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16. Abstract In setting the state's future spending priorities, Texans will be analyzing and evaluating the importance and dimensions of the state's transportation system and network and their role in the Texas economy. Current, accurate, and objective economic measures that delineate the importance of transportation in Texas are crucial to the public debate and policy-making process in deciding what Texans want for their transportation system.  In reporting the results, the proposed project will compile, using existing U.S.- and Texas- based data sources, an economic profile of the importance of the transportation system and its services to the State of Texas, which may include:  <ol style="list-style-type: none"> <li>1. All transportation outlays and the Gross Texas Product;</li> <li>2. Outlays for freight transportation, total and by mode;</li> <li>3. Outlays for passenger transportation, total and by mode;</li> <li>4. Employment in transportation and related industries; and</li> <li>5. Outlays for transportation equipment and investment in capacity.</li> </ol>					
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**TRANSPORTATION AND THE TEXAS ECONOMY:  
SOME INTERIM RESULTS**

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## **DISCLAIMER**

The contents of this report reflect the views of the authors, who are responsible for the facts and the accuracy of the data presented herein. The contents do not necessarily reflect the official view or policies of the Federal Highway Administration (FHWA) or the Texas Department of Transportation (TxDOT). This report does not constitute a standard, specification, or regulation. The researcher in charge was Dock Burke, Senior Research Economist and Regents Fellow at Texas Transportation Institute.

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# **CHAPTER 1: INTRODUCTION**

## **PROJECT SUMMARY**

In setting the state's future spending priorities, Texans will be analyzing and evaluating the importance and dimensions of the state's transportation system and network and their role in the Texas economy. Current, accurate, and objective economic measures that delineate the importance of transportation in Texas are crucial to the public debate and policy-making process in deciding what Texans want for their transportation system.

In reporting the results, the proposed project will compile, using existing U.S.- and Texas- based data sources, an economic profile of the importance of the transportation system and its services to the State of Texas, which may include:

1. All transportation outlays and the Gross Texas Product;
2. Outlays for freight transportation, total and by mode;
3. Outlays for passenger transportation, total and by mode;
4. Employment in transportation and related industries; and
5. Outlays for transportation equipment and investment in capacity.



## **CHAPTER 2: PROJECT SUMMARY**

This chapter presents a brief summary of the work to date and includes some salient, interim results. We have presented these findings in quarterly meetings held with the TxDOT Project Panel and have benefited from direct and lively discussions among study members and study panel members. The contents of this chapter follow the general outline of the project Work Plan, except that [Tasks 2 and 5](#) are presented here as a unified component.

### **TASK 1. OBTAIN, REVIEW, AND ANALYZE CURRENT STUDIES, ESPECIALLY FROM OTHER STATES, ON TRANSPORTATION IN THE STATE'S ECONOMY AND TRANSPORTATION PRODUCTIVITY**

Dr. Duane Rosa of West Texas A&M directed this task. In late October, researchers prepared and mailed surveys to all state departments of transportation (DOTs) (except Hawaii, Kentucky, and Texas) requesting information on the valuation of the economic impact of transportation on their state economies. To date, we have received responses from 26 states. We will start calling the remaining DOT offices to request any additional information. The methodology of the studies remains a primary interest. So far, it is pretty obvious that most states use variations of an input-output (I-O) model. The information received from the surveys will be analyzed and incorporated into an annotated bibliography.

#### **Task 1.1 Survey of Other State's Transportation Productivity**

In late October 2004, researchers prepared and mailed surveys to all state DOTs. The survey form asked if their state had conducted any studies to measure the impact transportation has had on their state's economy, and if so to provide information about their models and results.

The following states (16) reported that some type of economic valuation study has been done:

Arizona, Florida, Georgia, Indiana, Iowa, Kansas, Louisiana, Maine, Maryland,  
Michigan, Missouri, Oklahoma, Oregon, South Dakota, Vermont, and Wisconsin.

Upon reading the studies that other states have completed, we believe that most, if not all, of the studies were used as an internal research tool to determine the feasibility of undertaking certain transportation projects, rather than as a tool to receive more state funding.

The following discussion presents some pertinent highlights from the states that responded to the survey.

#### *Arizona – Market-Oriented Cost-Benefit Analysis*

Arizona DOT proposed a market-oriented approach to assist in highway investment decision-making. Cost-benefit analysis was used to distinguish between roadways generating more user

revenues per dollar of highway investment and those generating less user revenues per dollar of highway investment. This analysis was completed on a per-county basis.

#### *Florida – HERS, REMI*

Florida DOT has estimated the macroeconomic impacts of its Work Program for fiscal years 2002-2003 through 2006-2007. A combination of two transportation impact models were used, the Highway Economic Regional System (HERS) model and Regional Economic Models, Incorporated (REMI). The HERS model estimated user highway benefits based on transportation investments, and the REMI model estimated the full economic impact of the reduced cost of doing business in Florida resulting from Work Program investments that reduce transportation costs over time. The economic impacts from aviation and seaport investments were estimated separately based on other studies done in Florida and elsewhere.

Information for the study was obtained from Florida DOT's Roadway Characteristics Inventory (RCI) and Florida DOT's Five Year Work Program for Fiscal Years 2002-2003 through 2006-2007.

The results of the analysis showed a very strong connection between transportation investments and key macroeconomic benefits including income for Florida residents, employment, and the value of goods and services produced in the state. An economic based cost-benefit analysis was also conducted using forecasted real disposable personal income.

#### *Georgia – REMI*

Georgia DOT conducted a survey to assess the economic value of interstate highways. Georgia DOT quantifies the impacts by linking a highway network model of Georgia (the Integrative Strategic Planning (ISP) Traffic Forecasting Model) to an economic impact model (REMI) that translates transportation impacts, such as user benefits, reliability, and accessibility improvements into industry cost and competitiveness impacts.

#### *Indiana – Economic Impacts Analysis System, MCIBAS*

Indiana DOT currently has three ongoing studies to measure economic impact and growth. Indiana DOT has also completed a 25 Year Long Range Transportation Plan. An economic analysis of the plan was conducted using Indiana DOT's Major Corridor Investment-Benefit Analysis System (MCIBAS). MCIBAS is an economic analysis tool used by Indiana DOT to assess the relative costs and benefits of proposed major highway corridor projects on Indiana businesses and residents. MCIBAS consists of a travel demand model, a user benefit/cost analysis system, and an economic impact analysis system.

The Economic Impact Analysis System (EIAS) is a series of linked models used to estimate the economic impacts of the Long Range Plan. The system consists of three components: a Business Cost (B/C) Savings module, a Business Attraction module, and a REMI model.

The B/C module translates estimates of the dollar value of user travel time, vehicle operating cost, and safety benefits from net business cost into direct economic impacts on business operating costs. The Business Attraction module translates estimates of expanded delivery and supplier market areas for businesses in Indiana into forecasts of direct business attraction beyond what would be expected due to user benefits alone. The REMI model simulates the full economic impacts of the Long Range Plan in Indiana. It uses the direct economic impacts as assessed by the preceding two modules to forecast total (direct and secondary) employment, business output, GSP, and real personal income changes for 35 years.

#### *Iowa – Input-Output*

Iowa DOT used an input-output model, fed with data from Iowa Workforce Development, U.S. Department of Labor, and U.S. Department of Commerce, to assess the economic impacts of aviation. The model provided estimates for total industrial output, total personal income, value added, and jobs.

#### *Kansas*

Kansas DOT sent two reports, one that analyzes the benefits and costs of the Kansas Comprehensive Highway Program (KCHP), and another that approximates the economic impacts of the Kansas Comprehensive Transportation Program.

A comprehensive benefit-cost analysis (ratios) for the KCHP determined that for every dollar of cost to Kansas' residents, three dollars of value were returned. Four major computerized data sources provided by KDOT were used – a Cash Flow Model (spreadsheet), Comprehensive Program Management System (a dataset with a historic record of transactions at the project level), Control Section Analysis System (CANSYS), detailed information on sections of state highway per year, and a model showing what contract maintenance projects would have been completed in the absence of the KCHP. Non-Kansas DOT information was also used, including the HERS model, surveys, and KSSAM version 3.0.

In the second report, a 74-sector input-output model was used, utilizing output, income, and employment multiplier data from a June 1997 Kansas DOT highway study.

#### *Louisiana*

Louisiana DOT has calculated the economic impact of ports on the state economy and maritime industry. Economic contribution of ports was estimated using direct spending, indirect spending, and induced spending. Information was obtained via a survey and supplemented by Louisiana Department of Labor data and Bureau of Economic Analysis (BEA) data.

#### *Maine – REMI Input-Output*

Maine DOT used a REMI input-output model to determine the costs and economic benefits relative to the development of an east-west highway in Maine, linking to the east with the Canadian Maritime Provinces and to the west with the larger markets of Quebec, Ontario, and

the Midwestern United States. The basic objective of these studies was to provide policy makers with a sound base of knowledge regarding the costs, benefits, and potential impacts associated with both the improvement of Maine's existing east-west highways as well as the construction of a new four-lane limited access highway.

#### *Maryland – Input-Output*

Maryland DOT conducted several studies to measure the economic impact of highways, aviation, seaports, and currently transit. They use an input-output model for all cases and gathered data from numerous sources including interviews, local data, U.S. Bureau of Labor Statistics, Consumer Expenditure Survey, and census data. Their current transit project is expected to be completed this month and will take a retrospective and prospective look at surface transportation.

#### *Michigan – REMI*

Michigan DOT is currently in the process of completing a study. The study contains two phases. Phase 1 is assessing the economic impacts of Michigan DOT's 2005-2009 Five-Year Transportation Road and Bridge Program. Phase 2 will attempt to quantify expected economic benefits based on alternative investment strategies (i.e., preservation vs. improve-expand, vs. safety projects, etc.). Phase 1 uses the REMI model and is expected to be completed this month, and Phase 2 is still being refined but will build on Phase 1 efforts. Phase 2 is scheduled to be completed in May 2005, and copies of both reports will be sent to us upon completion.

#### *Missouri – REMI, RIMs, and IMPLAN*

Missouri DOT has used REMI, Regional Input Modeling Systems (RIMs), and Impact Analysis for Planning (IMPLAN) on a project level for planning analysis. They used in-house data, census reports, BEA data, and state government reports. They are considering using the REMI model for planning and programming analyses. Missouri DOT tried regression modeling originally, but the modeling was complex and the results were difficult for lay persons to understand.

#### *Oklahoma*

Oklahoma DOT is currently working on a study to calculate the impact of the state's bridge problems using a model developed for Homeland Security calculating the impact of terrorist destruction of bridges and associated impacts. The model is being fed by BEA data, modal experts, and a mail-in survey of economic developers, local and state officials, and modal providers – designed to be statistically significant.

#### *Oregon – Oregon Statewide Model*

Oregon DOT developed its own "Oregon Statewide Model," a complex set of computer programs and data that describes the relationships between Oregon's economy, land use patterns, and transportation flows. It is based on an input-output model developed by IMPLAN. The

statewide model also employs Transportation U.S. (TRANUS), with some function being carried out in Excel spreadsheets.

#### *South Dakota – REMI Input-Output*

South Dakota DOT used the REMI input-output model for corridor and project studies completed over 10 years ago. No statewide studies have been completed to date. BEA data was used in all cases.

#### *Vermont – IMPLAN, Input-Output*

Vermont DOT completed a study to define the impact of the public-use airports in the state on the overall Vermont economy. The IMPLAN model was used to calculate “spin-off” impacts for each individual airport. An input-output model was developed for assessing impact for the state as a whole. Several sources were used to complete the study. Surveys were sent to airport managers, aircraft owners, airport tenants, passengers, freight forwarders, and airport-dependent businesses. Dun and Bradstreet business records were used for job counts. BEA data of wages and sales per employee were used to approximate payroll and business sales.

#### *Wisconsin – REMI and IMPLAN, HERS-ST*

Wisconsin DOT conducted a study assessing the economic benefits of transportation investments. The study was done in conjunction with Cambridge Systematics (HERS-ST), and used the REMI and IMPLAN models. In addition, the department performed economic impact analysis for specific types of transportation projects (i.e., highway bypass, bridge analysis, build-operate-lease, or transfer study) and for other broad modal impacts (i.e., aviation, rail).

The following states (33) reported that no economic valuation study has been done:

Alabama, Alaska, Arkansas, California, Colorado, Connecticut, Delaware, Hawaii, Idaho, Illinois, Kentucky, Massachusetts, Minnesota, Mississippi, Montana, Nebraska, New Hampshire, New Jersey, New Mexico, New York, Nevada, North Carolina, North Dakota, Ohio, Pennsylvania, Rhode Island, South Carolina, Tennessee, Utah, Virginia, Washington, West Virginia, and Wyoming.

The following states (12) requested that a copy of our final report be sent to their department:

Georgia, Indiana, Iowa, Kansas, Maryland, Massachusetts, Michigan, Missouri, Nevada, South Dakota, Utah, and Washington.

### **Task 1.2 Literature Review**

The literature review process for this project will be ongoing throughout the entire project. The final section **REFERENCES** contains a partial list of references.

### **Task 1.3 Determine Reliable Information on Texas Gross State Product (GSP)**

The Texas Comptroller of Public Accounts was contacted in October to ascertain how the Texas Gross State Product is calculated, with specific regard to how transportation is factored in. We were told that their office uses BEA data.

According to Gary Preuss, an economist in the Revenue Estimating Division, the Comptroller's Office will continue to use BEA data as the basis for its forecasts and for historical GSP data for Texas. The forecast model will likely only have GSP forecasts for major industries, such as four or five goods categories and seven or eight service industries. Transportation will be grouped under Trade, Transportation, and Utilities.

As of May 2005, the Comptroller's Office has no plans to gather its own data to calculate transportation as a separate category in the Texas GSP.

### **TASK 2. REVIEW METHODOLOGY USED IN THE U.S. GOVERNMENT ECONOMIC ACCOUNTS TO GENERATE MEASURES FOR THE TRANSPORTATION SECTOR AND DERIVE EMPIRICAL ESTIMATES FOR TRANSPORTATION VALUES FOR TEXAS**

[Tasks 2 and 5](#) are reported together, since they are coordinated and conducted under the direction of Dr. David Luskin at the University of Texas (CTR). We have conducted a review of the methodology used in the U.S. government economic accounts to generate measures for the transportation sector and derive empirical estimates for transportation values for Texas. We have also focused upon the methodology and results obtained by analyzing the Regional Input-Output Modeling System (RIMS II), which distinguishes several industries within the construction sector, including street and highways and is the source of the BEA's estimates of regional economic multipliers that are commonly used in state and regional economic impact analyses. And finally in [Task 2](#), we have developed a review/critique of the input-output models with respect to their ability to show: (1) economic multipliers relating to changes in transportation expenditure. For an increase in expenditure on road construction in Texas, for example, one could obtain multipliers that define the impact on the state's levels of employment, earnings from employment, GSP; (2) measures of the contributions of individual transportation industries to state GSP and labor income; and (3) measures of the contribution of transportation to production and distribution costs by industry and commodity.

### **TASK 5. EVALUATE POTENTIAL STATE-LEVEL ECONOMIC MODELS (INCLUDING REMI)**

As a special case of interest to TxDOT, the study includes [Task 5](#), in which the researchers have begun to evaluate the potential of various state-level economic models especially including those produced by REMI.



Using the HERS model to develop some example calculations about the relationship between vehicle usage in Texas and the economic costs of travel, we calculated these interim results for the year 2003.

Tables 1 through 3 show example calculations for the costs of highway travel in Texas for FY 2003. These estimates are from HERS model and other sources.

**Table 1. Travel Time Costs, \$ Billions (includes time-related depreciation).**

	<b>RURAL</b>	<b>URBAN</b>	<b>TOTAL</b>	<b>BUSINESS TRAVEL</b>
<b>4-Tire Vehicles</b>	18.9	108.5	123.5	32.1
<b>Trucks</b>	6.7	13.4	18.9	18.9
<b>All vehicles</b>	25.8	121.5	142.6	51.0

**Table 2. Operating Costs.**

	<b>RURAL</b>	<b>URBAN</b>	<b>TOTAL</b>	<b>BUSINESS TRAVEL</b>
<b>4-Tire Vehicles</b>	15.1	48.5	63.6	16.5
<b>Trucks</b>	11.1	11.6	23.3	23.3
<b>All vehicles</b>	26.7	59.2	87.6	39.8

**Table 3. Total Cost.**

	<b>RURAL</b>	<b>URBAN</b>	<b>TOTAL</b>	<b>BUSINESS TRAVEL</b>
<b>4-Tire Vehicles</b>	34.1	157.0	187.1	48.6
<b>Trucks</b>	17.9	25.0	42.2	42.2
<b>All vehicles</b>	52.5	180.7	230.3	90.8

Using the IMPLAN model to develop some example calculations about the relationship between employment in Texas and expenditures in the transportation sector, we estimated these results for the year 2005.

Tables 4 and 5 were completed as example scenarios using a \$1 billion increase in 2005 demand for services of Texas trucking companies.

**Table 4. Employment Impacts on Texas Industries, Estimates from IMPLAN.**

<b>Industry Sector</b>	<b>Direct</b>	<b>Indirect</b>	<b>Induced</b>
<b>Agriculture</b>	0	2	132
<b>Mining</b>	0	47	68
<b>Utilities</b>	0	9	37
<b>Construction</b>	0	55	1,007
<b>Manufacturing</b>	0	108	398
<b>Wholesale trade</b>	0	374	355
<b>Transportation:</b>			
Air	0	9	20
Rail	0	29	7
Water	0	4	4
<i>Truck</i>	<i>9,435</i>	<i>1,257</i>	<i>117</i>
Transit & ground passenger	0	4	29
Miscellaneous	0	457	118
Warehousing	0	199	19
<b>Retail</b>	0	329	1,657
<b>Information Services</b>	0	89	134
<b>Finance, Real Estate</b>	0	533	747
<b>Other services:</b>			
<b>Non-government</b>	0	1,013	4,312
<b>Government</b>	0	37	88
<b>ALL INDUSTRIES</b>	9,435	4,554	9,248

**Table 5. Regional Purchasing Coefficients, IMPLAN, Transportation-Related Industries.**

<b>Road Construction</b>	44%
<b>Air</b>	46%
<b>Rail</b>	76%
<b>Water</b>	100%
<b>Truck</b>	90%
<b>Transit &amp; ground passenger</b>	69%
<b>Pipelines</b>	100%
<b>Scenic &amp; Sightseeing</b>	69%

**TASK 3. REVIEW METHODOLOGY, STUDIES, AND ANALYSES OF ENO FOUNDATION AND TRANSPORTATION ASSOCIATION OF AMERICA (TAA) MODELS AND TECHNIQUES FOR CALCULATING VALUE OF TRANSPORTATION IN THE ECONOMY**

This task is being conducted by the project research scientist, Dock Burke at TTI. We are conducting a review and analysis of the Eno Foundation methodology for adaptation for use in describing the importance of transportation expenditures in Texas.

So far we have completed some successful data/information collection efforts and are pursuing others in these categories of sources:

- Historical data for Private Transportation bill which is based on ENO Transportation Foundation;
- Historical data for Freight bill which is based on ENO Transportation Foundation;
- Historical and (future) forecasted general socio/economic data in Texas State level, including GSP, per capita income, labor force, and unemployment rates.

[This part of the report follows the outline format developed for the recent presentation of materials to the TxDOT Study Panel.]

**Task 3.1 Develop Methodology for Estimating Transportation Values in Texas**

1. Analysis of transportation mode by sector - Private Passenger Bill
  - For-Hire Passenger Bill
  - Freight Bill
  
2. The consistency in methodology between ENO and TTI
  
3. The consistency of data areas allowing state-to-nation comparisons
  - TTI applies almost the same items with ENO
  - ANOVA (Analysis of Variance) : U.S. vs Texas

### Task 3.2. Obtain Needed Data Inputs and Quantitative Information

1. Data collection according to ENO methodology
  - Private Passenger Bill
  - For-Hire Passenger Bill
  - Freight Bill
2. Breakdown of public transportation expenditures → TTI only
  - Expenditures in Urbanized area transit programs
  - Expenditures in NON-Urbanized area programs
3. Property Taxes and State Fund Revenues Used
  - Highway Maintenance and Construction, etc. → TTI only

### Task 3.3. Empirical Analyses for Estimates of Transportation Values for Texas

1. ANOVA for Per-Capita level data
  - U.S. vs. Texas
2. Regression Analysis
  - According to Data availability
  - OLS (Ordinary Least Squares) or Time Series Analysis
3. Causality Test for Texas Transportation Bill
  - Granger-Type Causality Test

The following example shows the use of a regression model that relates the transportation bill to the U.S. gross national product (GNP) and population.

Sample Regression Results - U.S. level data case  
- all nominal values are constant value (1982-1984=100)

$$\begin{array}{rcccc} \text{U.S. Private Bill} = & -239674 & + & 25.1064 & \text{GDP} & + & 2042.75 & \text{POP} & + & \text{error term} \\ & (4.640) & & (10.970) & & & (-3.630) & & & \\ & [.001] & & [.000] & & & [.000] & & & \end{array}$$

R-squared = .845972

( ) = t-statistic

[ ] = probability-value (p-value)

U.S. Private Bill : \$ Million

U.S. Population : Million

- Coefficients for GDP and POP show positive
- Coefficients for GDP and POP are significant at 1% level (p-value < 0.01)

### Task 3. – Remaining Work to be completed

1. DATA collection for missing items
  - Private Passenger Bill
  - General Aviation
    - ▶ possible source: *Texas Comptroller's Office*
  - For-Hire Passenger Bill
  - Passenger Rail-Road
    - ▶ possible source: TxDOT or Railroad Commission of Texas
    - ▶ 'Class I Railroad Annual Report' from RRC
  - Inter-city Bus
2. Basic Data Analysis
  - Comparison between U.S. vs. Texas
3. The consistency in Methodology between ENO and TTI
  - no explicit publication of methodology from ENO
  - no person who can respond to TTI at ENO
  - mismatch in Texas and the U.S. level data sources
4. ANOVA for Per-Capita level data between U.S. vs. Texas
5. Regression Analysis
  - According to Data availability,
  - OLS (Ordinary Least Squares) or Time Series Analysis
6. Causality Test for Texas Transportation Bill
  - Granger-Type Causality Test
7. Trade-off between No-Blanks vs. Bias
  - portion of Taxi, Water for passenger is very small
  - approximation may cause bias in Empirical Analysis
8. Range of Years to be analyzed
  - Earlier study: late 1950s - 1975
  - 1991 - recent years
    - ▶ not continuous with earlier study
  - 1977 - recent years
    - ▶ missing data for air transportation

#### **TASK 4. PREPARATION OF A POCKET GUIDE**

Ms. Tina Collier, TTI/Austin, is conducting this task. Overall the literature has stressed the importance of identifying and understanding the target audience. There seems to be an abundance of research on various economic analyses but not much in the way of technology transfer. The information that TxDOT Public Information Office sent has been especially helpful in terms of how to communicate. That's what we hope to accomplish with the Pocket Guide.

Work thus far has included reviewing relevant literature. Reviews have included:

- NCHRP 2-22 “Needs in Communicating the Economic Impacts of Transportation Investments.”
- NCHRP 436 “Guidance for Communicating the Economic Impacts of Transportation Investments.”
- Fuller, John. “Information for the Transportation Economic Analysis: State of the Art, and Relevance for Decision-Making.” Paper prepared for the *Conference on Information Requirements for Transportation Economic Analysis*, August 1999.
- Economic Analysis Primer. United States Department of Transportation, Federal Highway Administration. August 2003.
- Pocket Guide to Florida Transportation Trends & Conditions. Florida Department of Transportation, Office of Policy Planning. Summer 2004.

Several samples of guidebook-type documents for format references have been collected.

Work this quarter included follow-up questions to the survey respondents in [Task 1](#). The following respondents were contacted and asked if there was a concerted effort to publish the results of economic valuation studies that were done by the department of transportation. And, if so, how was that accomplished.

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The following departments of transportation responded to the follow-up questions:

Iowa Department of Transportation  
Michigan Department of Transportation  
Arizona Department of Transportation  
Oregon Department of Transportation  
Wisconsin Department of Transportation  
Missouri Department of Transportation

None of the departments had specifically “promoted” the economic impact of transportation on the economy. Several had done some studies but only in the context of research and as such, were only published through the normal process. There is one exception. The Iowa Department of Transportation Office of Aviation completed a study on the impacts of aviation on Iowa’s economy and then promoted the results (which were very favorable) through billboard advertising and on its website. A sample of the billboard can be found at:

<http://www.iawings.com/publications/billboard.htm>

The research results for other tasks will be used to develop the Pocket Guide that is the product of this task. This information should be available later this summer. The project team will assemble the information and discuss the most important information to include in the Pocket Guide. Additionally, a distribution list will be developed.



## **CHAPTER 3: REMAINING WORK**

### **WORK PLANNED**

Each of the task efforts will continue, but special emphasis will now be devoted to taking the statistical and survey information from [Tasks 1, 2, 3, and 5](#) for use in the preparation of inputs for the Pocket Guide ([Task 4](#)).

The study staff members will develop a consensus listing of items that are recommended for inclusion into the Pocket Guide. These items, along with appropriate suggestions of format and production qualities, will be presented to the Study Panel for its review and improvement. Subsequently, a draft copy will be prepared for Panel review.

The analytical and statistical analysis will continue to develop information for inclusion into the final technical report of the project.



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