Special Provisions

Introduction

Cambridge Systematics, Inc. (CS) and its team are pleased to submit this technical and cost proposal to prepare a truck size and weight study for the Wisconsin Department of Transportation (WisDOT). To assist Wisconsin in this important study, CS has assembled the same core team that successfully supported the Minnesota Department of Transportation’s Truck Size and Weight Study. In addition, we have added subconsultants to augment our outreach efforts and to provide technical expertise on bridge impacts of changes to truck size and weight configurations. Building on the experience of the Minnesota study, we hope to help Wisconsin assess potential changes in truck size and weight and assist WisDOT in formulating a legislative proposal. Based on our conversations with WisDOT and based on our recent experience conducting the Minnesota Truck Size and Weight Project, we are confident that this proposal describes all the tasks needed to complete the study successfully before the 2009 Legislative Session.

Project Understanding

The success of this project lies in its ability to analyze the benefits and costs of changes in truck size and weight. Successful proposals will balance economic development gains realized through enhancements in freight productivity with safety and with preservation of the infrastructure. Increases in truck size and weight provide savings to shippers, carriers, and ultimately consumers through enhanced freight productivity. Transporting heavier and larger loads on fewer trucks reduces labor, fuel, and emissions. In order for WisDOT to implement changes in truck size and weight to realize these benefits, the truck configurations must not diminish safety or unduly degrade the state’s highway and bridge infrastructure.

Scope of Work

The following narrative description of the scope of work largely follows the scope furnished by WisDOT to CS following award of the project. This proposal outlines the tasks to be performed and provides additional detail on technical, outreach, and management activities.

Purpose

The purpose of the Wisconsin Truck Size and Weight (TSW) study is three-fold:

1. Propose changes to Wisconsin’s laws that will provide for increases in heavy truck size and/or weight limits when traveling on state and local roads and bridges, in order to support the State’s economic growth;
2. Specify requirements that must be met for vehicles operating at proposed higher allowances, including but not limited to vehicle configurations, designated roads, number of axles, times and seasons of travel, fees, etc.; and

3. Develop and apply an approach to evaluate the impacts of truck size and/or weight increases, with and without various restrictions or conditions, on the State’s roads and bridges.

Task 1 - Conduct Stakeholder Outreach

Stakeholder awareness and input are critical for developing a viable legislative proposal and for subsequent legislative action. Stakeholder awareness and outreach activities will be highly visible and key components throughout the duration of this project.

The purpose of this task is to design, coordinate, and conduct a comprehensive, statewide stakeholder awareness and outreach. This process will allow all interested parties to provide their input and help decision-makers assess the opportunities and barriers to changes in the laws. These awareness and outreach activities will be conducted in consultation with the WisDOT Technical Advisory Group. This process will consist of, at a minimum, the following activities:

- Conduct public agency outreach meetings that capture inputs of public agencies and organizations directly involved in or affected by truck size and weight (TSW) laws, standards, and issues. The meetings will include representatives from a variety of technical functional areas including engineering, maintenance, and enforcement. Workshops will be conducted that identify issues and potential solutions. Separate workshops will be conducted, at a minimum, with the State and with counties/local governments.

- Conduct private sector awareness and outreach meetings that inform participants of potential changes and capture inputs from the freight industry including carriers (trucking, rail, other) and shippers, truck and trucking equipment manufacturers, and other private freight industry interests. This will include workshops and meetings as needed.

- Assist the WisDOT Project Manager in convening the TSW Advisory Committee required to be formed by legislation, including the Department of Commerce, local governmental units, trucking companies, industries that depend on truck transport, and enforcement agencies.

The CS Team will have primary responsibility for developing and conducting the awareness and outreach effort, including logistics, supporting materials, presentations, co-facilitation of the meetings (with Project Manager), and payment of associated direct meeting expenses. The CS Team will make every effort to utilize public facilities for meetings. The outreach program will be developed jointly with the State and the appropriate project committees will be supported by State staff.

Deliverables

The CS team will:
1. Develop a stakeholder awareness and outreach plan including identification of key stakeholders having an interest in TSW laws; build and maintain a web-accessible database/document file to list contacts; accumulate meeting notes; store issue and policy papers; and track follow-up actions. The development of the outreach plan will integrate lessons learned from other truck size and weight studies conducted in other parts of the country, including the recent Minnesota study, to better prepare for potential obstacles WisDOT may encounter in this process. One specific element of the process will be the development of some facts about the study and about truck size and weight to raise awareness of stakeholders in the potential benefits and costs of changes to truck size and weight laws.

*Deliverable:* Technical memorandum describing the recommended awareness and outreach process including key stakeholders, meeting types, and meeting schedule; and a stakeholder contact database. The memorandum will also include some lessons learned from outreach in other TSW efforts and provide potential strategies to overcome obstacles.

2. Organize and hold meetings with stakeholders to raise awareness, identify needs, issues, and policy positions regarding TSW laws.

*Deliverable:* Conduct a minimum of 10 stakeholder meetings or interviews. Create meeting or interview minutes and summarize key findings for each.

3. Organize, conduct, and facilitate public sector workshops with WisDOT and with representatives of county and local government to raise awareness of the project and proposals and to identify needs, issues, and policy positions regarding TSW laws.

*Deliverable:* Conduct a minimum of two public sector workshops. Create meeting minutes and summarize key findings for each workshop.

4. Organize, conduct, and facilitate a workshop involving all interested public and private participants.

*Deliverable:* Conduct workshop and summarize results.

**Task 2 – Draft Initial Proposed Changes to TSW Laws and Practices**

The purpose of this task is to develop, early in the project, an initial set of proposed changes to Wisconsin TSW laws. These proposed changes will be:

- Shared with stakeholders for input;
- Evaluated for impacts; and
- Refined further during the course of the project.

The initial set of proposed changes must be based upon the following subtasks:
Task 2A - Understand the Scope, Limits, and Administration of Existing TSW Laws in Wisconsin

The CS Team will review both state and local (e.g., county, city, and township) laws, looking in particular at the following types of characteristics:

- Limits and provisions
- Exclusions and exceptions
- Roles and responsibilities
- Federal requirements and options
- Permit process, and
- Enforcement practices.

Task 2B - Review Selected TSW Laws and Practices Elsewhere

The CS Team will identify, compare, and contrast Wisconsin’s TSW laws to those elsewhere, which may provide options for addressing changes in TSW in Wisconsin. This will be done on a selective basis. It will include a review of the laws and practices of the states bordering Wisconsin. This task will also include the development of selected case studies of innovative approaches to TSW regulation nationally or internationally for possible consideration in Wisconsin. Note: This task will not include a formal literature search or market research, but rather will be based on an efficient synthesis of existing materials and selected interviews). The analysis will include the following types of characteristics:

- Structure of regulations
- Limits and provisions
- Exclusions and exceptions
- Federal requirements
- Permit process
- Process for change, and
- Impacts on infrastructure.

Task 2C - Review of Heavy Truck Equipment, Configuration, and Technology Trends

The CS Team will identify current and emerging innovations in advanced vehicle technologies that could address infrastructure impacts, safety and other issues associated with increases in TSW. These innovations could affect generally accepted technical bases for TSW laws. This task will include a survey of major truck tractor and trailer original equipment manufacturers (OEMs). The analysis will examine systems such as:
- Rollover warning systems;
- On-board scales;
- Driver-assistive safety systems;
- GPS location systems;
- Suspension, stability, steering, tire, and braking innovations; and
- Vehicle and axle configuration innovations.


CS will complete this subtask if authorized by WisDOT. Otherwise, the University of Wisconsin-Madison's National Center for Freight, Infrastructure, Research and Education (C-FIRE) will complete this task and CS will integrate the work product into the project and deliverables.

The purpose of this task is for the CS Team to better understand and gain knowledge of the economic forces, particularly those in Wisconsin, that are driving the need for increases in TSW. The CS Team will focus its analysis on how current and future trends are affecting the trucking, shipping, and logistics industries and their relevance to TSW laws; and how potential changes in TSW might best respond to these trends. The CS Team’s analysis will examine factors such as:

- Lengths of hauls;
- Farm to market routes;
- Intermodal containers and trailers (international and domestic trends);
- Commodity flow characteristics;
- Increases in truck traffic; and
- Congestion/system capacity restraints.

**Task 2E – Prepare Wisconsin Truck Safety Statistics and Summary**

The CS Team will gather Interstate and expressway truck related safety data over the past 10 years and identify areas throughout the state that experience higher than average rates of truck crashes.

**Task 2F – Draft Initial Proposed Changes to TSW Laws and Practices**

The CS Team will prepare a report with initial proposed changes Wisconsin TSW laws and practices based on previously completed subtasks.

**Deliverables**

The CS Team will:
1. Based upon its review, summarize as specified the existing TSW laws in Wisconsin including information from current and recent Wisconsin Legislative sessions, as well as other state and local studies and proposals pertaining to Wisconsin TSW laws.

**Deliverable:** Technical memorandum summarizing laws, practices, and key findings.

2. Review, compare, and contrast Wisconsin TSW laws and practices with TSW laws and practices of the states bordering Wisconsin; include selected case studies of innovative approaches to TSW regulation nationally or internationally for possible consideration in Wisconsin.

**Deliverable:** Technical memorandum summarizing key findings and case studies.

3. Review available state, national, and international information and studies on heavy-truck equipment, configurations, and technology trends, focusing on changes affecting TSW laws and practices.

**Deliverable:** Technical memorandum summarizing key findings, including discussion of trends and the relevance of potential changes to TSW laws and practices.

4. Conduct a survey of major truck tractor and trailer OEMs.

**Deliverable:** Technical memorandum summarizing key findings, including discussion of trends and the relevance of potential changes to TSW laws and practices.

5. **Only if authorized by WisDOT, as an optional subtask (2D),** profile industry/commodity flows and carrier routes; utilizing the information developed for the State’s Statewide Freight Plan and related resources, develop information and maps summarizing significant industry/commodity flows and carrier routes (especially over state, county and local roads).

**Deliverable:** Technical memoranda and GIS-based maps.

6. **Only if authorized by WisDOT, as an optional subtask (2D),** review changing business practices and economic forces affecting the trucking, shipping, and logistics industries, focusing on how the changes will affect and be affected by TSW laws and practices.

**Deliverable:** Technical memorandum summarizing key findings of Task D.

7. Draft a Technical Memo highlighting areas throughout Wisconsin on interstates and expressways that experience high truck crash rates.

**Deliverable:** Technical memorandum summarizing areas with high truck crash rates.

8. Draft a set of initial proposed changes to Wisconsin’s TSW laws and practices. The changes will be based on stakeholder input (to date) from Task 1 and the findings and conclusions of the Task 2 research and stakeholder workshop.

**Deliverable:** Draft of initial proposed changes to Wisconsin’s TSW laws and practices.
Task 3 – Develop TSW Policy Framework and Evaluation Approach
Conduct Evaluation of Impacts of Proposed Changes

The purpose of this task is to: 1) develop policies and objectives that provide a basis for TSW laws; and 2) develop and apply a specific evaluation approach for considering proposed changes. These will provide a statewide and systemwide approach to TSW law. The policies and objectives will reflect agreed upon guiding principles including, but not limited to the following:

- Asset management;
- Economic development;
- Revenue capture;
- Enforcement;
- Safety;
- Equity; and
- Linkages to the State’s Statewide Transportation Plan.

CS will work with WisDOT early in the project, especially during Tasks 1 and 2, to potentially refine the guiding principles and the evaluation framework or adapt it to reflect issues faced by other states considering TSW changes.

The evaluation approach will consider the following attributes, among others:

- **Costs** – Estimates of the incremental and life cycle costs of predicted damage impacts, as well as any additional enforcement and/or administrative costs;
- **Benefits** – Estimates of economic benefits accruing from changes in TSW;
- **Revenues** – Identification of any fees that should be charged and estimates of revenue streams over time;
- **Flexibility** – Capability of responding to a variety of proposed changes to TSW on the state and local road systems;
- **Data Inputs** – Identification of the data requirements for evaluation;
- **Ease of Use** – evaluation of whether the level of expertise required is reasonable;
- **Compliance** – Evaluation of expected compliance as well as the enforceability of the changes;
- **Performance Basis** – Provision for measurable outcomes;
- **Implementation** – Inclusion of phasing/limits/tradeoffs analysis as needed;
- **Structure Analysis and Rating Procedures for Bridges**; and
- Analysis and Rating Procedures for Pavements and Other Roadway Geometric Features.

The evaluation framework will be appropriate for ongoing use by WisDOT after completion of the project. The evaluation approach will be applied to assess the impacts of the proposed TSW changes. The following impacts will be assessed:

- Pavement impacts;
- Bridge impacts;
- Geometric impacts;
- Congestion impacts;
- Energy impacts;
- Emissions impacts;
- Safety impacts;
- Shipper impacts;
- Motor carrier impacts;
- Rail impacts; and
- Other impacts as agreed upon.

The level of assessment detail will vary by impact area, reflecting the availability of data and analytical methods; magnitude, duration, incidence, and significance of the impact; and the time and budget available to the project. Where possible, CS will estimate the costs of both damage and/or infrastructure upgrades required to accommodate the proposed configurations.

Particularly detailed efforts must be spent with regards to the impacts on bridges and pavements caused by proposed vehicle configurations. Structural analysis and rating must be performed on the current inventory of bridges to evaluate safety, posting, and other criteria. An assessment of bridge replacements and bridge postings must be included, including costs associated with infrastructure improvements to accommodate proposed configurations. Also, an assessment of impacts to pavements must be included. This task will require close coordination with Bureau of Structures staff and other DTSD-pavement staff.

Through the development of this proposal, the CS team has worked with the Bureau of Structures to define the preliminary work steps for the bridge assessment. Further discussion between the CS team and WisDOT will be necessary to develop a final technical approach. Based on conversations with WisDOT, we anticipate that the bridge assessment will require the following steps:

1. Obtain bridge data from the Wisconsin DOT bridge office.

For each bridge to be analyzed, obtain the following information: 1) length of maximum span; 2) operating rating; 3) type of vehicle or load model used to generate operating rating; 4) highway system and location of the bridge (for CS to produce maps); 5) overall bridge length; 6) deck width; 7) bridge material and type; 8) average daily traffic; 9) average daily
truck traffic; 10) detour length; and 11) whether the bridge is currently posted. All the data items should be available, since the state is required to collect it as part of the Federal bridge inventory. The first three items are required to determine whether the bridge will have to be posted (or replaced) under different scenarios. The remaining items are required to determine posting and replacement costs. An on-site consultant, working with the Bureau of Structures, will collate the information from HSIS data.

2. Evaluate bridges.

Because Wisconsin bridges are designed for liveload continuity it will be necessary to evaluate rating factors. We propose to evaluate a fixed number of bridges (up to 16) based on concrete slab, prestressed girder, and structural steel for typical span arrangements. This estimate is based on evaluation of four (4) vehicle configurations.

3. Determine bridges that would have to be posted (or replaced) under each scenario

Using the outcomes of the evaluation scenarios and the data acquired in step 1, the team will estimate the number of bridges that will need to be posted or reinforced under each scenario. The team will also calculate order-of-magnitude costs for each proposal.

4. The team will develop a spreadsheet containing data for selected bridges.

Deliverables

The CS Team will:

1. Review available state, Federal, and international TSW policy and evaluation frameworks.

2. Recommend a TSW policy framework and approach to evaluating proposed changes.

Deliverable: Technical memorandum summarizing policy framework and evaluation approach, including necessary data inputs and analytical methodologies.

3. Assess impacts of the proposed TSW changes.

Deliverable: Technical memorandum summarizing the impacts of the proposed TSW changes and implementation approaches. The technical memorandum will give special attention to pavement and bridge impacts, including costs for improvements to accommodate proposed configurations.

4. Framework and Evaluation Tools

5. Training and Training Materials to WisDOT staff on how to use Framework and evaluation tools
Task 4 - Recommend Legislation to modify Wisconsin TSW

The purpose of this task is to identify specific elements for proposed legislation. The outcome and activities of this task depend on the benefits identified in Task 3 and whether, based on the benefits vs. costs, if any configurations merit advancement to a legislative proposal. The CS team recognizes the possibility that evaluation results may lead WisDOT to recommend no TSW changes to the legislature. Assuming the evaluation supports legislative advancement of changes to TSW law, the legislative proposal will include the following types of attributes:

- Allowable limit increases;
- Allowable vehicle types/configurations;
- Allowable road system network or segments;
- Time or seasonal limits;
- Permit fees;
- Enforcement;
- Implementation plan (phasing, etc.); and
- Other requirements, restrictions, or conditions.

The legislative proposal will be written to contain the above elements, to reference appropriate statute numbers, and to contain the precise language to be included in the legislation.

The proposal will also be accompanied by a report containing findings from the evaluation of the TSW changes using the evaluation approach developed under Task 3 above.

The CS Team must deliver the final draft legislation no later than January 1, 2009.

Deliverables

The CS Team will:

1. Prepare draft TSW legislation Wisconsin. If the evaluation in Task 3 does not support a legislative proposal, the team will develop an appropriate legislative recommendation that may suggest no changes to TSW limits.

   Deliverables: Draft legislation as specified.

2. Prepare report summarizing proposed legislation or recommendation, identifying rationale and basis for proposed changes (if any), and providing an assessment of the impacts of the proposed changes using the evaluation findings from Task 3.

   Deliverables: Report as specified.
Task 5 - Wisconsin TSW Policy Implementation Guidance

The task includes providing guidance to WisDOT on how different processes, procedures, and technologies may need to be modified or updated to accommodate revised TSW laws including:

- Oversize Overweight Permitting Procedures;
- Safety and Weight Enforcement Inspection Facility Inspection Technologies; and
- Commercial Vehicle Inspection and Information Networks (CVISN)

The CS team will recommend national best practices appropriate to any observed or anticipated organizational strengths or weaknesses of WisDOT delivery of TSW programs.

Deliverables

The CS Team will:

1. Review and assess impacts to existing TSW policies, procedures, and technologies
2. Recommend required adjustments to accommodate future changes in TSW laws in Wisconsin

   Deliverable: Technical memorandum summarizing the findings and recommendations of the task.

Task 6 - Develop Performance-Based Process for Evaluating and Administering Wisconsin TSW Laws

CS will complete this task if authorized by WisDOT. Otherwise, the University of Wisconsin-Madison’s National Center for Freight, Infrastructure, Research and Education (C-FIRE) will complete this task and CS will integrate the work product into the project and deliverables.

The purposes of this task are to develop a method for the ongoing assessment of TSW laws, establish performance measures, and recommend effective institutional approaches for administering and enforcing TSW laws and for considering future proposed changes.

Deliverables

Only if authorized by WisDOT, as an optional subtask, the CS Team will:

1. Review available state, Federal, and international approaches to performance-based processes for evaluating and administering Wisconsin TSW laws.
2. Recommend a performance-based program for the ongoing evaluation and administration of Wisconsin TSW laws, including institutional procedures and technical analyses.

   Deliverable: Technical memorandum summarizing the findings and recommendations of the task.
Task 7 – Final Report

The purpose of this task is to produce the final report. The report will document the findings, methodologies, and recommendations of Tasks 1 through 5. An executive summary will be provided as a separate document. The CS Team must deliver the final report no later than January 1, 2009.

Deliverables

The CS Team will:

1. Produce a draft Executive Summary, draft Technical Report, and draft PowerPoint summary presentation.

   Deliverables: Draft documents and presentation.

2. Review draft report and presentation with the State.

3. Produce a final Executive Summary and final Technical Report based upon comments provided by the State.

   Deliverables: Fifty (50) printed and bound color copies of the Executive Summary. Twenty (20) CD-ROMs (with printed CD label) containing PDF versions of the Executive Summary and the Technical Report. One (1) electronic copy each of the Executive Summary and Technical Report in Microsoft Word DOC. One (1) electronic copy of the summary presentation in Microsoft PowerPoint PPT format.

Task 8 – Provide Project Oversight and Management

This task will assist the State with project management, including:

- Provide administrative and technical support to the legislatively mandated Policy Advisory Committee (PAC), which is responsible for ongoing project guidance and overall decision-making. The CS team will work with WisDOT very early in the project to identify membership for this committee and to organize a formative meeting (likely for July 2008).

- Provide administrative and technical support to the WisDOT Technical Advisory Group (TAG), which is responsible for timely/regular technical review and project guidance, and review of all study deliverables. This group will be comprised of WisDOT representatives and may also include representatives from the Federal Highway Administration (FWHA) and Federal Motor Carrier Safety Administration (FMCSA) and may also include ad hoc membership from relevant local transportation agencies.

- Only if authorized by WisDOT, as an optional subtask, the CS team will assist with establishment of a Peer Review panel including meeting scheduling, organization, and liaison. Otherwise, the University of Wisconsin-Madison’s National Center for Freight,
Infrastructure, Research and Education (C-FIRE) will complete this task and CS will integrate the work product into the project and deliverables.

- Assist the project manager with other project management duties as assigned.
- Provide technical assistance as requested during the 2009 Legislative Session.

This task will be conducted for the duration of the project.

**Deliverables**

The CS Team will:

1. **Provide administrative and technical support to the Policy Advisory Committee (PAC).**

   *Deliverable: Organize and attend Policy Committee meetings; provide notices and mailings; take and distribute minutes; and make presentations as requested. This proposal anticipates four meetings of the PAC at key milestones or every other month of the project.*

2. **Provide administrative and technical support to the WisDOT Technical Advisory Group (TAG).**

   *Deliverable: Organize and attend Technical Advisory Group meetings; provide notices and mailings; take and distribute minutes; and make presentations as requested. This proposal anticipates three meetings of the TAG at key technical milestones of the project with schedule to be determined in consultation with WisDOT.*

3. **Only if authorized by WisDOT, as an optional subtask, advise and assist the State with establishment of a Peer Review panel.**

   *Deliverable: Organize and facilitate two meetings with the Peer Review Panel.*

4. **Assist project manager with appropriate project management duties as requested.**

   *Deliverable: Provide technical assistance to the State upon State’s request during the 2009 Legislative Session.*

**Schedule**

Based upon our current understanding of the project, we anticipate that the overall period of performance will be approximately 13 months from the date of acceptance of this proposal by WisDOT. This period of performance is comprised of the delivery of the study (the first 9 months of the study—through January 2009) plus an additional four months of on-call coverage to support additional activities associated with advancing the legislative proposal. Assuming our receipt from WisDOT of a formal approval of this scope of work and budget on or about the first week of June 2008, we are confident of our ability to deliver the products described above on a schedule that would allow for the completion of all work associated with this assignment by
January 31, 2009. To ensure project delivery and client satisfaction, we will hold a kickoff meeting with the WisDOT project manager and our project management team to discuss specific tasks. At this meeting we will establish specific timeframes for deliverables and meetings, including potential dates for initial outreach activities, advisory committee meetings, and technical meetings with WisDOT staff and our wider consulting team. We are aware of the need to provide at least a Draft Report to the Policy Advisory Committee (PAC), if possible in November 2008 to obtain comments and integrate changes for a December 2008 delivery of a Draft Final Report.