

**EXHIBIT A
SCOPE OF SERVICES**

ASSESSING THE ECONOMIC IMPACT AND HEALTH BENEFITS OF BICYCLING IN MINNESOTA

BACKGROUND

The recently completed 20-year Statewide Multimodal Transportation Plan identified bicycling as an integral part of Minnesota's transportation system. However, research on bicycling in Minnesota has been selective and does not provide a comprehensive understanding of the economic impact of bicycling (Transportation Research Synthesis#1309). Therefore, a concerted effort to quantify the economic impact of bicycling in Minnesota is needed. To address the need, this project uses a four-component design. The first component is a bicycling industry analysis, by interviewing key industry informants and surveying manufacturers, parts suppliers, distributors, and retail establishments. The second component involves conducting visitor profile studies of selected bicycling events in Minnesota, revealing event visitors' characteristics and spending patterns. Studying findings from these two components will provide crucial information that enables estimating the economic impact of the bicycling industry and events respectively. The third component systematically combs through studies that estimated bicycling infrastructure use in various parts of Minnesota to provide a comprehensive estimate for the magnitude of bicycling infrastructure usage in the state. The fourth component examines the health benefits of bicycling, by performing secondary analysis of existing data, analyzing data collected from bicyclists, and estimating the economic value of the health benefits associated with bicycling. Together, the four components are able to demonstrate the economic impact of bicycling on employment, transportation, tourism, recreation, and health, all of which, as shown in previous research (report No. MN/RC 2013-05), are integral to quality of life. The anticipated impact of the project includes uncovering ways of facilitating future development of the bicycling industry, informing the planning of biking infrastructure, justifying support for bicycling events, and providing evidence for the health benefits and associated economic value of bicycling.

OBJECTIVE

An overarching benefit of the project is providing a comprehensive understanding of the economic impact of bicycling in Minnesota. Project findings will assist MnDOT staff, officials of transportation, economic development, tourism, and health, as well as local economic development groups in determining the appropriate proportion of future investments related to bicycling in Minnesota. Findings will also facilitate partnerships between officials of transportation planning and health, which has been identified as highly important by previous research on transportation and quality of life (report No. MN/RC 2013-05).

The industry analysis will generate new knowledge of the industry, especially considering there has not been a complete analysis of the bicycling industry in Minnesota. Industry analysis can also be helpful to economic development organizations seeking to support firms, by uncovering opportunities for public sector action to support future development of the industry statewide.

Systematically estimating the use of trails and other bicycling infrastructure will provide evidence of demand for bicycling. Knowing such demand is important to state and local policy makers and managers, transportation engineers and planners, in at least two ways: (1) helping them understand the potential for use of new and existing facilities and provide input into the evaluation of proposals for new facilities, and (2) facilitating bicycling safety, which was expressed as a concern in the study of transportation and quality of life funded by MnDOT (report No. MN/RC 2013-05).

The visitor profile component of this study will produce information on the market reach of and consumer spending generated by bicycling events. This information can bring together event organizers and officials of economic development, transportation, and tourism to orchestrate the effort of using bicycle-related events to promote the facilities on which the events take place, the communities in which the facilities are located, and bicycle tourism as a whole.

Assessing the health benefits of bicycling will demonstrate the extent to which bicycling reduces the risk of obesity, cardiovascular disease, and diabetes. Documenting the health benefits of bicycling is important, given the urgency of reducing mortality and morbidity rates associated with the aforementioned health problems. Health and transportation officials as well as health care providers can use the information to promote active commuting via bicycling as a type of physical activity that can be integrated into daily lives through policies and intervention programs.

Taken together, project findings will tell a compelling story for the positive effects of bicycling and provides direct evidence that supports the efforts of promoting bicycling-related industry, infrastructure, and activities.

SCOPE

Industry analysis involves developing and disseminating a short questionnaire to gather economic data from manufacturers, distributors, and retail establishments related to bicycling. Before distributing the questionnaire, in-person or telephone interviews will be conducted to gather information that can inform questionnaire design, sampling plan, and data analysis. The data gathered from the questionnaire will be used to estimate the economic impact of the bicycling industry in Minnesota using IMPLAN, an economic modeling tool used to conduct economic impact analysis.

Estimating the magnitude of bicycle traffic on different types of facilities in different types of Minnesota communities involves using various sources of information, including: (1) results of the MnDOT pilot field counts of bicycles undertaken in 2012 as part of the Minnesota Bicycle and Pedestrian Counting Initiative, (2) bicycle counts taken by local jurisdictions, including but not limited to the Minneapolis Department of Public Works, Transit for Livable Communities, the Minneapolis Park and Recreation Board, (3) counts of trail user visits taken by the Metropolitan Council, and (4) trail user counts completed by the Minnesota Department of Natural Resources. The Census, which estimates bicycle commute share, and regional travel behavior inventories will also be reviewed.

Conducting visitor profile studies of a sample of bicycling events in Minnesota requires designing and using a 2-page intercept questionnaire to collect information on visitor characteristics and their spending pattern at each of the sampled bicycling events. The data gathered from the visitor profile study will be used to estimate the economic impact of bicycling events in Minnesota using IMPLAN.

To estimate the health benefits of bicycling, secondary analysis will first be performed with data from the Coronary Artery Risk Development in Young Adults Study, which has been ongoing for the past 25 years, includes working adult men and women in the Minneapolis/St Paul area, and has excellent measures of cycling, other activities, and a variety of health outcomes. Secondary data analysis will then inform the design of the commuter survey, which will be developed and administered to a random sample of commuters in Twin Cities. Information from the commuter survey will be used to estimate the economic value of the health benefits as a result of reduced mortality due to bicycling.

It is worth noting that devising these four components will help avoid double-counting, extrapolating the results of non-Minnesota economic models to Minnesota, and commingling data related to users and non-users, as well as data related to visitors and non-visitors. All these were strongly advised against by an earlier synthesis of transportation literature (TRS 1309).

ASSISTANCE

Not applicable beyond Technical Assistance Panel.

WORK PLAN

Task Descriptions

Task 1: Assemble contact information and secondary economic data for all bicycle related industries and firms in Minnesota

The University will gather information on the entities in the bicycling industry in Minnesota. The University will also provide contact information for distributing questionnaires and scheduling interviews with key industry informants.

Task 2: Conduct interviews with business owners in the bicycling industry

The University will conduct interviews with up to 15 key industry experts to gather additional information and estimates about the bicycling industry to inform the questionnaire, sampling plan, and data analysis.

Task 3: Develop a sampling plan and a questionnaire

The University will develop a sampling plan to gather maximum amount of data possible and a questionnaire to gather information about the amount of revenue per firm related to bicycling, the number of employees, and amount of inputs from Minnesota suppliers.

Task 4: Distribute questionnaire, analyze data using IMPLAN, and write a report

The questionnaire developed (task 3) will be distributed, by the University, via both electronic and mail methods. The University will enter the data gathered in an Input/ Output model using IMPLAN. The data gathered by the questionnaire will be entered in an Input/ Output model using IMPLAN, an economic modeling tool used to conduct economic impact analysis.

Task 5: Collect, review, and summarize existing estimates of bicycling infrastructure use

The University will develop an inventory and analysis of federal, state, and local sources of bicycling infrastructure use in Minnesota.

Task 6: Assemble data on bicycling events in Minnesota

The University will gather and assemble information (time, location, scope, contacts) on bicycling events in Minnesota.

Task 7: Developing a sampling plan and an intercept survey for each sampled event

The University will generate a sample of bicycling events to conduct visitor profile study based on the table produced by Task 8. The University will develop an intercept survey to gather data on visitor characteristics and spending at each of the sampled events.

Task 8: Conducting intercept surveys and analyzing data using IMPLAN

The University will utilize the intercept survey developed in Task 7 to gather data on visitor characteristics and spending, which will be entered in an Input/ Output model using IMPLAN, an economic modeling tool used to conduct economic impact analysis.

Task 9: Analyzing data and producing a visitor profile for each of the sampled events

The University will analyze data gathered with intercept surveys at each of the sampled events and write a visitor profile report for each of the sampled events.

Task 10: Secondary analysis of existing of the health benefits of bicycling

The University will analyze data from the Coronary Artery Risk Development in Young Adults Study, which is an ongoing cohort study of young adults followed for the past 25 years in the Minneapolis/St. Paul metro area as well as three other metropolitan regions.

Task 11: Develop a sampling plan and a survey of Twin Cities commuters

The University will develop a sampling plan and a questionnaire to survey the health benefits of bicycling among Twin Cities commuters.

Task 12: Collect and analyze data and writing a report

The University will collect data using the commuter questionnaire, analyze the data, estimate the economic value of the health benefits that occur as a result of the reduction in mortality due to bicycling commute, and write a report using the analysis results.

Task 13: Compile Report, Technical Advisory Panel Review and Revisions

The University will prepare a draft report, following MnDOT's publication guidelines, to document project activities, findings and recommendations. This report will need to be reviewed by the Technical Advisory Panel (TAP), updated by the University's Principal Investigator, and then approved by the Technical Liaison before this task is considered complete. Holding a TAP meeting to discuss the draft report and review comments is strongly encouraged. TAP members may be consulted for clarification or discussion of comments.

Task 14: Final Published Report Completion

During this task, the Approved Report will be processed by MnDOT's Contract Editors. The editors will review the document to ensure the document meets the publication standard. The University's Principal Investigator will then prepare the Final Report and submit it for publication through MnDOT's publishing process.

Task Deliverables

Task:	Deliverable(s):
1:	A table that contains contact information, industry classification, and any available secondary economic data on all the firms related to bicycling in Minnesota.
2:	A report on the findings, themes, and insights gained from expert interviews.
3:	A sampling plan for data collection and a Bicycle Industry Questionnaire

4:	A report that synthesizes the findings from tasks 1 to 3 of the project, including a series of tables describing the direct, indirect, and induced impacts of the bicycling industry on Minnesota economy.
5:	A technical memorandum that summarizes magnitude of bicycling in Minnesota, including a description of available information about bicycle use throughout the state, estimates of the range of bicycle traffic volumes in different locations on different types of facilities.
6:	A table that contains information on bicycling events in Minnesota.
7:	A sampling plan for data collection and an intercept survey for each sampled event
8:	Written section for a final report that includes an analysis of the economic impact of bicycling events in Minnesota.
9:	A visitor profile report that documents visitor characteristics and spending for each of the sampled events.
10:	A report that summarizes the results of secondary analysis.
11:	A sampling plan and a questionnaire for data collection
12:	A report on the health benefits and related economic value of bicycling among Twin Cities commuters.
13:	A Draft Report and Final Report Approved for Publication
14:	Final Published Report

PROJECT SCHEDULE

Task Completion Dates

Task:	Draft Deliverable Due Date:	Final Task Approval Date:
1:	September 30, 2014	November 30, 2014
2:	November 30, 2014	January 31, 2015
3:	January 31, 2015	March 31, 2015
4:	November 30, 2015	January 31, 2016
5:	March 31, 2015	May 31, 2015
6:	September 30, 2014	November 30, 2014
7:	January 31, 2015	March 31, 2015
8:	November 30, 2015	January 31, 2016
9:	March 31, 2016	May 31, 2016
10:	March 31, 2015	May 31, 2015
11:	April 30, 2015	June 30, 2015
12:	March 31, 2016	May 31, 2016
13:	August 31, 2016	October 30, 2016
14:	N/A	December 31, 2016

Key Milestones

Key Milestones	Target Date	Description
End of data collection	September 30, 2015	Data collection on bicycling industry completed
End of data collection	August 31, 2015	Data collection for visitor profile study of bicycling events completed
End of data collection	November 30, 2015	Data collection for the health effects of bicycling among Twin Cities commuters completed

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