

TransTech Data Services

Kicking Horse Canyon Origin/Destination Survey Survey Design and Results Report

Commercial Vehicle Origin/Destination Survey

Dates: August 17 & 18

Hours: 0730 - 0130

Location: Golden Weigh Scale

Since an appropriate site for interviewing truck drivers travelling eastbound could not be found, eastbound data was collected by asking westbound drivers about their previous eastbound trip. Trucks would enter weigh scale from an exit lane off of Route 1 westbound and are weighed by scale on the north side of scale administration building. Trucks were stopped and interviewed before reaching the scale. Trucks travelling north on Route 95 and then turning west were not required to enter the scale.

Previous experience doing truck surveys at weigh scales has shown us that trucks often travel in convoys and as such, interviewers skipped the first two or three trucks in the convoy, so that the delay caused by the interview was just time that would have been spent waiting for a preceding truck to be weighed. Empty flat deck trucks and utility trucks (e.g. Telus service vehicles, oversize tow trucks, etc), often used the by-pass lane past the scale, and were not stopped due to safety factors.

Every effort was made to complete each interview as quickly as possible so that queuing problems were not exacerbated. Many of the fields on the interview form could be completed before the truck stops, and the remainder of the survey could be completed in 20 seconds to one minute. Occasionally, interviews may took longer if the driver is uncooperative, or unsure about some of the specifics of their trip, or load being carried.

Weather on both days was dry and clear. There were no issues with survey except for occasional backup into the scale, which was a result of volume rather than as a result of our survey. We had no complaints from weigh scale staff.

Passenger Vehicle Origin/Destination Survey

Origin/Destination Surveys require a portion of motorists to be stopped and interviewed on a given section of road. For this survey, an interview lane was deployed at a four-lane section of Route 1, approximately 10 KM east of Golden. For simplicity, safety, and minimization of delays, the lane closure was started at the point, for each direction, that the single lane diverges into two lanes. The interview lane was coned to be extra wide to ensure that interviewers have a safe area in which to work between drivers in each lane.

There were six on-site personnel conducting the survey: one traffic control person, one classifier, three interviewers, and one supervisor. The survey was conducted by the flagperson directing vehicles into the interview lane in groups of three, and then allowing succeeding traffic to proceed in by-pass lane until interviewers are ready for another set of vehicles. Depending on traffic flow, the trailing three or four vehicles in a "platoon" were directed into the interview lane as this minimized delays for drivers, the chance of rear-end collisions, and the "sheep effect" of drivers just following the car in front. Upon completion of the interview, drivers were thanked by the interviewer and directed to proceed on their way within the interview lane. This lane

was coned off for approximately 150 meters so that vehicles that have participated in the survey can safely accelerate back up to highway speeds with no concern about unexpected lane changes from vehicles in the bypass lane.

Traffic control was provided by Crossroads Traffic Control, a company based in Golden and therefore with good knowledge of local traffic conditions. A lane closure layout for origin/destination surveys requires only one traffic control person, located at the gore of the bypass and interview lane. The most downstream interviewer was responsible for stopping the first of the three or four vehicles directed into the interview lane by holding out their hand or clipboard similar to the way police perform roadside checks.

The interview process typically takes from 10 seconds to one minute, sometimes longer if the driver was unsure of the origin and/or destination, or if there was a language barrier. Since only a fraction of the vehicles were actually stopped, delay to the average motorist was minimal, but in the event of excessive queuing (greater than 150 meters) as a result of the survey, traffic was permitted flow freely through the by-pass lane without stopping.

Complaints are normal for origin/destination surveys, with drivers in a hurry often dismayed with being required to stop. While interviewers have a friendly demeanor to reduce driver's frustration, some drivers did complain and/or refuse to cooperate with the survey. Drivers were not required to answer any of the questions, and if they declined to be interviewed, they were only asked to obey traffic control. A sign was erected on-site (at the end of the interview area) providing contact information for questions, comments or complaints regarding the project. TransTech received only one telephone complaint through our answering machine, in which the caller "thanked" TransTech for delaying them, but did not leave a contact number.

At the site of the eastbound survey, initially there was an issue with local river rafting companies ignoring traffic control, as well as common-sense driving practice, to access PKS Construction storage area. The site supervisor liaised with these individuals and indicated that an entrance to this area existed at the rest area. These individuals were also asked to inform colleagues at their companies and the other companies of this entrance to the site, so that safety of our survey site was not compromised. This action resolved the issue.

Weather was clear and dry for the 19th, 20th, and most of the 21st. It rained most of the 22nd, and there was a brief period when traffic was allowed to flow freely due to the amount of standing water on the roadway.

Eastbound direction setup:

Dates: August 19 & 22

Hours: 0900 -1900

Eastbound Route 1 changes from a single lane to two lanes at eastbound LKI segment 990 at KM 11.6 and returns to a single lane after 1.7 KM (measured from Route 95). Our lane closure used approximately 200 meters of this section. Drivers directed to interview lane wishing to use the rest area in this four-lane section had approximately 400 meters to merge to the fast lane before the left turn lane begins for the rest area entrance.

Westbound direction setup:

Dates: August 20 & 21

Hours: 0900 -1900

Westbound Route 1 changes from a single lane to two lanes at eastbound LKI segment 990 at KM 13.3 and returns to a single lane after 1.2 KM (measured from Route 95). Our lane closure used approximately 200 meters of this section. Drivers in the bypass lane wishing to use the rest area in this four-lane section had approximately 700 meters to merge to the slow lane before the right turn entrance into the rest area.

The following parties were contacted and informed of the surveys:

Ministry of Transportation Burnaby Communication Centre

Ministry of Transportation Kamloops Regional Office
Ministry of Transportation Golden Office – Denise Bollinger
Kicking Horse Canyon Project – Murray Tekano
Golden RCMP
Other Regional Emergency Service Providers
PKS Construction – Tim Huffman
Golden Weigh Scale – Brian Austin

Data Reports

The data has been tabulated and summarized in two separate spreadsheets, one for the commercial vehicle survey and one for the passenger vehicle survey. The commercial vehicle spreadsheet is comprised of the following:

- Main data table (the raw entered data)
- Matrices of the eastbound trips between trip origins and destinations
- Matrices of the eastbound trips between day origins and destinations
- Matrices of the westbound trips between trip origins and destinations
- Matrices of the westbound trips between day origins and destinations
- Tables and graphs summarizing commodities and truck types, by direction
- Pivot tables for commodities and truck classification

The passenger vehicle spreadsheet is comprised of the following:

- Main data table
- Matrices of the trips between trip origins and destinations, by day and direction
- Matrices of the trips between day origins and destinations, by day and direction
- Matrices of trip purpose and number of occupants, by day and direction
- 15-Minute vehicle classification sheets, by day and direction
- Vehicle classification summary
- Origin-destination pivot tables
- Vehicle type pivot table
- Purpose and occupancy pivot table

The pivot tables mentioned provide a quick and easy way in which the user can aggregate data to suite his or her needs.



Photo 1: Eastbound at start of four lane divergence



Photo 2: Eastbound at end of four lane section



Photo 3: Westbound at start of four lane divergence



Photo 4: Westbound at start of four lane divergence



Photo 6: High angle view of Weigh Scale



Photo 5: Westbound queue at Weigh Scale entrance

Origin/Destination Survey



Observer Name _____

Day: 1 2 3 4
(Circle One)

Direction: EB WB
(Circle One)

Shift _____

Sheet # _____

Time (24 Hour)	Time (24 Hour)	Time (24 Hour)	Time (24 Hour)
Occupants 1 2 3 4 5 6 ____ (Circle One)	Occupants 1 2 3 4 5 6 ____ (Circle One)	Occupants 1 2 3 4 5 6 ____ (Circle One)	Occupants 1 2 3 4 5 6 ____ (Circle One)
Vehicle Type Car Pickup/Van RV Motorcycle Other Trailer: None Camper Boat Utility Other (Circle One of Each Line)	Vehicle Type Car Pickup/Van RV Motorcycle Other Trailer: None Camper Boat Utility Other (Circle One of Each Line)	Vehicle Type Car Pickup/Van RV Motorcycle Other Trailer: None Camper Boat Utility Other (Circle One of Each Line)	Vehicle Type Car Pickup/Van RV Motorcycle Other Trailer: None Camper Boat Utility Other (Circle One of Each Line)
Trip Purpose Work Shopping Personal Single-Day Multi-Day	Trip Purpose Work Shopping Personal Single-Day Multi-Day	Trip Purpose Work Shopping Personal Single-Day Multi-Day	Trip Purpose Work Shopping Personal Single-Day Multi-Day
Trip Origin ____ or Specify: Code	Trip Origin ____ or Specify: Code	Trip Origin ____ or Specify: Code	Trip Origin ____ or Specify: Code
Day Origin <input type="checkbox"/> or Specify: As Above Code	Day Origin <input type="checkbox"/> or Specify: As Above Code	Day Origin <input type="checkbox"/> or Specify: As Above Code	Day Origin <input type="checkbox"/> or Specify: As Above Code
Day Destination ____ or Specify: Code	Day Destination ____ or Specify: Code	Day Destination ____ or Specify: Code	Day Destination ____ or Specify: Code
Final Destination <input type="checkbox"/> or Specify: As Above Code	Final Destination <input type="checkbox"/> or Specify: As Above Code	Final Destination <input type="checkbox"/> or Specify: As Above Code	Final Destination <input type="checkbox"/> or Specify: As Above Code

Origin/Destinations

0. Between Golden and Kamloops: **Specify Town!**
- West of Kamloops
 - North of Kamloops
 - Okanagan
 - Kootenay
 - Field/Yoho Park
 - Alberta
 - Other Canada
 - Washington/California
 - Other United States

Vehicle Type (Vehicle Code + Trailer Code)

- | | |
|----------------------------|------------|
| 1. Passenger Cars/Minivans | 0. None |
| 2. Panel Van/Pickup | 1. Camper |
| 3. RV | 2. Boat |
| 4. Motorcycle | 3. Utility |
| 5. Other | 4. Other |

E.G. Pickup & Camper = 2 -- 1

Trip Purpose

- Work Trip (Including commuting)
- Shopping
- Personal Business/Medical
- Single-Day Social/Recreational
- Multi-Day Social/Recreational

Truck Survey



Observer Name _____

Shift _____

Circle One: Day 1 Day 2

Sheet # _____

Time (24 Hour Clock)		Class		GVW	kg
License Plate (Tractor)		Prov.	<input type="checkbox"/> BC <input type="checkbox"/> AB	Other (Specify) _____	
Company Name					
Commodity	<input type="checkbox"/> Empty or _____ or Specify: <input type="checkbox"/> Repeat <small>Code</small>				
Trip Origin (Furthest East)	_____ or Specify: <small>Code</small>				
Day Origin	<input type="checkbox"/> or _____ or Specify: As Above <small>Code</small>				
Day Destination	_____ or Specify: <small>Code</small>				
Trip Destination (Furthest West)	<input type="checkbox"/> or _____ or Specify: As Above <small>Code</small>				
Last EB Trip (Through Golden)	<input type="checkbox"/> or <input type="checkbox"/> None Reverse	When	_____ Days Weeks Months ...ago (Circle One)		
Trip Frequency	<input type="checkbox"/> or _____ Per... Day Week Month Year Once <small>Times</small>				
Commodity	<input type="checkbox"/> or <input type="checkbox"/> or _____ or Specify: Same Empty <small>Code</small>				
Trip Origin (Furthest West)	_____ or Specify: <small>Code</small>				
Day Origin	<input type="checkbox"/> or _____ or Specify: As Above <small>Code</small>				
Day Destination	_____ or Specify: <small>Code</small>				
Trip Destination (Furthest East)	<input type="checkbox"/> or _____ or Specify: As Above <small>Code</small>				

Time (24 Hour Clock)		Class		GVW	kg
License Plate (Tractor)		Prov.	<input type="checkbox"/> BC <input type="checkbox"/> AB	Other (Specify) _____	
Company Name					
Commodity	<input type="checkbox"/> Empty or _____ or Specify: <input type="checkbox"/> Repeat <small>Code</small>				
Trip Origin (Furthest East)	_____ or Specify: <small>Code</small>				
Day Origin	<input type="checkbox"/> or _____ or Specify: As Above <small>Code</small>				
Day Destination	_____ or Specify: <small>Code</small>				
Trip Destination (Furthest West)	<input type="checkbox"/> or _____ or Specify: As Above <small>Code</small>				
Last EB Trip (Through Golden)	<input type="checkbox"/> or <input type="checkbox"/> None Reverse	When	_____ Days Weeks Months ...ago (Circle One)		
Trip Frequency	<input type="checkbox"/> or _____ Per... Day Week Month Year Once <small>Times</small>				
Commodity	<input type="checkbox"/> or <input type="checkbox"/> or _____ or Specify: Same Empty <small>Code</small>				
Trip Origin (Furthest West)	_____ or Specify: <small>Code</small>				
Day Origin	<input type="checkbox"/> or _____ or Specify: As Above <small>Code</small>				
Day Destination	_____ or Specify: <small>Code</small>				
Trip Destination (Furthest East)	<input type="checkbox"/> or _____ or Specify: As Above <small>Code</small>				

Origin/Destination Codes 0. From Golden to Kamloops: Specify Town! 1. Southwestern BC 2. North of Kamloops 3. Okanagan 4. Kootenay 5. Field/Yoho Park 6. Alberta 7. Other Canada 8. United States	AG Agricultural Products A Automotive Products B Building Materials CHEM Chemical Products CON Concrete Products DG Dangerous Goods E Empty FEED Feed FB Food and Beverage	GF General Freight H Household Goods LAP Live Animals and Plants LOGS Logs M Machinery MAIL Mail MET Metal Products MIN Mining MISC. Miscellaneous (other)	PET Petroleum & Gas Products PL Plastic Products RS Rock and Soil TX Textiles and Clothing WP Wood & Paper Products
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