second workshop. Interviews with MPOs and other freight research organizations in the region will be done if necessary.
- Interviews will be done by the administrative issues part of the study to clarify issues, if needed.

Task 8

- Complete development of capacity computation procedures for motor terminals, rail yards, intermodal transfer facilities, airports and ports.
- Capacity computations for intermodal sites will be completed by researchers at the University of Toledo.

Task 9

- Current collection of resources to be entered by end of the quarter. The researchers will then develop a plan to collect additional resources, using the internet and resources of the University of Wisconsin. Work to accomplish this will be done.
- Team will also begin to research the feasibility of continuing the clearinghouse beyond the study.
- Interface improvements to the internet site will be made for the clearinghouse.
- Work to continue on the CVISN synthesis, including:
 - Populate and update the CVO projects matrix and CVISN Deployment status matrix.
 - Linear Referencing Scheme to be implemented and write scripts to facilitate management of data and dynamic segmentation for querying.
 - Benefit-Cost analysis to be completed and location of candidate sites for CVISN deployment to be identified.
 - Draft results and conclusions to be documented.

Task 10

- Of the potential case studies, five or more will be selected by using a set of weighted criteria.
- The structure of the report will be finalized and work will begin on the research efforts for this.

Task 11

- Capacity computations for intermodal sites will be completed by researchers at the University of Toledo.
- This group will also continue work on the internet-based system to integrate capacities and flows within the corridor. This will start by incorporating capacity computations into the reporting system using map, graphic and text formats. There is also a plan to refine the user interface to accommodate a variety of uses ranging from casual browsing to in-depth querying operations.
- The research group at the University of Illinois at Chicago will finish coding their data in the GIS platform developed by the Toledo team.
- In terms of administrative impediments, the researchers will relate impacts to the Upper Midwest Region and identify impact measures.

Task 12

- At UIC, continue to document data catalogue, data collection and cleaning process, and quality of data

Task 13

- Clean and cross-check demand data if needed. Analyze data to produce the information to be included in the final report.

Task 14

- Compile and send out meeting minutes to the study's stakeholders

Task 15

- Participate in on-going discussions regarding the short-term and long-term ideas for this regional effort

Task 16

- Continue to develop and document data standards for reporting capacity and flow data into project reporting site.

Task 17

- Select meeting location and then handle logistics of food, lodging, and room reservations at this location.
- Develop and implement a registration process for the two committees, preferably electronic. Will also need to plan for what staff will be attending to assist.
- Develop and finalize an agenda for the meeting.
- Look into remote access for this meeting.

Final Report

- The report outline will be finalized by the research team and steering committee.
- Submit a draft report to ODOT for review.

IMPLEMENTATION (if any):

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PROBLEMS & RECOMMENDED SOLUTIONS (if applicable):

Describe any problems encountered or anticipated that might affect the completion of the project within the time, scope, and fiscal constraints set forth in the contract, along with recommended solutions to those problems. NOTING DIFFICULTIES IN THIS SECTION DOES **NOT** CONSTITUTE A REQUEST TO MODIFY THE PROJECT. Requests for additional time, money, or scope revisions must be submitted in a separate letter to the Office of R&D Administrator.

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EQUIPMENT PURCHASED (if any):

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CONTACTS & MEETINGS:

Describe any meetings or contacts with ODOT technical liaisons and other pertinent individuals relative to this project.

- UIC research team members had a conference call with Minnesota DOT representatives to discuss data issues, 1/21/04
- This same group met with Chicago Area Transportation Study (CATS) staff to discuss data needs (at UIC), 1/26/04
- Kazuya Kawamura (UIC) made a presentation at CATS Intermodal Advisory Task Force meeting, 2/5/04
- UIC team met with Rockford MPO staff to obtain data (in Rockford), 2/11/04
- Same group made a presentation at the Urban Transportation Center (UIC) Advisory Board meeting, 2/18/04
- UIC research team members had a conference call with Quad City MPO to discuss data needs, 2/18/04
- Representatives from UIC and Toledo met on the campus of the University of Toledo for one day to discuss outstanding data issues and finalize the study highway network, 2/27/04
- UIC research team members had a conference call with Southeastern Wisconsin Regional Planning Commission to discuss data needs, 3/3/04
- Kazuya Kawamura met with Chuck Allen (Norfolk Southern Railroad) to discuss data from the CREATE project in Chicago, 3/5/04
- Peter Lindquist (Toledo) made a presentation on the data reporting site for this study at the Association of American Geographers Annual Meeting, Philadelphia, Pennsylvania, 3/17/04
- Travis Gordon (MRUTC) and Kazuya Kawamura made a presentation on the study at the Transportation Research Forum, Northwestern University, 3/22/04

- On March 29 and 30, 2004, the steering and advisory committees met with the research team in Milwaukee, Wisconsin. The first day was broken up into three parts.
 1. The research team met for several hours in the morning to discuss progress on the study and to finalize presentations for the meeting. The researchers also discussed some outstanding issues regarding data, administrative issues, and next steps. This is where the outline of the final report was created.
 2. In the afternoon of March 29th, the research team was joined by members of the steering committee. For over an hour, the state DOT representatives

shared with the group how their agency was addressing freight transportation issues. Next, the research team discussed the corridor highway network selection with the committee. Finally, the group talked at length about the future of these efforts, beyond the study.

3. A reception took place in the early evening, where Doug Frank, Director of Purchasing for Schneider Logistics spoke to study stakeholders.

On the second day of meetings, the advisory committee joined the others to listen to presentations by the research team on their progress and interim findings. After each presentation, the crowd was broken up into smaller groups to discuss what they had just heard. The groups then had time to give feedback to the researchers and to ask questions. The second day of meetings lasted from 7:30am to 3:00pm. Attendees for these meetings are below:

First	Last	Organization	Title
Teresa	Adams	University of Wisconsin-Madison	Professor, Civil and Environmental Engineering
Raja	Andela	University of Toledo	Research Assistant
Doris J.	Bautch	U.S. Maritime Administration-Great Lakes Region	Director
Sandra	Beaupre'	Wisconsin Department of Transportation	Director of Planning
Tom	Beck	Indiana Department of Transportation	Rail Planner
Jason	Bittner	Midwest Regional University Transportation Center	Program Manager
Sarah	Brehm	Midwest Regional University Transportation Center	Program Assistant
Steven A.	Call	Federal Highway Administration	Planning and Urban Mobility Engineer
John	Cater	Federal Highway Administration-Iowa	Planning and Development Manager
Amar	Chadha	Manitoba Ministry of Transportation	Director, Transportation Systems Planning & Development
Bob	Cook	Transportation Development Association of Wisconsin	Executive Director
Bruce	Dahnke	Dahnke Consulting	Intermodal Advisory Council Member
Matt	Dietrich	Ohio Rail Development Commission	Assistant Director
John	Duncan Varda	DeWitt Ross & Stevens s.c.	Counsel
David R.	Dysard	Toledo Metropolitan Area Council of Governments	Vice President of Transportation
Jay	Franke	Northwestern University Transportation Center	Assistant Director
Laura	Franke	Midwest Regional University Transportation Center	Project Assistant
David	Franklin	Federal Highway Administration-Indiana	Community Planner
Ujaval	Gandhi	University of Wisconsin-Madison	Project Assistant
William	Gardner	Minnesota Department of Transportation	Director-Frieght Planning & Development
Travis	Gordon	Midwest Regional University Transportation Center	Project Manager
Jiwan D.	Gupta	The University of Toledo	Professor
Jack	Hall	Northeast Ohio Areawide Coordinating Agency	Senior Transportation Planner
Stephanie	Hickman	Federal Highway Administration-Wisconsin	Community Planner
Ariel	Iris	Chicago Area Transportation Study	Freight Transportation Planning Cadre
Kazuya	Kawamura	University of Illinois - Chicago	Assistant Professor, Urban Planning

			and Policy Program
Peter S.	Lindquist	The University of Toledo	Associate Professor
Mark	Locker	Ohio Department of Transportation	Transportation Planner
Wut	Malaikrisanachalee	University of Wisconsin-Madison	Project Assistant
Sue	McNeil	University of Illinois - Chicago	Director and Professor, Urban Transportation Center
Dean	Mentjes	Federal Highway Administration-Illinois	Mobility Engineer
Craig	O'Riley	Iowa Department of Transportation	Transportation Planner
Francis	Owens	Iowa Corn Growers Association	
Lane	Pille	Midwest Regional University Transportation Center	Project Assistant
Patrick	Pittenger	Southeastern Wisconsin Regional Planning Commission	Senior Planner
Gerald	Rawling	Chicago Area Transportation Study	Director of Operations Analysis
Suzann	Rhodes	Ohio Department of Transportation	Administrator
Ann Z.	Schell	East Central Wisconsin RPC	Assistant Director
Matt	Selhorst	Ohio Department of Transportation	Deputy Director
Keith	Sherman	Illinois Department of Transportation	Section Chief, Planning and Systems
Scott	Sigman	Ports of Indiana	Senior Director, Intermodal
Stew	Sonnenberg	Federal Highway Administration	Urban Planning Engineer
Kevin	Soucie	Soucie & Associates	Consultant (representing CN)
Albert	Stanek	Wisconsin DOT	Intercity Planning Chief
Brian	Tremblay	Kraft Foods Inc.	Senior Buyer-Procurement Transportation
Mark A.	Vonderembse	The University of Toledo	Interim Director, Intermodal Transportation Institute
Ernie	Wittwer	Midwest Regional University Transportation Center	Director
Ge	Zhu	Urban Transportation Center, UIC	Research Assistant