

## Technical Memorandum #2

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Subject: Identification of Data Needs

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The purpose of this memorandum is to identify the data needs required to populate the model. This memorandum also presents the potential sources for the needed data. Therefore, for the data that will be extracted through the survey, the data requirements will assist in the questionnaire development.

### ***Data Requirements***

As stated above, the data needs will be used to develop and refine the questionnaire to ensure the effective population of the model. In general, the data needs are divided into four categories:

- Volume Data: These are the data related to the number of daily border crossings which include number of crossings, by mode of transportation, time of the day, and days of the week.
- Trip Characteristics Data: These include waiting time, trip purposes, trip origin and destination, trip frequency, and length of stay. Under this category we have two subcategories:
  - Work Trip Characteristics: These include the type of work, individual wages, and income<sup>1</sup>.
  - Shopping/Vacation/Recreation Trips Characteristics: These include individual spending per trip, length of hotel stay for tourist trips, and income (when possible).
- Elasticity Data: This category includes the elasticity of travel demand with respect to travel costs (travel/wait time and vehicle operating costs) for both work and shopping/recreation trips.
- Substitution by Local Demand Data: This category includes data on the alternative shopping/recreation/vacation or working destination if the trip is forgone as well as the corresponding alternative level of spending and hourly wages.

The analysis required the population of two distinct models:

1. Economic impacts related to recreation, shopping, and vacation trips, and

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<sup>1</sup> While wages data can be useful when extracted through survey, it may also be obtained from secondary data if the survey ended being lengthy and if this type of question discourage interviewees from providing other relevant data.

2. Economic impacts related to work trips.

The following is the key data that is required for the analysis:

***Data on Recreation, Shopping and Vacation Trips***

1. Daily crossing volumes for recreation, shopping and vacation trips (passenger vehicles, buses, and pedestrians),
2. Daily crossing origin and destination: The primary objective is to find whether the trips are originated or ended in the San Diego County area and the Northern Baja California area, as the economic impact model accounts for these two regions. However, we may obtain a detailed origin or destination area within the county or Baja California.
3. Trip frequency,
4. Average delay at the border,
5. Sensitivity to delay at the border,
6. Average spending for shopping trips (by category of shopping when possible),
7. Length of stay for tourist/recreation/shopping trips (days),
8. Average Spending for tourist/vacation trips (by major categories such as: food, lodging, visitor attractions),
9. Spending for recreation trips (by category when possible), and
10. Alternative destination and level of spending if the trip is forgone.
11. Income (individual)

***Data on Work Trips***

1. Daily crossing volumes for work trips (passenger vehicles, buses, pedestrians),
2. Daily crossing origin and destination,
3. Trip frequency,
4. Occupation/type of work (by category when possible)
5. Average delay at the border,

6. Sensitivity to delay at the border,
7. Wage (hourly rate or monthly salary),
8. Percentage of trips with shorter working days,
9. Alternative work destination if the trip is forgone,
10. Alternative wage if the trip is forgone, and
11. Income

***Other Nice-to-Have Data:***

1. Demographic data, mainly data pertaining to the age of the person making the trips, and
2. Socioeconomic data such as marital status and family size.

***Potential Data Sources***

In general, volume data will be obtained from existing databases from SANDAG and the Department of Homeland Security. Data on trip characteristics, trip sensitivity to delay, and substitution of demand will be obtained through the survey at the border.

Key data requirements and proposed data sources are shown in Table 1, below.

**Table 1: Summary of Data Requirements (both directions)**

Variable	Potential Sources
<b>Volume</b>	
% of all Crossings by trip purpose	SANDAG’s northbound monthly border crossing/entry database, the INS Inspections Activity Workload Records, Department of Homeland Security Site Survey, and the INS Yearbook
Number of all Crossings by Mode (passenger vehicle, bus, pedestrians)	
Number of Crossings by Time of Day	
Number of Crossings by Day of the Week	
Number of Crossings by Month/Season	
<b>Trip Characteristics</b>	
Trip Purpose (both for Primary and Secondary purposes)	Survey
Trip Frequency	Survey
Trip Origin and Destination	Survey
Length of stay	Survey

**Table 1 Cont.: Summary of Data Requirements (both directions)**

Variable	Potential Sources
<b>Work Trips Characteristics</b>	
Type of Work (i.e. Service, Farming, Manufacturing)	Survey
Percentage of Trips that may lead to shorter work day	Survey
Average Wait time	Existing Database (INS Database) and Survey
Income	Survey
Average Hourly Wage	Existing Statistics (County Census data, and Tijuana Labor Market Survey) and Survey
<b>Recreation/Shopping/Vacation Trips Characteristics</b>	
Average Spending per Trip, in U.S. Dollars	
Recreation	Survey and Literature
Shopping	Survey and Literature
Vacation	Survey and Literature
Length of Recreation/Shopping/Tourist Trip	Survey and Literature
Wait time	Existing Database (INS) and Survey
Income	Survey
<b>Elasticity of Travel Demand with respect to Travel Costs (Waiting and Vehicle Operating Costs)</b>	
Recreation and Shopping	Survey and Literature
Vacation	Survey and Literature
Work	Survey and Literature
<b>Substitution by Local Demand</b>	
<b>In the United States</b>	
Recreation and Shopping	Survey
Vacation	Survey
<b>In Mexico</b>	
Recreation and Shopping	Survey
Vacation	Survey
<b>Demographic and Socio-economic data (Optional)</b>	
Age	Survey
Marital Status	Survey
Family Size	Survey

***Next Step***

The data needs listed above will be translated into a survey questionnaire that will be presented to stakeholders for comments before finalization. (The pretest is scheduled in late October, after the expert panel meeting.)