

Canadian Naturalistic Driving Study

Business Case and Study Design

Canadian NDS Project Group
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After decades of progress were are slipping.

- Progress towards Canada's national road safety target is disappointing and not likely to be achieved without significant effort.
 - The national target calls for a 30% decrease in the average number of road users killed and seriously injured during the 2008-2010 period over comparable 1996-2001 figures.
- In 2006, there were almost 2,900 fatalities and 15,000 serious injuries. If Canada were on track those numbers should be 2,400 fatalities and 13,500 serious injuries.
- The direct and indirect costs of motor vehicle collisions in Canada were estimated to be \$63 billion per year in 2004.
 - <http://www.tc.gc.ca/roadsafety/tp/tp14800/menu.htm>
- Since 2001, Canada's OECD ranking in road safety has slipped from 5th to 11th.
- Canadian Council of Motor Transport Administrators (CCMTA) has initiated planning for new targets in 2020.

The wheels are in motion!

- CCMTA's Road Safety Research and Policy (RSRP) Standing Committee recommended in October 2007 that a Canadian NDS should be explored.
- In December 2007:
 - The CCMTA Board of Directors approved the RSRP recommendation;
 - Council of Transport Deputy Ministers Engineering and Research Support Committee (ERSC) supported NDS and appointed two project representatives.
- A national NDS project group was struck in January 2008.
- In April 2008, the Council of Transport Deputy Ministers supported the initiative and requested that the project group proceed to develop a business case and recruit potential funding partners.
- ERSC/project group to return to Council of Transport Deputy Ministers in Fall 2008 with an update and will seek further direction.
- Terms of reference and a partnership prospectus have been completed.

Project Group Mandate

- Develop a proposal for the Canadian NDS including responding to key methodological questions, study design issues and refining cost estimates;
- Seek out corporate, government and other non-governmental partners to support planning and funding the Canadian project;
- Promote involvement of Canadian universities to build Canadian capacity and expertise in analyzing and using naturalistic driving data; this will also serve to train and support students and graduate students; and
- Develop and implement knowledge transfer protocol.

The project group is a work in progress...

Current Project Team

- ON (co-chair): Leo Tasca
- TC (co-chair): Paul Boase
- TC: Brian Jonah
- TC: Peter Burns
- CCMTA – RSRP: K Speiran
- SHRP2: Ralph Hessian
- SHRP2: Derek Sweet
- ERSC: Dirk Nyland
- ERSC: Al Kwan
- Council of Deputies: John Pearson

Potential new members and funding partners

- Provincial ministries of transport
- Auto21 (academic road safety research consortium funded by Industry Canada Centre of Excellence)
- Insurance Bureau of Canada
- Canadian Automobile Association
- Canadian Institute of Health Research
- Transportation Association of Canada
- Automotive Industry
- NSERC
- Private Foundations

Prospectus: making the case to potential funding partners.

- Provides overview of SHRP2 and the naturalistic approach
- An NDS is leading edge research and presents a unique opportunity for partnering to achieve mutual benefits. Europe is considering similar studies.
- SHRP2 has offered to collaborate with Canada, thereby presenting the occasion to leverage more than \$10 million in US research – Canada would be in a position to take advantage of the entire SHRP2 framework, from research question formulation, through data acquisition R&D, to data collection, storage and manipulation specifications.
- This presents the unique opportunity to gather unprecedented, real-life data on Canadian driving habits and collision risk.
- Canada would tailor its participation to examine issues that can complement the SHRP2 study, while ensuring that the data are sufficiently robust to enable compatibility and broader analyses against US, and potentially, European data.

Prospectus: the clock is ticking.

- A study of this magnitude requires a broad base of public and private sector support. The bulk of the funding will be needed for 2010/2011.
- Funding partners will have a voice in the determination of the study specifics, and in the management of the study.
- Prospective partners need to make their interest known by Fall, 2008.
- A decision on whether to proceed will be made by Spring, 2009 by the Council of Transport Deputy Ministers.

Research Design Issues - 1

- Canadian study should focus on Canadian road safety issue that yields new data not otherwise obtained by SHRP2
- Develop Canadian research questions
- Driver sample: either representative or strategic
- Driver selection/testing/remuneration
- Study locations
- Number/type of vehicles
- Length of study

Research Design Issues -2

- Privacy and ethics issues
- Road data acquisition
- Data storage and access
- Crash investigation teams
- Quality control/assurance protocols
- Project governance

CNDS – Decision Factors

Benefits

- **Safety.** The CNDS ultimate objective is to improve road safety.
- **Utility for Countermeasure Development.** The results must enable federal government and provincial/territorial governments to develop evidence-based policies and standards; private sector partners must obtain information that improves profitability of their products/services.
- **Utility for Research.** The data should be able to foster ongoing research capacity and research expertise in Canada.
- **Value-added to SHRP2** - Data should provide an additional insight into driver behaviour/performance that complements SHRP2.
- **Partner Support.** This would include direct funding, volunteer professional services-in-kind, access to resources/subjects for the actual conduct of the study and letters of support.

CNDS – Decision Factor *Costs*

- Project Costs. A direct function of study focus and design:
 - Drivers: number; sample [representative or strategic];
 - Remuneration
 - Length of study
 - Data: Vehicle DAS; road data; data storage/access; crash investigation
 - Administration: Quality Control/Quality Assurance
 - Geographic location
- Consistency with SHRP2.
 - Will lead to cost efficiencies through leverage.

Funding Requirements

- Results must be statistically significant
- Total amount required will be a function of study design:
 - Number of vehicles
 - Duration
- SHRP2 estimates:
 - \$7, 500 per vehicle year
 - \$2 million for 250 vehicles
 - Duration not confirmed: 1 to 2 years
 - Estimate does not include data analysis and data storage costs

Possible Topics

- Older drivers with medical condition(s) of particular interest.
 - Seek consent to link real-time information about a driver's health status and frequency of medical treatment/prescription drug use with their real-time driving performance data.
- Young drivers with low BAC - some Canadian jurisdictions permit fully-licensed drivers under the age of 21 to consume alcohol.
 - This study offers an opportunity to focus on these young drivers; passive dermal alcohol sensors on steering wheels could be used to measure BAC and track performance if/when driving with a low BAC.
 - Would help us better understand combined effects of low BAC and other risk factors such as distracted driving, fatigue and speeding.

Possible Topics

(Continued)

- Compare young novice and older novice drivers - Canadian jurisdictions have graduated licensing programs that also apply to adult novice drivers.
 - Unique opportunity to assess the performance differences between three groups of drivers – teen novices, adult novices and experienced drivers.
- Driving in remote/rural region with relatively long winter.
 - Need to better understand how driving behaviour and performance is affected in areas characterized by long driving trips.

Decision Process and Timeline

- Fall, 2008 - Response deadline to prospectus seeking funding partners
- Dec. 2008 - Draft business case and study design report
- Mar. 2009 - Final report and recommendation to Council of Deputy Ministers
- Spring, 2009 - Final decision by Council of Deputy Ministers
- 2010/2011 - Implementation (contingent upon approval)