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# Appendix E

## *Data Collection Strategy*

# Freight Data Collection Strategy

## ■ Key Findings

- The Kansas Statewide Freight Plan will rely on multiple sources of data, including commodity data, infrastructure data, and economic and industry data. Though multiple data sources have been identified in each of these categories, significant data gaps still exist. These gaps include county-level commodity flows, truck and rail volumes and values, and agricultural commodity flows.
- Obtaining county-level commodity flows is one of the key data concerns. Currently, no single source of commodity data is provided at the county level. County-level commodity flows offer an appropriate level of geography to support regional and state planning efforts. In addition, other data sets such as industry data are provided at the county level. Efficiencies can therefore be gained by using a uniform geography for all datasets.
- Two different strategies are available to KDOT to obtain the necessary data: 1) Purchase the TRANSEARCH data, or 2) Modify a blend of several publicly available datasets to produce data that is a good estimation of county-level commodity movements. There are advantages and disadvantages to both approaches:
  - TRANSEARCH data, though costly, provides a comprehensive dataset with county-level commodity flows for every transportation mode. Though it still requires some manipulation and sorting, it provides a consistent level of geography, commodity classification, and methodology. TRANSEARCH is produced by Global Insight, an economic and financial analysis, forecasting and market intelligence firm. They are currently compiling a quote for KDOT for a statewide commodity database. The quote should be available by May 2008.
  - The public data set approach is free of charge, and is readily available and can be updated by KDOT at any time. However, this approach requires a significantly higher level of effort and data manipulation to ensure consistency and usability of the dataset. FAF2 would be the main dataset used in this approach, and would be factored and adjusted by a variety of other datasets as listed in Table 2 of this memorandum.

## ■ Introduction and Background

The Kansas Department of Transportation (KDOT) is undertaking its first Statewide Freight Plan, which includes a system-level overview of freight movements in the State and the identification of key existing and emerging freight transportation, industry, and logistics trends affecting goods movement into, out of, through, and within Kansas. The study consists of seven tasks:

- Task 1: Creation of Data Collection Strategy;
- Task 2: Freight System and Commodity Flow Profile;
- Task 3: Economic Structure and Industry Logistics Patterns;
- Task 4: Public and Private Stakeholder Involvement;
- Task 5: Public Policy Profile;
- Task 6: Tools and Methods for Integrating Freight; and
- Task 7: Interim Report, Draft Final and Final Report.

Both current (2007/2008) and forecast (2030) data are required to support this effort. Current data sources will be used to describe existing conditions on the State's freight system, describe current commodity flow patterns and modal shares, and identify physical or operational chokepoints impacting the performance of the system. Forecast data will be used to predict future system performance and bottleneck locations, as well in changes in commodity flow patterns and modal usage patterns. These data will also be used to create performance measures to assess freight system performance moving forward.

This Technical Memorandum (TM) summarizes our data collection strategy by identifying key data needs to support the study's objectives, paying particular attention to the quantitative data needs Tasks 2 and 3, which will result in the development of profiles describing the State's infrastructure, commodity flow patterns, and key industries. This data collection strategy evaluates the degree to which existing sources can meet those needs, identifies potential data gaps, and describes our approach to filling those gaps. The final section of this memorandum includes a list of potential interviewees to support and enhance the quantitative data analysis tasks. A comprehensive list of freight data sources, including economic and industry data, network data, volume and performance data, and additional plans and studies for review, is provided in Appendix A.

## ■ Freight System and Commodity Flow Profile Data

A wide variety of quantitative data describing the State's industry make-up, its economy and demographic characteristics, and the extent and performance of its transportation system are required to complete Task 2 (Freight System and Commodity Flow Profile) and Task 3 (Economic Structure and Industry Logistics Patterns).

## Overview

The objective of these tasks is to identify and describe each of the State's freight modal systems and traffic levels. Data are required to support a comprehensive inventory of the statewide freight system infrastructure, including highways, feeder roads and access points, rail lines, intermodal centers, river ports, airports and special freight generators including distribution centers, feedlots, and other facilities. The volume and type of freight (in tons, value, and number of vehicles) moving over each modal system also need to be described and documented in a comprehensive commodity flow profile. This profile, which will include both current and forecast (2030) conditions will be used to help guide the identification of existing and potential bottlenecks, system deficiencies, safety and system performance issues, and opportunities of the multimodal systems. This analysis will be completed for current conditions and for the 2030 horizon year conditions.

## Data Needs

Data and informational needs to support these analyses include:

- **Network data** that describe the location, physical extent, and characteristics of the State's highway, rail, and aviation facilities.
- **Volume and performance data** that describe commodity and vehicle flows along the transportation network. These include:
  - **Truck volume data.** Having high-quality truck counts is important for both general planning purposes and modeling. Truck count data are critical to identify where impacts are greatest to the transportation system, as well as what improvements will most efficiently support truck movements or lessen truck impacts. In addition, future truck count data will allow us to predict the performance and weaknesses in the transportation system into the future. It will therefore guide the creation of longer-term, strategic investment decisions.
  - **Origin-destination data** include both commodity origin-destination information and truck trip origin-destination information. Commodity origin-destination information describes the combinations of origins and destinations for different types of goods in a state. Truck trip origin-destination information describes the truck movements that are required to move the commodities between origin-destination pairs. This data will be gathered for both current and future conditions.
  - **Commodity data** are necessary to develop the connection between goods movement and the economy. Because most truck trip tables are developed from commodity flow information, commodity information also allows for estimation of changes in truck volumes based on changes in economic activity. Commodity information is important to understand the time-sensitivity, or impacts of recurring delay, to goods. Also, because different industries have different supply chains, the commodity information can be traced to industries and used to determine

the relationship between the goods and the land use at the origin and destination. Detailed supply chain information (and therefore routing information) can be inferred from knowing the goods inside the truck. The relationship between commodities and industries also enables the economic impact of freight-related decisions to be estimated. Commodity information is key to being able to estimate the amount of demand for a particular mode, because mode choice is largely a function of the commodity type and the distance that the good is shipped. Therefore, commodity information is critical to performing truck-rail diversion analyses.

County-level data will be necessary in order to complete this plan as envisioned in the Scope of Work. County-level data is the generally accepted level of geography for statewide freight studies, since it provides sufficient detail to support planning recommendations at the regional and state level, while still retaining accuracy. Geographies smaller than the county level are very difficult to make accurate projections for because of limitations on data collection and synthesis techniques. In addition, most industry datasets are at the county level. Efficiencies can therefore be gained by ensuring a uniform geography of datasets.

- **Routing information** documents the specific roads that trucks use to travel from an origin to a destination. This information is important in estimating road utilization and in determining the most efficient network of roads to designate for special truck purposes. Most truck models have the option of using either shortest path (distance) or shortest travel time to route traffic. These are generally found to be accurate methods of predicting routes. However, for some trips, trucks use a set of roads that are unanticipated. For all origin-destination combinations, where there is concern that this may happen, origin-destination surveys can be amended to include questions on the roadways used between origin and destination pairs.

## Data Needs and Availability

Tables 1 and 2 describe network/infrastructure data, and volume/performance data required to meet the objectives of Task 1 and their current availability. Availability is described using a three-tiered scale:

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Data are available, no additional analysis required	Data are available, some modifications/analysis required	Data are not available or significant analysis/modifications required

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A detailed list of some of the data sources that will be used to support this phase is provided in Appendix A. They are summarized below in the Key to Tables 1 and 2.

## Key to Tables 1 and 2<sup>a</sup>

Data Acronym	Notes
FHWA	Federal Highways Administration. Sources from the FHWA include the Freight Analysis Framework (FAF2) dataset, which provides multimodal commodity flow information at the State and Metropolitan Area geography. It can also include studies and reports published through the FHWA.
FRA	Federal Railroad Administration. This includes the national Rail Network dataset.
BTS	United States Department of Transportation's Bureau of Transportation Statistics. Includes an intermodal terminals and facilities dataset, and general statewide transportation statistics.
KDOT	The Kansas Department of Transportation has a large amount of data that will be used for this analysis, including truck route and crash data, highway network and count data, cargo data, rail safety data and intermodal center data.
FAA	Federal Aviation Administration. Includes a Public Use Airports dataset, which includes information for every public use airport in the U.S.
U.S. ACE	United States Army Corps of Engineers, which publishes waterborne commerce statistics for all 50 U.S. states, ports, and inland waterways.
USDA	United States Department of Agriculture. Sources from the USDA include the National Agricultural Statistics Service, which provides current data and statistics about U.S. agricultural land and production.
STB	The Surface Transportation Board, the economic regulation agency for railroads. Publishes financial data, and the waybill sample. The latter includes the routes used by the waybill sample.
Port/Airport	This includes all statistics published by individual ports, included the Missouri river ports and airports.
DOD	The United States Department of Defense Office of Economic Adjustment publishes the boundaries and locations of all United States Military installations.

<sup>a</sup> Full descriptions of all of these sources are provided in Appendix A of this document.

**Table 1. Network and Infrastructure Data Needs and Availability**

Data Element	FHWA	FRA	BTS	KDOT	FAA	U.S. ACE	USDA	DOD
Highway Network	●			●				
Truck Routes				●				
Rail Network and Facilities		●	●	●				
Intermodal Centers	◐			◐				
Cargo-Handling Airports			●	●	●			
Commercial Rest Areas	●			●				
River ports and Terminals						●		
Distribution Centers Greater Than 1 Million Square Feet				◐				
Major Feed Lots and Grain Silos							◐	
At-Grade Crossings		●		●				
Military Installations								●

**Table 2. Volume and Performance Data Needs and Availability**

Data Element	STB	BTS	FHWA (FAF)	KDOT	Port/ Airport	U.S. ACE	USDA	Other
Truck Volume			◐	●				◐
Class I Rail volume	◐		◐					
Truck O/D			◐					
Rail O/D			◐					
Truck Commodity Detail			◐					
Rail Commodity Detail			◐					
Port Commodity Detail					◐	◐		
Air Commodity Detail			◐		◐			
Agriculture Commodity							◐	◐
Truck Routing				●				
Rail Routing	●			◐				
Truck Crashes			●	●				

## Data Gaps and Strategies

Tables 1 and 2 reveal several data gaps, where data is either partially available, or where it will require some modifications and/or analysis to be useful to the freight plan effort. Four identified data gaps that are of particular importance include:

- **County-Level Commodity Flows by Tonnage and Value.** There is currently no data source for county-level commodity flows. County-level commodity flows offer an appropriate level of geography to support regional and state planning efforts. In addition, other data sets such as industry data are provided at the county level. Efficiencies can therefore be gained by using a uniform geography for all datasets.
- **Truck Volumes by Movement Type.** Truck volume and value data is currently not available at the county geography in any dataset. Truck movements at the county level will form an important part of the commodity flow analysis and infrastructure analysis.
- **Freight Rail Volumes.** Freight rail data is currently not available at the county geography in any dataset. Freight rail movements at the county level will form an important part of the commodity flow analysis and infrastructure analysis.
- **Agricultural Flows.** Agricultural flows are currently underestimated in many public datasets. This means that their transportation needs, as well as their impacts on the transportation system, are also often underestimated. Although agriculture has been a historically strong industry in Kansas, its needs are now changing in response to demand for biofuels, as well as continued need for agricultural products. It is therefore necessary to gain an accurate understanding of the volumes and value of agricultural product moving over the Kansas infrastructure.

Two different strategies are available to KDOT to obtain the necessary data: 1) Purchase the TRANSEARCH data set, or 2) Modify a blend of several publicly available datasets to produce data that is a good estimation of county-level commodity movements. There are advantages and disadvantages to both approaches:

- TRANSEARCH data, though costly, provides a comprehensive dataset with county-level commodity flows across every transportation mode. Though it still requires some manipulation and data sorting, it provides a consistent level of geography, commodity classification, and methodology. TRANSEARCH is produced by Global Insight, an economic and financial analysis, forecasting and market intelligence firm. They are currently compiling a quote for KDOT for a statewide commodity database. The quote should be available by May 2008.
- The public data set approach is free of charge, is readily available, and can be updated by KDOT at any time. However, this approach requires a significantly higher level of effort and data manipulation to ensure consistency and usability of the dataset. FAF2 would be the main dataset used in this approach, and would be factored and adjusted by a variety of other datasets as listed in Table 2 of this memorandum.

## Data Acquisition Strategies

### *County-Level Commodity Flows by Value and Tonnage*

County-level, multimodal commodity flows are an essential data set for a statewide freight planning effort. Data at this geography is at an appropriate level to link freight transportation to specific infrastructure and to specific industries. In addition, the industry data sets are provided at the county level. A consistent level of geography therefore allows for easier combination of the data to support planning efforts. County-level commodity flows are multimodal, and include: truck, rail, air, pipeline, and water. Truck and freight rail flows will be described in more detail below.

**Data acquisition options:** If TRANSEARCH is purchased, data will automatically be provided at the county level. If KDOT decides not to enter into a data purchase agreement, then the Freight Analysis Framework (FAF2) will be used as the primary data source for commodity flow information. A more detailed methodology by which to obtain county-level commodity flows from FAF2 is described in the Truck Volume section below.

### *Truck Volumes by Movement Type: Inbound, Outbound, Through and Within Kansas*

Trucks provide the vast majority of transportation to freight, both in Kansas and nationally. It is therefore vital to have county-level, truck-specific data to support the freight plan effort.

Though TRANSEARCH would include this data, another approach has been developed using FAF2. FAF2, developed by FHWA, estimates tonnage and value of goods shipped by type of commodity and mode of transportation among and within 114 areas, to and from 7 international trading regions through the 114 areas, and through 17 additional international gateways. The 2002 estimate is based primarily on the Commodity Flow Survey and other components of the Economic Census. Forecasts derived from robust economic forecasting methods as well as assumptions on relative market shares of international trade are included for 2010 to 2035 in 5-year increments.

Truck volumes can be calculated from the truck volumes by using payload factors derived from existing data sources. These payload factors convert the interchange of annual tons by truck into daily freight truck trips. There are three key steps in computing the factors to convert freight truck tonnage to truck volumes:

1. Compute payload factors by Commodity Group and distance class from the Vehicle Inventory and Usage Survey (VIUS) data;
2. Calculate the percentage of “no load” mileages by Commodity Group from the VIUS “No Load” product class; and
3. Combine the payload and empty (“no load”) truck factors to produce the annual tons to annual truck conversion factors by commodity and distance class.

The factors to convert freight truck tonnage to truck volumes are developed from the VIUS and include estimates of the percentage of loaded and unloaded trucks. For this study, we will use VIUS data specific to Kansas. We will then conduct a high-level comparative analysis along major trade corridors between the freight flow estimates by mode from the FAF2 database with available modal traffic flows available from KDOT. For example, freight flows by truck from the FAF2 database along a corridor will be converted to equivalent truck flows using payload factors. These flows will then be compared to truck counts and/or model outputs to ensure consistency.

**Data acquisition options:** If TRANSEARCH is purchased, data will automatically be provided at the county level. If KDOT decides not to enter into a data purchase agreement, then the Freight Analysis Framework (FAF2) will be used as the primary data source for commodity flow information, using the methodology described above.

### *Freight Rail Volumes*

Freight rail volumes will be obtained via the Surface Transportation Board (STB) Carload Waybill Sample. While confidential, the Waybill Sample is available to states for use in transportation planning studies and other activities. KDOT is required to formally request release of these data from the STB. CS has coordinated these requests for several states and a sample STB Carload Waybill Sample request letter is provided in Appendix B of this memo.

**Data acquisition options:** TRANSEARCH data uses the waybill data as a freight rail commodity flow input dataset. Therefore, If TRANSEARCH is used; KDOT will merely have to sign the confidentiality agreement. If the public data set approach is used, KDOT will request the waybill data from the STB, and agree to the confidentiality agreement. Once received, the Carload Waybill Sample will provide sufficient information to describe rail flows into, out of, and through the State.

### *Agricultural Commodity Flows*

KDOT has expressed concern that datasets such as FAF2 tend to underestimate agricultural commodity flows. Therefore, CS proposes to accentuate the accuracy of any primary dataset (such as TRANSEARCH or FAF2) with county-level agricultural information. The primary source for this information will be the USDA's National Agriculture Statistics Service (NASS), which publishes Kansas county-level data for crops, number of farms, and livestock. This data includes county by county commodity yields and production for agricultural crops. This information can be used to create estimated flows of agricultural product between counties, as well as aggregated up to the statewide level to estimate the volume of agricultural product moving into, out of, and within Kansas.

**Data acquisition options:** If TRANSEARCH is used, NASS data will be the control total for all agricultural movements, and will be used to factor the TRANSEARCH data as appropriate. Similarly, if the public data set option is used, NASS will be used to factor the results at the county level.

## ■ Economic Structure and Industry Logistics Pattern Profile

### Overview

The objective of this phase is to define the significance of goods movement to the Kansas economy. It will identify existing and emerging industries that are significantly impacting the State’s freight transportation system and/or are the focus of statewide or regional economic development activities; describe how industry logistics patterns impact the freight transportation system; and describe the key economic, trade, and supply chain trends that are influencing freight demand and freight movements in the State. Data needs to support these analyses include economic structure data, which are used to identify and describe key Kansas industries, their locations, how many people they employ, and their general growth outlook; and supply chain and logistics information, which is used to describe how these industries are using the State’s transportation system.

### Data Needs and Availability

Table 3 describes the Economic and Industry – specific types of data required to meet the objectives of Task 3 and their current availability. Availability is described using a three-tiered scale:

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Data are available, no additional analysis required	Data are available, some modifications/analysis required	Data are not available or significant analysis/modifications required

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A detailed list of some of the data sources that will be used to support this phase is provided in Appendix A. They are summarized below in the Key to Table 3.

### Key to Table 3<sup>a</sup>

Data Acronym	Notes
KU	The University of Kansas’ Institute for Policy and Social Research, which publishes employment, wage, and industry data for Kansas Businesses.
KSDOH	Kansas Department of Health, which publishes Kansas population, estimates.
Woods & Poole	A private (inexpensive) dataset that will be procured for this study. Includes more than 900 economic and demographic variables, for populations and industries, from 1970 to 2030.
KSDOL	Kansas Department of Labor, which publishes industry and wage data for Kansas. Will be primarily used to factor the Woods and Poole dataset.
USBEA	United States Department of Commerce’s Bureau of Economic Analysis. Includes Gross Domestic Product by industry class for all 50 States.
Interviews	Interviews with key Kansas freight stakeholders will be used to refine and check all of the data collected during the data collection and analysis tasks.

<sup>a</sup> Full descriptions of all of these sources are provided in Appendix A of this document.

### Table 3. Economic and Industry Data Needs and Availability

Data Need	KSU	KSDOH	Woods & Poole	KSDOL	USBEA	Interviews
Existing and Emerging Industries			●		●	●
Population and Growth Patterns	●	●	●	●		
Locations of industries	◐			◐		◐
Employment by Industry (historical and forecast)			◐	◐	◐	
Industry-specific output data					◐	◐

## Data Gaps and Strategies

Table 3 shows that there are significant gaps for economic structure data and information, including Locations of industries, Employment by industry, and Industry-specific output data. Locational data for key Kansas industries exist and must simply be mapped within a geographic information system (GIS). Industry-specific output data exist for some industries, including mining, but not all. However, industry-specific data will be supplemented with information derived from interviews (see below) and is not anticipated to be an issue.

Employment by industry is also identified as a partial need. This can either be assembled from a variety of public sources, such as the Kansas Department of Labor, the Kansas Department of Commerce, and the U.S. Department of Commerce's Bureau of Economic Analysis. Alternatively, this need could be met by purchasing a Woods & Poole dataset. This dataset includes historical and projected industry employment and industry data by county, and is one of the few datasets that offers future projections of employment by industry.

## ■ Interview Strategy

An important part of the Kansas Statewide Freight Plan will be to conduct a series of qualitative interviews with key freight stakeholders in the State. Tables 3 to 5 present a preliminary list of interviewees for the Kansas Statewide Freight Plan. This list includes representatives of shippers, carriers, freight service providers, industry groups, agencies, and other identified through the Kansas Long-Range Transportation Plan Topical Working Group (TWG) process. Where potential interviewee names are known/available, they are included in this list. Where potential interviewee names are not known, there are instead categories listed of the type of interviewee sought for the interview.

### Overview

Tables 4 to 6 describe our initial list of interviewees and topic areas. Each table identifies interviewees (or categories of interviewees) in one of three categories:

- **Industry interviews**, to include freight carriers (railroads, Kansas Motor Carriers Association) operating in the State, shippers that generate or receive significant amounts of freight, representatives of the Agricultural community, and Chamber of Commerce staff involved in business attraction and retention efforts;
- **Public sector interviews**, to include DOT Central Office and District staff, economic development staff, and metropolitan officials; and
- **Other interviews**, could potentially include members of the Kansas Academic community, Banking community or other interviewees identified by KDOT as being important to interview for the Statewide Freight Plan process.

**Table 4. Industry Interviewees**

<b>Agency/Entity</b>	<b>Interviewee</b>	<b>Interview Topics</b>
<i>Industry Interviews</i>		
Overland Park Chamber of Commerce	Kent Eckles and Andrew Nave	Existing and emerging industries
Salina Chamber of Commerce	Dennis Lauver, President	Key transportation challenges and bottlenecks
St. Joseph, MO and Elwood, KS Chamber of Commerce	Andy Clements and Kelsey Marr	Chamber policy positions related to transportation and economic development
Topeka Chamber of Commerce	Steve Jenkins	Understanding of key regional shippers and carriers
BNSF Railroad	Chris Bigoness	Rail chokepoints and issues
UP Railroad: Local	Mike Benjamin – Manager of Industry and Public Projects	Shortline viability and possible expansion markets
KCS Railroad	Warren Erdman	
Watco Companies, Inc.	Pat Cedeno	
Kansas Motor Carriers Association	Tom Whitaker, Executive Director and Michael Top, President	Key truck chokepoints and bottlenecks
Groendyke Transport	John Prather, Vice President of Corporate Relations	Other trucking-related issues and concerns
Kansas Farm Bureau	Brad Harrelson, State Director Governmental Relations	Agriculture-specific freight issues
Kansas Livestock Association	Allie Devine	
Proctor and Gamble	Bree Heitman	Supply chain and logistics strategies and trends Key transportation, policy bottlenecks
OxyChem	Doug Coombs, Logistics Manager and Brent Burrell, Trucking Supervisor	
Koch Industries	Karen Klein, Transportation Manager	
YRC Logistics	Duncan Hopwood, VP Supply Chain Services	
Boeing	Lyle Winters	
East Kansas Agri-Energy	Steve Garnett	Air cargo growth trends
Salina Airport Authority	Tim Rogers, Executive Director	
Kansas City Aviation Department	Gary Bartek, Cargo and Economic Development Manager	Access issues and other bottlenecks

**Table 5. Public Sector Interviewees**

<b>Agency/Entity</b>	<b>Interviewee</b>	<b>Interview Topics</b>
<i>Public Sector Interviews</i>		
KDOT, Central Office	Julie Lorenz, Special Assistant to the Secretary	Statewide freight infrastructure, operational, institutional challenges
	Ed Young, Director of Aviation	
	Mike Crow, Director of Planning and Development	Mode-specific challenges and issues
	Dan Scherschligt, Director of Engineering and Design	Future KDOT Priorities
KDOT, District Offices	District 1: Catherine Patrick, Area Four (Topeka) Engineer	District-level chokepoints and issues
	District 2: Bill Filmore - Area Three (Marion) Superintendent	Key infrastructure, operational, institutional challenges
	District 3: Chriss McDiffett - District Three Engineer (Norton)	
	District 4: John Hrenak - District Four Maintenance Engineer (Chanute)	
	District 5: Sammi Ford - District 5 Superintendent	
	District 6: Dale Luedke - Area Three Engineer	
MARC	Ron Achelpohl	Local chokepoints and issues
City of Pittsburg	Mark Turnbull and Todd Kinimer	Relationship between freight transportation and economic development efforts
WAMPO	Brent Holper	

**Table 6. Other Interviewees**

<b>Agency/Entity</b>	<b>Interviewee</b>	<b>Interview Topics</b>
<i>Other Interviews</i>		
Kansas City SmartPort	Chris Gutierrez	Statewide Freight issues
		Kansas City Urban Area issues Freight Trends - nationally and Statewide
KU Transportation Research Institute	Dr. Robert Honea	Industry trends and possible future issues

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# Appendix A

*Freight Data Sources and Literature Review*



## ■ Freight Data Sources and Literature Review

There are a variety of publicly and privately maintained data sets that will be used to guide the development of the KDOT Statewide Freight Plan. Tables A.1 to A.3 describe economic/industry, network, and volume/performance data (and availability).

In addition, Table A.4 lists the studies and reports that will be consulted as part of this Statewide Freight Plan effort.

**Table A.1 Economic and Industry Data Sources**

Dataset	Description	Source	Availability
State of Kansas Economic Structure Data	Gross domestic product, employment, wage, and industry-specific data for key Kansas industries	U.S. Department of Commerce Bureau of Economic Analysis, KU's Institute for Policy and Social Research	Downloaded from web site
Woods and Poole Kansas Profile	Historical and forecast population, employment and industry data, 1970 to 2030 at the county level. Data include population by age and race, employment by industry, employee earnings by industry, personal income, and retail sales by kind of business.	Woods and Poole, Inc. Kansas Department of Labor, etc.	Old dataset is owned by CS. Updated dataset will be available for purchase in May 2008. CS has budgeted this cost into their industry analysis task budget.
County Business Patterns	Employment data (by county) using Standard Industry Classification (SIC) codes	U.S. Census Bureau	Downloaded
Agricultural Data	State/county-level agricultural commodity data, including volume/value and acres in production	USDA National Agricultural Statistical Service	Downloaded

**Table A.2 Network Data Sources**

<b>Dataset</b>	<b>Description</b>	<b>Source</b>	<b>Availability</b>
National Highway Planning Network (NHPN)	Describes the nation’s major highway system, including interstates, principal arterials, and rural minor arterials. Attributes contained within this dataset include road name, mileage, functional classification, rural versus urban classification, designation as an intermodal facility connector, and road owner.	FHWA	Downloaded
National Rail Network	Describes the nation’s railway system, including Class I, regional, and shortline networks. Attributes contained within this data set include length, railroad ownership, railroad trackage rights, status of rail line (i.e., abandoned or active), and railroad classification code.	FRA	Downloaded
Intermodal Terminals Facilities	Provides information about intermodal facilities nationwide. Attributes include facility name, location, and primary function, key modes, and a list of other major businesses associated with the facility.	U.S. Bureau of Transportation Statistics (BTS)	Downloaded
Military Installations	Contains the boundaries and location of U.S. military installations. Data attributes include, name of military installation, facility description, and Base Realignment and Closure status.	U.S. Department of Defense (DoD), Office of Economic Adjustment	Downloaded
Hazardous Materials Routes	There are two types of data associated with this source. The first is a geospatial line dataset showing hazardous material routes. The second is a route registry by state that gives updated information regarding hazardous material routes, including which hazardous materials are allowed and which routes are preferred.	Federal Motor Carrier Safety Administration (FMCSA)	Downloaded
Public Use Airports	Describes U.S. aircraft landing facilities. Attributes include name and type of facility, whether it is a customs international airport, if it has military landing rights, or if it is a joint use aircraft facility.	FAA	Downloaded

**Table A.3 Volume and Performance Data Sources**

<b>Dataset</b>	<b>Description</b>	<b>Source</b>	<b>Availability</b>
Freight Analysis Framework (FAF2)	Estimates current and future commodity flows between states, substate regions, and major international gateways. The FAF commodity origin-destination database includes information about the weight (tons) and value of commodities moving between regions, the mode of transportation used to move the goods, and the types of commodities being shipped. It is built entirely from public data sources.	FHWA	Downloaded
Rail Carload Waybill Sample	Stratified sample of carload waybills for rail shipments. It identifies the railroad carrier, weight (tons), value, type of commodity, and route.	Surface Transportation Board's (STB)	KDOT must formally request data from STB. Sample letter included as Appendix B
Vehicle Inventory and Use Survey (VIUS)	Provides information on the nation's truck fleet at the state level, including the characteristics of size, weight, and axles	U.S. Census Bureau and the Bureau of Transportation Statistics (BTS)	Downloaded
HPMS	Provides information on public road mileage and volumes on both a national and statewide basis	FHWA	Downloaded
KDOT Truck Counts	Provides information about the origins and destinations of the State's truck movements.	KDOT	CS will request from KDOT

**Table A.4 Additional Plans and Studies**

<b>Description</b>	<b>Source</b>
<i>2007 Kansas Economic Report</i>	Kansas Department of Labor
<i>Missouri/Kansas Barge Traffic Overview</i>	Kansas City SmartPort
<i>Kansas Statistical Abstract 2006</i>	KU's Institute for Policy and Social Research
<i>Lawrence MPO Long-Range Transportation Plan</i>	Lawrence MPO
<i>Lawrence MPO 2008-2012 TIP</i>	Lawrence MPO
<i>U.S. – Mexico Freight Flow Analysis – Final Report</i>	MARC
<i>MARC Long-Range Transportation Plan</i>	MARC
<i>MARC 2008-2012 TIP</i>	MARC
<i>Missouri Statewide TIP, 2008-2012</i>	MoDOT
<i>Missouri LRTP 2007</i>	MoDOT
<i>Topeka MPO 2008 TIP</i>	Topeka MPO
<i>WAMPO RR Crossing Final Report</i>	WAMPO
<i>WAMPO LRTP</i>	WAMPO
<i>WAMPO TIP</i>	WAMPO
<i>Kansas Long-Range Transportation Plan</i>	KDOT
<i>Kansas LRTP Needs and Gaps Summary</i>	KDOT
<i>2005 Kansas Selected Statistics</i>	KDOT
<i>Crossing Needs and KDOT Freight Organization</i>	KDOT
<i>KDOT Rail Plan 2005-2006</i>	KDOT
<i>Review of the Kansas Shortline Railroad Rehabilitation Program</i>	KDOT
<i>AASHTO Freight Transportation Bottom Line Report</i>	AASHTO
<i>Study of Adequacy of Commercial Truck Parking Facilities – Technical Report</i>	FHWA

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# Appendix B

*Sample STB Carload Waybill Sample Request Letter*



April 20, 2008

Mr. Leland Gardner  
Director  
Office of Economics, Environmental Analysis and Administration  
Surface Transportation Board  
1925 K Street, NW  
Washington, DC 20423-0001

Dear Mr. Gardner:

The Kansas Department of Transportation (KDOT) requests permission for Cambridge Systematics to use the 2004 Carload Waybill Sample for traffic originating, terminating, and passing through the State of Kansas. These data will be used for the Kansas Multimodal Freight Study, which is examining multimodal transportation needs for the State of Kansas, including rail passenger and freight, transit, and aviation needs.

Staff at KDOT and Cambridge Systematics working with the Carload Waybill Sample will sign the standard confidentiality agreement. Please be assured that the requested data will be kept safe and seen only by the necessary parties. It will be published only in aggregated form. We anticipate using the following fields: origin, termination, Rule 260 junctions, origin railroad, termination railroad, junction railroads, STCC, AAR car type, expanded carloads, expanded tons, and expanded trailer/container count.

Therefore, as a duly designated agent for KDOT, I authorize Cambridge Systematics and their appointed agents access to the above referenced data.

Please contact me at (785) 296-3328 if you have any questions or require any additional information.

Sincerely,

John W. Maddox  
Kansas DOT  
Office of Rail Affairs Program Manager