



3. **POV and Truck Tally Sheets (to estimate border crossing volumes):** While our team has been able to secure Caltrans loop count data, Tally Sheets (broken into 15-minute increments) will be used to estimate the total volume and general vehicle categories that crossed northbound at Calexico West (POVs) and Calexico East (Trucks) throughout the course of the project's daylight data collection efforts; and

4. **Queue Maps (to also estimate border crossing volumes):** Field crews will also notate the approximate "length of the border queue" for POVs and Trucks in half-hour increments, utilizing aerial maps of each POE - with pre-measured markers indicated on each map (in 50m increments for POVs, and 100m increments for Trucks) - as seen in the example at right.



### Field Data Collection Plan - Trucks at Calexico East POE

As with the Spring data collection effort, Crossborder field crew will primarily work in two locations related to truck traffic:

- In Mexicali, one individual will be stationed at a varying location along the Northbound Line ("NB Line" on map at right) for FAST and for Regular trucks, depending on where the beginning of delays (i.e.: queues) occur. This individual will operate in safe areas completely within City of Mexicali jurisdiction, on the northbound truck route of Calzada Abelardo Rodriguez.

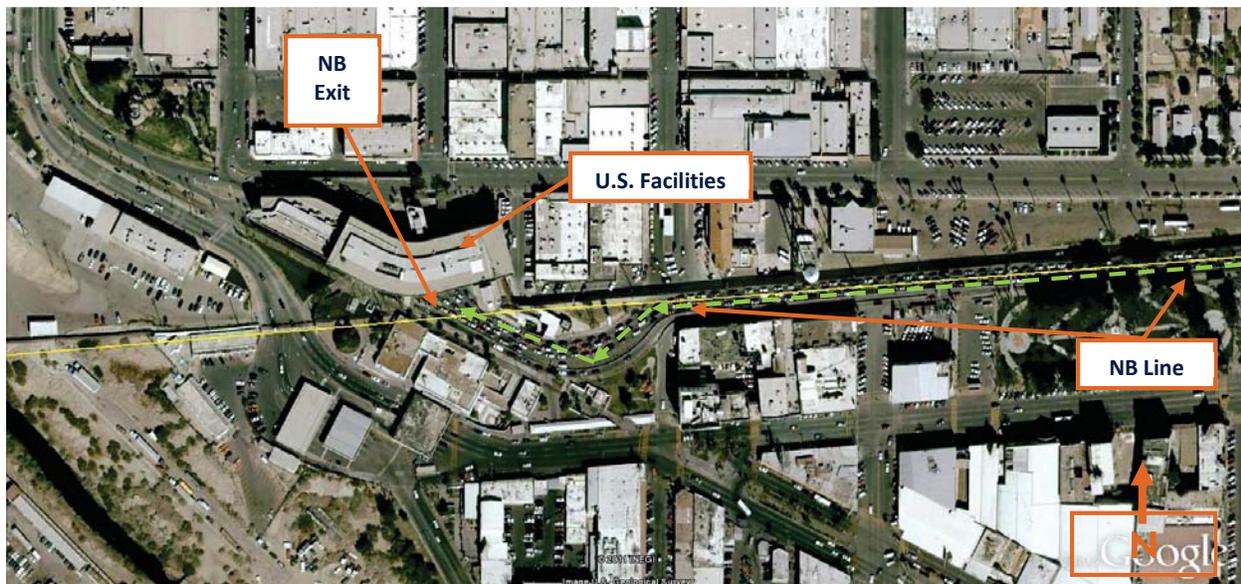
From positions at the beginning of the queue (i.e.: end of the line), this data collector will perform two data collection efforts: first, every 30 minutes, they will notate the approximate location of the end of the line on the standardized Truck Queue Map for both FAST and Regular queues; second, every 10-15 minutes, field crew will randomly select (alternating between FAST and Regular) the four most recently-arrived trucks with a tractor/semi-trailer combination and sample the last five-digits of their license plates for our License Plate Time Stamp (*please note: this target has changed from Spring 2014 given the low number of intermodal shipments experienced during that time period; tractor/semi-trailer combination made up more than two third of the total trucks*



*crossings*). Focusing our sampling on one type of vehicle allows us to have higher “match rates” since staff on both sides of the border will only be sampling from this easy-to-identify, and randomly distributed, group.

- In Calexico for this phase, field crews will be stationed at the “last inspection point” along a commercial vehicles route: the State CHP facility (“NB Exit” on the previous map, just north of US Customs and Border Protection). Adjacent to the Weigh-In-Motion scales, or some alternative location approved by CHP staff, staff will undertake two data collection activities: sampling and recording (every 10 minutes the last five-digits of the six most-recently arriving trucks with a tractor/semi-trailer combination (focusing on the same truck type to ensure a higher probability of matching the data collected in Mexicali); and second, they will continuously use the Truck Tally Sheet to count the number of various truck types that are passing through the CHP facilities (to measure volumes). *Please note that given 165 truck surveys were collected during the initial sampling period (from our 250 goal), we will concentrate the final set of 100 truck At-Border Vehicle Motor & Fuel Surveys in the Winter data collection period.*

### Field Data Collection Plan - POVs at Calexico West POE



Using the same approach Crossborder undertook during the Spring data collection period (and securing similar permissions from both the City of Mexicali and INDAABIN), we will position individuals along two general positions in Mexicali (as noted in the map above):

- In Mexicali, field crews will be stationed in varying locations along the Northbound Line (“NB Line” on map above), depending on where the beginning of delays (i.e.: queues) occur (during the Spring data collection, queues were recorded up to approximately 1.5 miles from the POE). At-border survey workers are generally located in the middle of queues, while those collecting data for Tally Sheets, Queue Maps and License Plates are located where vehicles lines are forming.

At the beginning of the queue (i.e.: end of the “NB Line”), field crews will perform three data collection efforts: first, every 30 minutes, they will notate the approximate location

of the end of the line on the standardized POV Queue Map; second, they will continuously use the POV Tally Sheet to count the number of various car types that are approaching the northbound POE (using the same formats as previously approved); third, field crew will randomly select and record the last five digits of the license plates on the License Plate "Time Stamp" Form from all Red and Green cars (a slight modification from our Spring effort, where we recorded a subset of white cars; we believe this change will result in a larger number of matches. Similar to our approach with trucks, Red and Green cars are used as a "proxy" for border crossing times of all vehicles crossing at that time - while allowing us to increase "match rates" from staff collecting data at the end of the inspection process).



In the middle of the queue, two bilingual survey workers will apply the POV At-Border Vehicle Motor & Fuel Survey to an additional 150 participants, again using the hand-held tablets used in May (with paper formats as an optional backup). The methodology used for at-border field surveys is similar to that of an exit poll: oncoming survey targets are randomly selected using each 3<sup>rd</sup> potential sample unit (i.e.: an initial vehicle is identified, and then the third target following that vehicle becomes the "randomly selected" survey target - to reduce bias). When survey targets are non-responsive, survey workers target each successive vehicle until participation occurs. It should be noted that for safety purposes, Crossborder staff is only able to survey vehicles crossing during daylight hours; staff breaks away from vehicles are required approximately every 15-20 minutes (due to carbon monoxide levels and heat exposure); and additional safety protocols are taken (particularly during high-heat environments like Mexicali/Calexico; during the Spring data collection effort, temperatures periodically ranged from 110-125 degrees, requiring more water/shade breaks and temporary stopping of data collection).

- As with the Phase 1 during Spring, survey crews will also be located just south of the "US Facilities" noted on the map (previous page), and will use the License Plate "Time Stamp" Form to collect data approximating when the "end of the inspection" process takes place near the "NB Exit" (target vehicle license plates are recorded, and watched as they enter [then clear] inspections, with the time noted then). Staff at this position will also apply the POV At-Border Vehicle Motor & Fuel Survey to SENTRI vehicles (as these queues occur only infrequently, and only in close proximity to the Calexico West POE).

### **Field Data Collection Timing - Summer 2014**

Crossborder expects that data collection will be between three- to five-days total (depending on if we are undertaking data collection with cars and trucks simultaneously). Our current target dates for Phase 2 of this project are between Wednesday, August 6, through Saturday, August 9, and one potential backup day (Sunday, August 10 - if needed). Staff will typically work during one of two 6-hour shifts, split between approximately 7:00am and 7:00pm. The planned flow of data collection for Summer 2014 is as follows:

|  | Tuesday, August 05, 2014  | Wednesday, August 06, 2014  | Thursday, August 07, 2014   | Friday, August 08, 2014   | Saturday, August 09, 2014   | Sunday, August 10, 2014 |  |
|--|---|---|---|---|---|-------------------------|--|
| <b>Calexico East - Truck Data Collection</b> |   |   |   |   |   |                         | <b>Legend:</b><br> field training<br> POV data collection<br> Truck data collection |
| <i>Morning Shift (7:00am-13:00pm)</i>        |  |  |  |  |   |                         |  |
| <i>Afternoon Shift (13:00pm-19:00pm)</i>     |  |  |  |  |   |                         |  |
| <b>Calexico West - POV Data Collection</b>   |   |   |   |   |   |                         |  |
| <i>Morning Shift (7:00am-13:00pm)</i>        |  |   |  |  |  |                         |  |
| <i>Afternoon Shift (13:00pm-19:00pm)</i>     |  |   |  |  |  |                         |  |

**Data Processing and Validation**

Similar to our quality control and data validation efforts in Spring 2014, survey supervisors in the field continuously monitor survey staff to ensure proper application of surveys, and proper recording of other data (as well as enforce a zero-tolerance policy if false data is collected [a rare occurrence, but such data is always discarded and reported]). Following each shift, paper forms are collected and reviewed for possible errors, with immediate feedback provided. Electronic data is also collected at the end of each shift, with a nightly review by Crossborder’s research staff to assess quality and production. Data collected via paper formats will be entered during the week following the field work, with sample checks done during the process to ensure accuracy.



**Data Delivery**

For the Spring 2014 phase of the project, Crossborder provided a report of initial survey results and compiled volume and characterization data approximately two weeks following the late-May data collection effort. We estimate that approximately 2 weeks will be required for processing and reporting the Summer 2014 phase of data collection as well. In addition, Crossborder Group will coordinate with T. Kear Transportation Planning and Management, Inc. (T. Kear), on the combined survey and data elements from both Spring and Summer, to being creating a unified set of data that will be used for the overall project, as well as seasonal analysis and modeling. The data will be delivered in Excel or SPSS formats, depending on the needs defined by T. Kear.

**Examples of the Questionnaires and Data Collection Formats used in Spring 2014 are provided in the following pages. Please note that the current plans are to continue using these formats unless additional changes are requested from the Imperial County APCD and the Technical Advisory Committee.**

