Reduction of Emissions through Collective Transport Infrastructure on International Bridges

U.S. – Mexico Border Program

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Population growth along the US-Mexico Border has been significant in recent decades. This growth has added pressure and directly affected various transboundary environmental systems such as airsheds and watersheds between the two countries. Air quality has been impacted by not only industries/maquiladoras found in the border area, but commercial and passenger traffic going back and forth between both countries. Border crossings have severe congestion conditions generated by the safety procedures, infrastructure and mode of transport of recurring travelers.

The Instituto Municipal de Investigación y Planeación (IMIP) received a border grant to carry out a transportation and emission study at the three major Port of Entry (POEs): Paso del Norte (Figure 1), Bridge of the Americas (BOTA), Ysleta-Zaragoza, between El Paso, Texas – Ciudad Juárez, Chihuahua; in order to help update a transportation demand model used by planners that would help binational planners understand the different transportation modalities (i.e. private/public transportation, pedestrian) preferred by users. With this model, IMIP then evaluated the impact of utilizing a dedicated public transport lane at the Paso del Norte POE.

The project aimed to show how implementing this strategy would allow for a reduction in emissions due to a reduction of vehicle idling at the POE and foster compliance with rules and standards related to vehicular emissions.

Figure 1. Paso del Norte Porte of Entry project study area.

In order to develop the baseline data for the MOtor Vehicle Emission Simulator (MOVES) model used, the project team evaluated existing data (travel time, # of vehicles crossings) available from US and Mexican Agencies; the study evaluated existing infrastructure and roadways at and surrounding each of the POEs; and lastly, conducted over 2,200 surveys at each of the POEs from both private and pedestrian traffic to obtain a baseline of preferred method of travel between the two cities and to determine the various travel corridors once travelers crossed the POEs.

The study found that the amount of pollutant emissions criterion on the Paso del Norte international bridge can be reduced by up to 11%, by implementing and operating an exclusive lane for public transport vehicles compared to current conditions (Figure 2). The economic costs for the implementation of the exclusive transport lane on the "Paso del Norte" international bridge are relatively low compared to the potential environmental and time-saving benefits. It was estimated that the implementation of a lane dedicated for public transport would have a cost of close to $2.5 million USD. However, the implementation of the project proposal will be very difficult for the time being, due to the restrictions imposed by the authorities on the use of the lanes on the "Paso del Norte" international bridge. For a copy of the final report, please contact the North American Development Bank.

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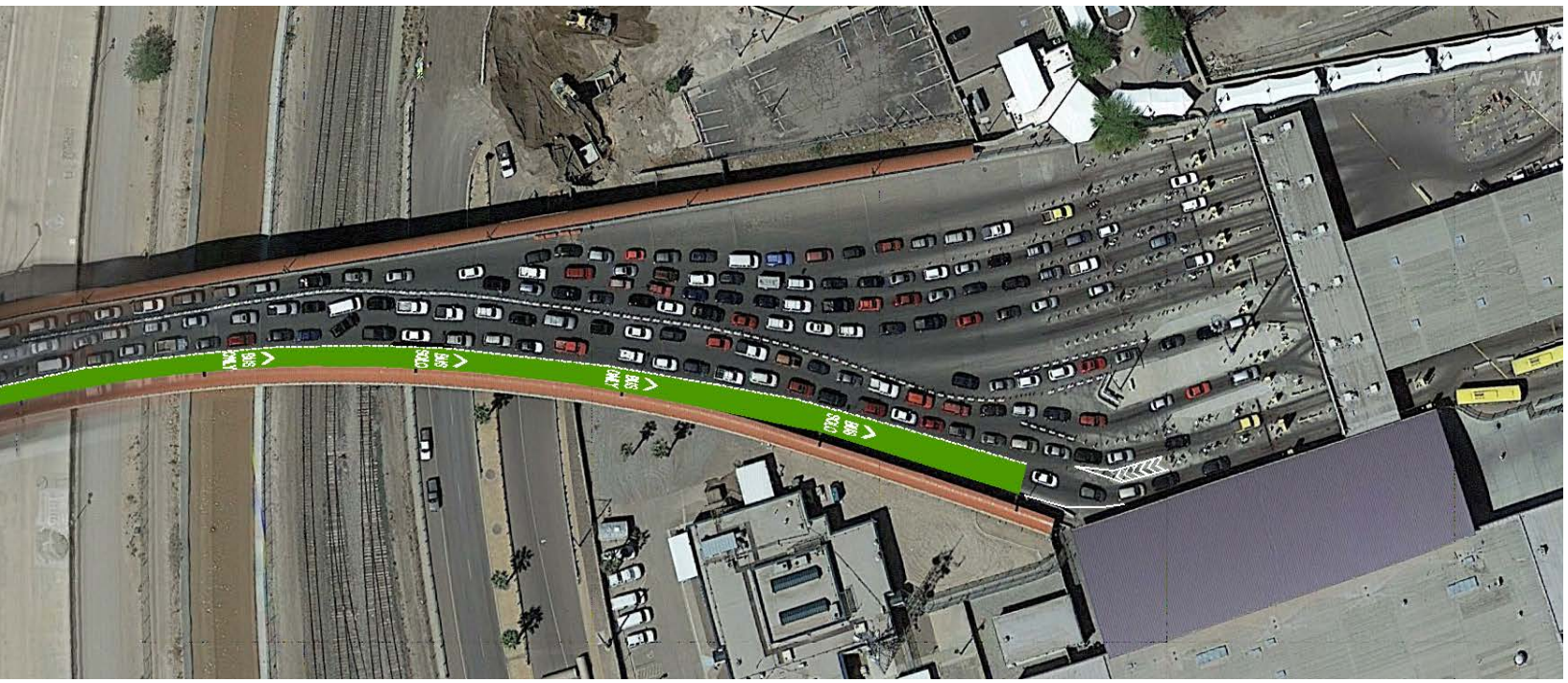

Figure 2. Analysis of a proposal for better infrastructure and operations – Development of Executive Project.