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THESIS

**HOW DO SMART BORDER TECHNOLOGIES ALTER
THE GEOPOLITICS OF THE BORDERLANDS AND
CONTRIBUTE TO STABILITY OR INSTABILITY IN THE
WESTERN HEMISPHERE?**

by

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December 2020

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OF THE BORDERLANDS AND CONTRIBUTE TO STABILITY OR
INSTABILITY IN THE WESTERN HEMISPHERE?**

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ABSTRACT

Providing border security has not always been a priority of nation-states in Latin America. As the wars of independence created legitimate armies, governments began using their forces for border protection to encapsulate a collective identity. The problem lies in Latin America's soft borders. Some countries unwillingly harbor the transportation of illicit drug and human traffickers, illegal logging and mineral extraction operations, poachers, and individuals willing to harm indigenous people to achieve their illegitimate objectives. Another concern is travelers fleeing failed states, as witnessed at the borders of Mexico-Guatemala, Colombia-Ecuador, and Venezuela. The 4.6 million people who have fled Venezuela have traversed into adjacent nations. This does not account for the 1.3 million migrants who have crossed illegally to bypass national entry points, in fear of rejection. A way to better manage border crossings is through smart border systems. This thesis evaluates whether smart borders alter the geopolitics of borderlands and how the most advanced use of border management influences stability or instability in the Western Hemisphere. This thesis uses an exploratory design to qualitatively evaluate evolving border environments. The data relied on for this research encompassed border crossing metrics, traffic management and mitigation, entry point vulnerabilities, the smart border technologies used, and the effectiveness of these technologies against border threats.

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LIST OF ACRONYMS AND ABBREVIATIONS

ACLU	American Civil Liberties Union
BSS	Border Surveillance System
BEST	Border Enforcement Security Taskforce
C-TPAT	Customs-Trade Partnership Against Terrorism
CBP	U.S. Customs and Border Protection
DHS	Department of Homeland Security
FAST	Free and Secure Trade
GDP	Gross Domestic Product
IBET	Integrated Border Enforcement Teams
LRMA	Land, Rail, Marine, and Air
NAFTA	North American Free Trade Agreement
SENTRI	Secure Electronic Network for Travelers Rapid Inspection
TBA	Tri-Border Area
USBP	U.S. Border Patrol

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I. INTRODUCTION

A. THESIS QUESTION

How do smart border technologies alter the geopolitics of the borderlands and contribute to stability or instability in the Western Hemisphere?

B. PROBLEM STATEMENT AND HYPOTHESIS

Establishing robust border security policies has not always been a priority of nation-states in Latin America. The earliest notion of territorial boundary management and protection began in the 19th century. As the wars of independence created legitimate armies, governments began using their forces for border protection to encapsulate a collective identity.¹ These actions granting political sovereignty to the people continued through the 20th into the 21st century. Portions of Latin America continue to focus on border security in response to migration control, which was not a priority in the past.

Current border instabilities in Central and South America are beginning to change due to host country actions in the region. The problem lies in Latin American soft border regions such as Mexico-Guatemala, Colombia-Ecuador, and Venezuela, which contribute to a situation of uncontrolled entry for entities willing to cause harm and others searching for basic human rights.² Border security policies have been described as a major obstacle for regional and hemispheric threats and the transferring of illicit goods; however, creating a secure boundary and maintaining its integrity is a challenge.³ The traffic pattern in certain regions can be the driving factor behind border crossings. Some countries unwillingly harbor the transportation of illicit drug traffickers, illegal logging and mineral extraction

¹ Edgardo A. Manero, "Strategic Representations, Territory and Border Areas: Latin America and Global Disorder," *Geopolitics* 12, no. 1 (2007): 22–3, https://www.tandfonline.com/doi/full/10.1080/14650040601031123?casa_token=XUBI2kciVyMAAAA%3AS8-v4pssaKcicjwhfIKsTXn8iQ7Svs6G3Hu8mhmiFsNXGkRaigYrDyT2ZlqBT6l55qrqL2LRPoL_Ctk.

² David Pion-Berlin, "Latin America's Growing Security Gap," *Journal of Democracy* 22, no. 1 (January 2011): 39–53, <https://www.muse.jhu.edu/article/412892>.

³ "Border Management," United Nations Security Council Counter-Terrorism Committee, accessed January 24, 2020, <https://www.un.org/sc/ctc/focus-areas/border-control/>.

operations, human traffickers, poachers, and individuals willing to harm indigenous people to achieve their illegitimate objectives.⁴ Another concern is travelers fleeing failed states, as witnessed at the borders of Mexico-Guatemala, Colombia-Ecuador, and Venezuela.⁵ The 4.6 million people who have fled Venezuela have traversed into nations like Colombia, Ecuador, and Peru.⁶ This vast number of refugees who were accepted into adjacent nation-states do not account for those 1.3 million who have crossed illegally to bypass national entry points in fear of rejection.⁷ Some responsibility lies with the host country. If Colombia is not aware of these refugees, they cannot provide them with basic human rights. To effectively monitor these borders for threats and humanitarian assistance, states must consider alternative methods of border control, including surveillance technologies as force multipliers to assist border agents in detecting borderland penetrations.

One way to manage crossings is through border control points. Control point areas determine if a crossing is licit or illicit, and permit only those considered eligible and non-threatening to enter the country. In a perfect scenario, all entities would travel through these checkpoints, allowing the receiving nation the ability to determine eligibility; however, that does not always occur. Border security vulnerabilities lie in regions that are not continuously monitored. Managing porous land, maritime, and air borders can be

⁴ “Murder of Brazilian indigenous leader a ‘worrying symptom’ of land invasion,” UN News, last modified July 29, 2019, <https://news.un.org/en/story/2019/07/1043401>; S. D. Chicas, K. Omine, B. Arevalo, J. B. Ford, K. Sugimura, “Deforestation Along the Maya Mountain Massif Belize-Guatemala Border,” *International Archives of the Photogrammetry, Remote Sensing & Spatial Information Sciences* 41 (2016), <https://www.int-arch-photogramm-remote-sens-spatial-inf-sci.net/XLI-B8/597/2016/isprs-archives-XLI-B8-597-2016.pdf>.

⁵ Michele Shedlin, Carlos Decena, Hugo Noboa, and Óscar Betancourt, “Sending-Country Violence and Receiving-Country Discrimination: Effects on the Health of Colombian Refugees in Ecuador,” *Journal of Immigrant and Minority Health* 16, no. 1 (February 2014): 119–24, <https://doi.org/10.1007/s10903-013-9777-9>; U.S.-Mexico Security Cooperation Taskforce, Center for U.S.-Mexican Studies U.C. San Diego, *U.S.-Mexico Security Cooperation 2018–2024*, (La Jolla, CA: University of California San Diego, 2018), https://usmex.ucsd.edu/_files/Whitepaper_Security_Taskforce_March_26_Covers.pdf; United Nations, *World Health Organization Region of Americas* (2018): 11, <https://www.who.int/migrants/publications/PAHO-report.pdf?ua=1>.

⁶ Dany Bahar and Meagan Dooley, “Venezuelan Refugee Crisis to Become the Largest and Most Underfunded in Modern History,” The Brookings Institution, December 9, 2019, <https://www.brookings.edu/blog/up-front/2019/12/09/venezuela-refugee-crisis-to-become-the-largest-and-most-underfunded-in-modern-history/>.

⁷ Adam Veitch, “Colombia cracks down on illegal migration from Venezuela,” Colombia Reports, June 11, 2019, <https://colombiareports.com/colombia-cracks-down-on-illegal-migration-from-venezuela/>.

challenging, but is necessary for stopping national and international threats.⁸ Latin America is a region known for its soft borders and easy access to neighboring countries.⁹

Although Argentina does not call the northern border with Bolivia, Paraguay, and Brazil a smart border, the author's evaluation of the technologies and policies deployed at these borders is similar to what the U.S. considers smart borders. For example, Argentina is currently using a smart border system (i.e., smart technologies without cross-border coordination) to protect its Bolivia-Paraguay borders from narcotrafficking, through the use of sensors, detection apparatuses, and delivery vehicles.¹⁰ These technologies could assist other additional Latin American countries with stopping national threats by determining where a crossing exists, and prompting security organizations to dispatch border agents to intercept threats.

Implementation of smart borders in Latin America has begun recently, and the impacts are on a global level, rather than simply hemispheric. To adopt smart borders throughout Latin America, nation-states need to understand where they currently exist, what they look like, where there is a need for them, and how they could be further implemented. With Argentina being the first country to use a unilateral smart border system

⁸ United Nations Security Council Counter-Terrorism Committee, "Border Management," accessed January 24, 2020, <https://www.un.org/sc/ctc/focus-areas/border-control/>.

⁹ United Nations, *International Narcotics Control Board Report 2017*, Report No. E/INCB/2017/1 (Vienna, Austria: United Nations office, January 2018): 78, https://www.incb.org/documents/Publications/AnnualReports/AR2017/Annual_Report/E_2017_AR_ebook.pdf; Ivan Briscoe, "Trouble on the borders: Latin America's new conflict zones," *Madrid: FRIDE*, (July 2008): 1–2, https://www.researchgate.net/profile/Ivan_Briscoe2/publication/265029389_Trouble_on_the_borders_Latin_America's_new_conflict_zones/links/56b45f0308ae636a540da06b.pdf; Gabriel Marcella, "The Transformation of Security in Latin America: a Cause for Common Action," *Journal of International Affairs* 66, no. 2 (March 2013): 70, <https://www.jstor.org/stable/24388286?seq=1>.

¹⁰ Eduardo Szklarz, "Argentina Launches First Smart Border Surveillance System in Latin America," *Diálogo Digital Military Magazine*, December 10, 2019, <https://dialogo-americas.com/articles/argentina-launches-first-smart-border-surveillance-system-in-latin-america/>.

in South America, 10 others are using or plan to use equipment and policies found on smart borders.¹¹

This thesis hypothesizes that existing smart borders do not contribute to stability in the Western Hemisphere, but can assist in the surveillance of sovereign territory boundaries. As more nation-states begin to implement smart borders for both monitoring border regions and streamlining processing and management of controlled border control points, this research can contribute to this field of study by determining what unilateral and binational programs complement these technologies which contribute to border awareness at international boundaries.

Although this thesis set out to determine if border technologies alter the geopolitics of the borderlands and contribute to stability or instability in the Western Hemisphere, there is no evidence that technology influences stability or instability in the border-regions of Argentina, Bolivia, Brazil, and Paraguay, the United States and Mexico, and the United States and Canada. The youth of the border security technologies at Argentina's northern and northwestern borders leaves unanswered questions about the effectiveness of Argentinian border deployments, which will only be answered after more time has elapsed. The U.S.-Mexico borderland is saturated with both border security technologies and border security policies, which demonstrates failure in migration and humanitarian assistance, but success in trade and commerce. Lastly, the U.S.-Canada case exhibits regional stability at a border focused on programs facilitating security and trade, however the area's strength seems to correspond with each nation-states similar living and economic conditions.

¹¹ John Otis, "Brazil leads the way on global commercial drone boom," PRI, January 6, 2013, <https://www.pri.org/stories/2013-01-06/brazil-leads-way-global-commercial-drone-boom>; Jason Koebler, "American Defense Companies Try to Break Israel's Grasp on Latin American Drone Market," U.S. News, July 15, 2013, <https://www.usnews.com/news/articles/2013/07/15/american-defense-companies-try-to-break-israels-grasp-on-latin-american-drone-market>; W. Alejandro Sánchez, "COHA Report: Drones in Latin America" (official memorandum, Washington, DC: Council on Hemispheric Affairs, 2014), http://www.coha.org/wp-content/uploads/2014/01/COHA_Sanchez_LATAM_Drones_Final_Jan122014.pdf.

C. LITERATURE REVIEW

1. Security Technologies at Smart Borders in the Western Hemisphere

Other than the use of physical walls, border deployments can take the shape of surveillance technologies. Two categories used for these border security technologies are vehicles and sensors. Vehicles consist of aerostats, towers, and drones.¹² Sensors include radar, imagery, cameras, doppler, illuminators, seismic indicators, electromagnetic and gravity detectors, rangefinders, and thermal imaging.¹³

Also, countries using border security technologies are separated into three categories: integrated surveillance, multi-layered sensors and single sensors. Integrated surveillance systems found in Argentina use a control center for monitoring.¹⁴ Multi-layered sensors utilized in Mexico, such as radar and drones, do not contain a central control point.¹⁵ Lastly, single sensor equipment is used in Brazil, Colombia, Mexico, Venezuela, Chile, Ecuador, and Peru.¹⁶ These systems are monitored individually to provide information on illegal crossings into each nation's sovereign territories.

The term "smart border" comes from the Smart Border Declaration between the U.S. and Canada in 2001, which allowed for enhanced border security practices between both nations.¹⁷ This announcement has become the backbone of border securities

¹² U.S. Department of Homeland Security, *Privacy Impact Assessment Update for the Border Surveillance Systems (BSS)*, Report No. DHS/CBP/PIA-022(a) (U.S. Department of Homeland Security, 2018), <https://www.dhs.gov/sites/default/files/publications/privacy-pia-cbp022-bss-september2018.pdf>.

¹³ U.S. Department of Homeland Security, *Privacy Impact Assessment Update for the Border Surveillance Systems (BSS)*.

¹⁴ Szklarz, "Argentina Launches First Smart Border Surveillance System in Latin America;" Bonnie Berkowitz, Shelly Tan and Kevin Uhrmacher, "Beyond the Wall: Dogs, Blimps and Other Things Used to Secure the Border," *The Washington Post*, February 8, 2019, <https://www.washingtonpost.com/graphics/2019/national/what-is-border-security/>.

¹⁵ Adam Isacson, Maureen Meyer, and Gabriela Morales, "Mexico's Other Border: Security, Migration, and the Humanitarian Crisis at the Line with Central America," *WOLA: Advocacy for Human Rights in the Americas*, June 2014, https://www.wola.org/sites/default/files/WOLA_The%20Other%20Border%20Publication.pdf.

¹⁶ Otis, "Brazil leads the way on global commercial drone boom;" Sánchez, "COHA Report: Drones in Latin America."

¹⁷ White House, *U.S. - Canada Smart Border/30 Point Action Plan Update*, (Washington, DC: White House, 2002), <https://georgewebush-whitehouse.archives.gov/news/releases/2002/12/20021206-1.html>.

throughout the western hemisphere. A modern example of smart borders, or border security surveillance technologies, is witnessed at the U.S.-Mexico border. U.S. government entities, the Department of Homeland Security (DHS) and U.S. Customs and Border Protection (CBP), manage a robust surveillance system to detect border crossings at the southern border.¹⁸ This Border Surveillance System (BSS) incorporates mobile and fixed technologies, and has the ability to gather evidence for law enforcement investigations. In 2019, CBP seized more migrants than any year in the last decade.¹⁹ Tucson Sector Division Chief, Raligh Leonard, has acknowledged that surveillance technologies have created an accurate and productive detection process than in the past.²⁰ These surveillance technologies are not only used in North America, but are beginning to emerge within Latin America.

Although some Latin American nations have components of a border surveillance system, the only system similar to the U.S. is that of Argentina. Argentina launched the first smart border system in Latin America on October 1, 2019, consisting of sensors, radars, vehicles, and ships.²¹ The integration of this Israeli system will provide surveillance and detection of criminal groups at the borders of Bolivia and Paraguay, who are responsible for 85 percent of incoming drugs.²² If the system proves successful, the spread of these integrated systems could be seen throughout Latin America. Hints of this can be witnessed through the use of UAV employment in Chile.²³ The demand for surveillance

¹⁸ U.S. Department of Homeland Security, *Privacy Impact Assessment Update for the Border Surveillance Systems (BSS)*.

¹⁹ John Gramlich and Luis Noe-Bustamante, "What's Happening at the U.S.-Mexico Border in 5 Charts," Pew Research Center, November 1, 2019, <https://www.pewresearch.org/fact-tank/2019/11/01/whats-happening-at-the-u-s-mexico-border-in-5-charts/>.

²⁰ Eric Blum, "Further Reflection- Surveillance technology boosts border security in Arizona," U.S. Customs and Border Protection, accessed February 18, 2020, <https://www.cbp.gov/frontline/frontline-june-az-technology>.

²¹ Szklarz, "Argentina Launches First Smart Border Surveillance System in Latin America."

²² Szklarz.

²³ John A. Cope, and Andrew Parks, "Strategic Perspectives- Frontier Security: The Case of Brazil," Institute for National Strategic Studies, May 15, 2014, <https://apps.dtic.mil/dtic/tr/fulltext/u2/1014327.pdf>; Sánchez, "COHA Report: Drones in Latin America."

technologies is foreseen to rise, to create improved border security systems and strengthened territorial border regions.

2. Literature on Stability and Instability in the Western Hemisphere

According to a recent literature review, one definition of stability is “particularly applied to the area of International Relations, stability is a property with a dynamic equilibrium and localized robustness, applied to a state of affairs.”²⁴ Focusing on historic and present instabilities can assist in determining what stability looks like in Latin America. Systemic violence in the region, particularly in Central America, plays a major role in deterring stability.²⁵ This violence, caused by failed governments unable to combat domestic threats, does not only affect these states, but resonates throughout the region. Additionally, ‘border-penetrating’ due to porosity has allowed for a mixture of illicit and licit traffic amongst neighboring states.²⁶ While interconnected neighboring states benefit from unrestricted flows of commerce and communications, national threats are taking advantage of these flows by blending into the licit flow of passage. Finally, while recognizing major factors which contribute to volatility, a determination can be made to focus on these issues that may lead to a more stable Western Hemisphere.

Instability in the northern triangle is feeding the fire at the Mexico-Guatemala border region. As citizens are driven out of El Salvador, Honduras, and Guatemala due to high crime and homicide rates and poor living situations, the U.S. immigration percentages from these countries have risen an average of 25% in an eight-year period, compared to Mexico’s -6%.²⁷ These numbers can oversaturate nations like Mexico, who may struggle

²⁴ Claudio D. Antonini, “Definition of Stability in International Relations,” *IFAC Proceedings Volumes* 32, no. 2 (July 1999): 6345, [https://doi.org/10.1016/S1474-6670\(17\)57083-4](https://doi.org/10.1016/S1474-6670(17)57083-4).

²⁵ Adrian Barbu, “War on Drugs in Latin America- A Failed War? Colombia - The Learned Lesson,” *Revista de Administratie Publica Si Politici Sociale* 12, no. 1 (June 1, 2014): 115, <http://search.proquest.com/docview/1641106095/>.

²⁶ David R. Mares, *Latin America and the Illusion of Peace*, 1st ed. (Boca Raton, FL: Routledge, Taylor and Francis, 2018) 43, <https://doi.org/10.4324/9781351224420>.

²⁷ D’vera Cohn, Jeffrey S. Passel and Ana Gonzalez-Barrera, “Rise in U.S. Immigrants From El Salvador, Guatemala and Honduras Outpaces Growth from Elsewhere,” Pew Research Center, December 7, 2017, <https://www.pewresearch.org/hispanic/2017/12/07/rise-in-u-s-immigrants-from-el-salvador-guatemala-and-honduras-outpaces-growth-from-elsewhere/>.

to provide enough resources for basic human rights. Furthermore, identifying the root cause of the Central American problem could assist in determining why this northern migration is occurring. The systemic reason for the poor living conditions points back to U.S. Criminal deportees who came from California in the 1990s, bringing a territorial gang mentality to Central America.²⁸ This vicious circle created thirty years ago has created a less-stable North America. A step towards future stability begins at a core component of governmental policy making.

Consequently, a stable Latin America begins with policies that recognize the long-term implications of a document based on border security. As governments impose policies, especially those of a bilateral and multilateral nature, all parties should consider alternatives that could deter loopholes, inequality, and neglect of those vested in the agreement. For example, a foreign policy implemented by Ecuador following the collapse of the Venezuelan government allowed for migrants, with the required biometrics, to cross their borders to transit into the next adjacent country.²⁹ This policy exemplifies multiple nations understanding the implications of migrants travelling through foreign territories, rather than around national borders, in search of a stable livelihood. Furthermore, U.S. intervention in Latin America's security is evident in a 1990s policy that has been on hiatus, but may reorganize. A U.S. driven policy named "3+1 Group on Tri-Border Area (TBA) Security," comprised of Argentina, Brazil, and Paraguay, focused on strengthening security from threats in the region, specifically terrorism and transnational crime.³⁰ The reinitiation of this policy-making group could not come at a better time, due to Argentina's push for border security technology with Bolivia and Paraguay.³¹ As Latin America continues to

²⁸ David James Cantor, "As Deadly as Armed Conflict? Gang Violence and Forced Displacement in the Northern Triangle of Central America," *Agenda Internacional* 23, no. 34 (September 1, 2016): 84, <https://doi.org/10.18800/agenda.201601.003>.

²⁹ Bruno Dupeyron, "Perspectives on Mercosur Borders and Border Spaces: Implications for Border Theories," *Journal of Borderlands Studies* 24, no. 3 (January 17, 2020): 12, <https://doi.org/10.1080/08865655.2009.9695739>.

³⁰ Sarah Neilson, "Fighting Terror in the Tri-Border Area," The Wilson Center, December 9, 2019, <https://www.wilsoncenter.org/article/fighting-terror-the-tri-border-area>.

³¹ Eduardo Szklarz, "Argentina Launches First Smart Border Surveillance System in Latin America."

address crime and immigration problems, U.S. cooperation can provide the tools necessary to address these issues.

D. RESEARCH DESIGN

This thesis uses an exploratory design to qualitatively evaluate evolving environments, and is accomplished through three objectives: (1) identifying each border region's idiosyncrasies, such as border cities, geography, politics, cultures, border traffic management, geopolitics, and understanding the genesis of these border spaces; (2) explaining how and what kinds of exchanges occur within these environments; and (3) examining the types of threats and technological responses the nation-states have implemented. To assist in performing step one, the method utilized is a geopolitical analysis using digital technologies to study the interplay between population conflict and territory.

This thesis examines three specific cases which represent the most advanced use of border management, technological innovation, and border deployments in the America's: the smart border between the United States and Mexico; the smart border between the United States and Canada; and the unilateral smart border connecting Argentina, Bolivia, Brazil, and Paraguay. The reasoning behind the selection of the U.S.-Mexico and U.S.-Canada borders is due to them being the only true smart borders in the Western Hemisphere. While Argentina's borders with Bolivia, Brazil, and Paraguay do not fulfill the elements of smart borders, the region is a unilateral smart border and is the South American border most similar to traditional smart borders. Additionally, these regions represent similarities to other borders throughout the hemisphere due to a wide range of variables they represent at each border, including traffic capacities and management, economic differences, varying population, concentration of forces at border territories, and levels of employed border security surveillance technologies. Canada was primarily selected due to its long-standing peace with the United States, and because of economic and political similarities Canada shares with its southern neighbor. These border regions exhibit distinct individualities that separate themselves from each other. The differences found in these borderlands and border-cities often show cultural and economic ties that are

not found in regions outside of border areas. Analysis identifies these regions' cultural identities, politics, geography, border management, the origin behind the border, and geopolitics, and creates an understanding as to why these border regions exist and what dynamics have sparked the insertion of smart border and surveillance technologies.³² Subsequently, these regional factors become the framework allowing for deeper understanding into the bilateral and multilateral arrangements at these international borders.

Furthermore, to examine the effects of border security technologies on stability the analysis begins with an understanding of the border threats in the region. These threats range from micro level issues at the regional front such as smuggling contraband, to macro problems which can jeopardize a nation's homeland security, such as terrorists determined to create cells within a host nation. The first line of defense in combating the different threat levels is a national entry control point. Understanding the capabilities and limitations of each entry point assists in determining if a control point's attributes are capable of identifying and prosecuting those with illegal or hostile intent. Border security technologies are used at these international ports of entry to help streamline the entrance process, but these technologies are also being used to decrease illegal border crossings in remote borderland regions.

A framework can be established to determine what a system of surveillance equipment looks like. Furthermore, analyzing other countries within Central and South America with border technologies that are not encompassed within a system can explain which nation-states might implement the next smart border systems. Amongst the countries using smart border surveillance equipment, it is important to understand how these technologies are being used to meet a specific national objective.

The types of data relied on for this research encompassed the number of crossing points per border, the number of crossings (vehicular, rail, and pedestrian) per annum, traffic management and ballooning mitigation at each port of entry, potential vulnerabilities

³² James Gerber, "Governed and Ungoverned Integration in the Mexico-US Border Region," *Regions and Cohesion* 10, no. 2 (June 2020): 29, <https://doi.org/10.3167/reco.2020.100203>.

at border control points, type and extent of smart border technologies in use at each crossing point, and the effectiveness of these technologies against border threats. Qualitative methodology was used to interpret and analyze data due to the unquantifiable nature of the thesis question. The data was then cross-examined with border threats and stability (or instability) in the region to identify relationships with border security surveillance technology. Analyzing the subsequent data eventually created a narrative of each borderland, which uncovered the benefits and disadvantages of smart border technology use for achieving a national political objective.

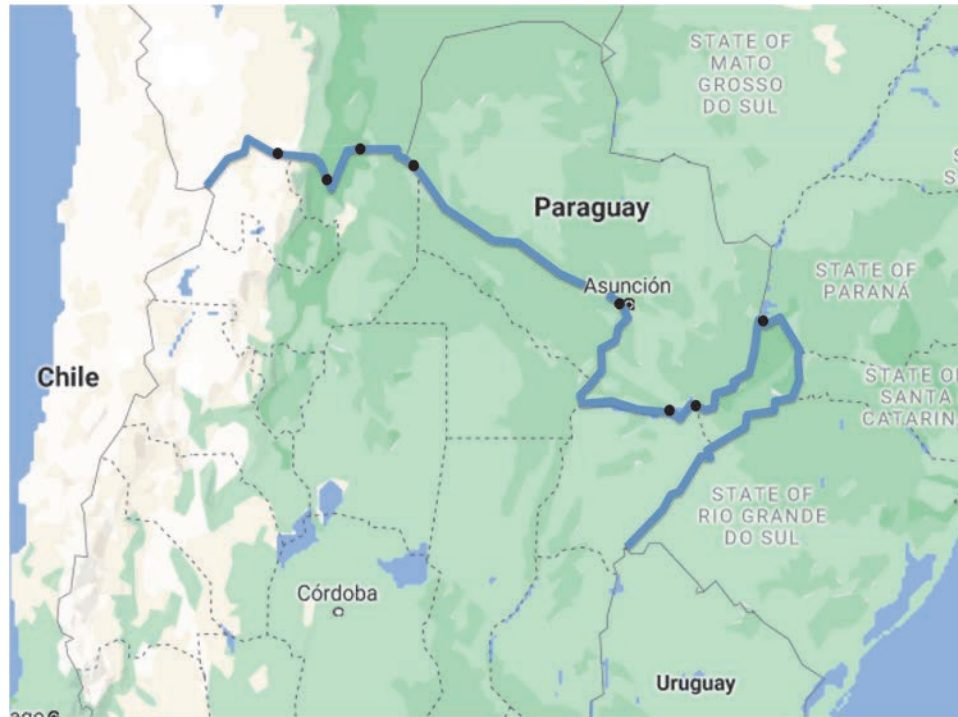
1. Limitations

This geopolitical analysis of the smart borders between the United States and Mexico; the smart border between the United States and Canada; and the smart border connecting Argentina, Bolivia, Brazil, and Paraguay only provides a micro lens of Western Hemisphere borders. While it focuses on the only known smart borders in the hemisphere, 10 other nation-states will soon meet these criteria creating opportunities for follow-on macro research. Furthermore, as technology continues to advance, more capable and intrusive border surveillance technologies will continue to become implemented within these smart borders and will eventually result in the need for future analysis and possible linkages between new technologies and stability or instability.

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II. ARGENTINE CASE STUDY

To understand the Argentina-Bolivia-Brazil-Paraguay border region and why the Argentine National Gendarmerie is utilizing border security surveillance technology at these unions, the following literature addresses the origin behind the deployment (there is no evidence that Argentina's smart border is being used at the Chile and Uruguay borderlands, so these geopolitical boundaries will not be discussed). The geography of this area plays a significant role in determining the number of border-cities in the region. As traffic from adjacent nation-states push into Argentina, eight main borderland cities act as ports of entry for legitimate crossings. In addition to legal crossings, drug traffickers continue to find methods of breaching these entry points, leading Argentina to install border security surveillance technology. Benefits of a smart border assist the Argentine National Gendarmerie in the prevention of illegal border crossings. Although the region's smart border at the northern border and the TBA (Figure 1) is newly implemented, the advance in surveillance technology is a force multiplier for Argentina to combat trafficking and terrorism.



Map of Northern Argentina with Bolivia, Brazil, and Paraguay borders, or Tri-Border Region, and the analyzed border control points.

Figure 1. Northern Argentina Border Region.³³

A. BOLIVIA BORDER

The Origin of the Argentina-Bolivia border stems from multiple exchanges of land, followed by two wars that shaped the border region. The 17th century's Incan control of the Argentina-Bolivia border was interrupted by colonization by the Spanish Crown. By the early 19th century the Argentinian territory, known then as the United Provinces of Rio De La Plata, became independent from Spain, and became the state of Bolivia in 1827.³⁴ Argentina finally gained statehood in the mid 19th century, although the Bolivian border had not yet solidified. Two final wars helped shape the border region, leaving a 480-mile political boundary separating the two countries. First, the War of the Pacific, won by Chile

³³ Source: Northern Argentina map, Google Maps, accessed April 18, 2020, <https://www.google.com/maps/@-26.3976313,-60.5015338,5.82z>.

³⁴ "The History of South America: Every Year," February 16, 2017, EmperorTigerstar, video, 1:26, <https://www.youtube.com/watch?v=UULp33MNNNE>.

against Bolivia and Peru, formed the western extent of the border.³⁵ Second, the Chaco War, won by Paraguay, completed the border region on the eastern border.³⁶ Since the signing of the Chaco War treaty in 1935, the border has remained identical.

Geography and geopolitical features at the borderlands have contributed to several settlements for both Argentina and Bolivia. There are only three neighboring cities constrained by geography at the 480-mile Argentina-Bolivia border, namely Villazon-La Quiaca, Bermejo-Aguas Blancas, and Yacuíba-Salvador Mazza.³⁷ These geopolitical cities are the outlets to each nation in the border territory. Crossing at any point nearby or adjacent to these three entry-points is deemed illegal by both nations. Villazon-La Quiaca, the westernmost entry-point of Argentina and Bolivia, lies in the highlands adjacent to the Andes Mountains. The last two border towns, Bermejo-Aguas Blancas and Yacuíba-Salvador Mazza, are located in eastern subtropical regions of Argentina-Bolivia, avoiding the harsh equatorial climate near the Argentina-Bolivia-Paraguay junction. Argentinian border agents provide screening in an environment incorporating identities from either side of the border.

1. Cultural and Social Aspects

Although Argentina and Bolivia are neighboring nation-states, differences in national and cultural identity affect almost half of Bolivian migrants living in Argentina.³⁸ Some variances include historic culture and the education system. Ethnic group differences are seen by glancing at the cultures within the populace. Argentina's ethnic group

³⁵ V. Kiernan, "Foreign Interests in the War of the Pacific," *Hispanic American Historical Review* 35, no. 1 (February 1, 1955): 14–36. <https://doi.org/10.2307/2509249>.

³⁶ Bruce W. Farcau, *The Chaco War: Bolivia and Paraguay, 1932–1935*, Westport, Conn: Praeger, 1996, <https://doi.org/10.1002/9781444338232.wbeow101>.

³⁷ José Edgardo Dipierri, Emma Laura Alfaro Gomez, Alvaro Rodríguez-Larralde, and Virginia Ramallo, "Isonymic Relations in the Bolivia-Argentina Border Region," *Human Biology* 88, no. 3 (Summer, 2016): 192.

³⁸ "South-South Remittance Flows from Argentina to Bolivia: An Unexplored Remittance Corridor," States News Service, May 9, 2014, <https://publications.iom.int/books/mrs-ndeg49-south-south-remittance-corridor-between-argentina-and-bolivia>.

percentages are 97 European and mestizo, 2.5 Amerindian, and 0.5 African.³⁹ Bolivian ethnic groups, by percentage, are 68 mestizo, 20 indigenous, 5 Caucasian, with the remaining 7 are either African, indigenous cholo/chola, or unspecified.⁴⁰ Although the majority of both countries are of European descent, Bolivia's indigenous heritage is much stronger than that within its southern neighbor. Argentina and Bolivia's demographics also demonstrate a wide margin of variances, including immigration, wage imbalance and education. Due to Argentina's economic success (GDP ranked second in South America behind Brazil) immigrants have made up five percent of the population since 2015, with 8 in 10 having arrived from neighboring countries.⁴¹ Additionally, Bolivia's demographics include the highest income inequality in Latin America, and institutional struggles with public education, including low elementary school completion rates in rural areas.⁴² It is clear why Bolivians migrate to Argentina. The chances for stability and wealth are far greater for Bolivians who travel to Argentina than for those who remain in their home country.

Indigenous groups, who have historically crossed these borderlands in search of economic stability, constitute a separate type of border traffic from Bolivia to Argentina. Studies show that seasonal migration from Bolivia's Andean region to Argentina has occurred for generations. These migrating peoples of Bolivia work as laborers in Argentina and view migrations as life experiences accompanied by discrimination from Argentinians.⁴³ These seasonal migrations affect the western portion of the Argentina-Bolivia border, which is rarely monitored by the Argentine National Gendarmerie due to harsh terrain and inclement weather. Additionally, Guaraní people, also viewed as floating populations, see the central and eastern Argentina-Bolivia border as passable regardless of

³⁹ "South America: Argentina," Central Intelligence Agency, March 3, 2020, <https://www.cia.gov/library/publications/resources/the-world-factbook/geos/ar.html>.

⁴⁰ "South America: Bolivia," Central Intelligence Agency, February 28, 2020, <https://www.cia.gov/library/publications/the-world-factbook/geos/bl.html>.

⁴¹ Central Intelligence Agency, "South America: Argentina."

⁴² Central Intelligence Agency, "South America: Bolivia."

⁴³ David Preston, "Identity and Migration: Tarijeños and the Argentina experience," *Globalization and Mobility of Capital and Labour in Rural Latin America* (2002): 35–40, <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.9.200&rep=rep1&type=pdf#page=35>.

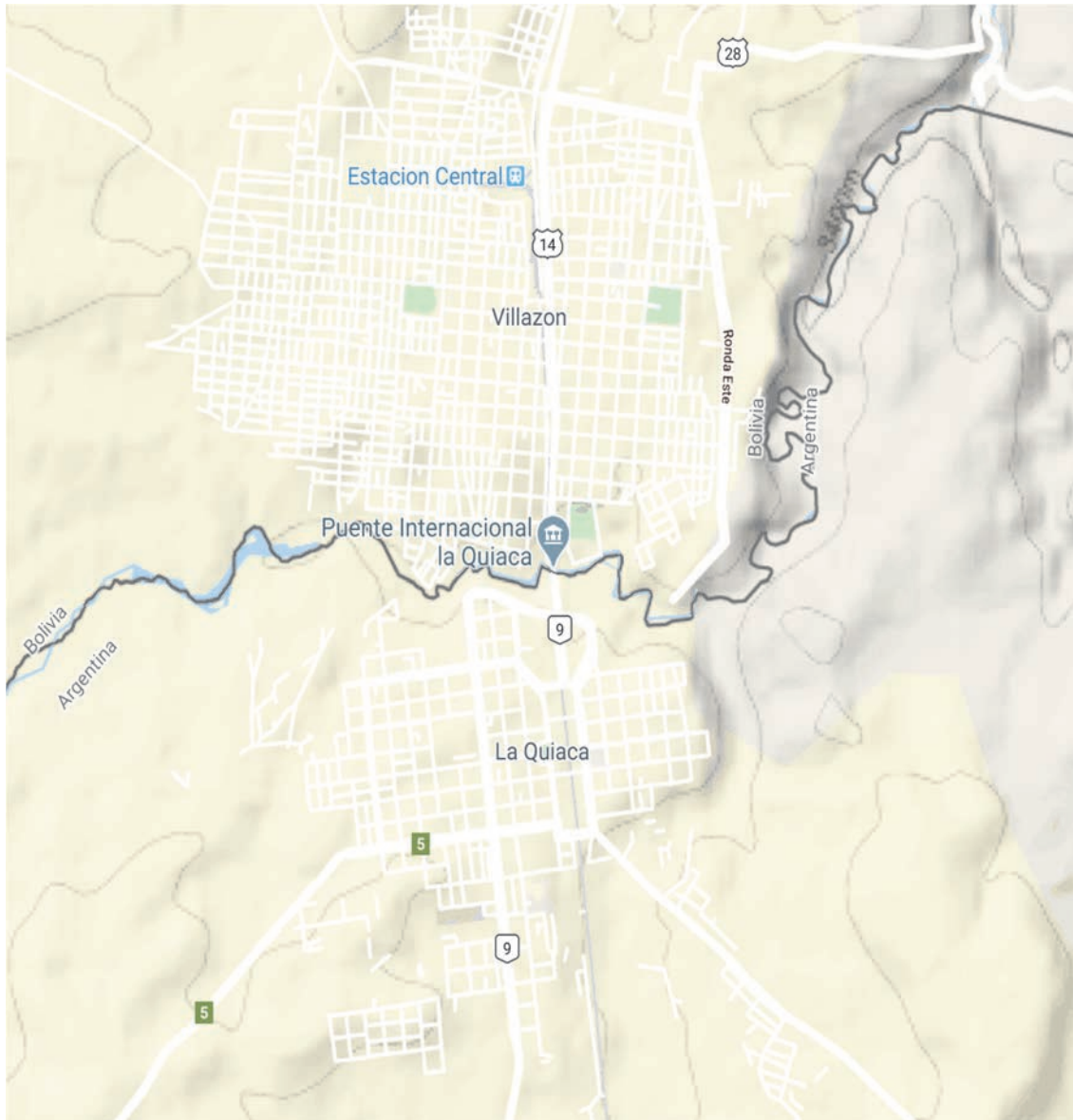
political boundary. Those living in Bolivia call Argentina “the place where there is work.”⁴⁴ Chesterton elaborates with Guaraní in Argentina calling Bolivia ‘the place of family.’ This identity contains strong cultural ties that disregard political boundaries, leading to a civil quandary for the Argentine National Gendarmerie who are sworn to protect their homeland by screening all traffic coming from Bolivia.

2. Entry Points

The western-most control-point at the intersection of Villazon and La Quiaca contains the most diverse method of separating border traffic, while allowing for a relatively easy method of illegal crossing. Figure 2 illustrates the traffic separation scheme at the Villazon-La Quiaca border, which is capable of handling/processing/monitoring heavy throughput when necessary. The border crossing separates traffic into three categories; public transportation, personal vehicles, and foot traffic. These traffic divides mitigate ballooning at specific entry points through adjustments in lane access. However, a vulnerability at the Villazon-La Quiaca border crossing is the Río De La Quiaca River. Bolivians and Argentinians are able to cross the dry riverbed with ease, demonstrating the permeability at the Villazon-La Quiaca borderlands.⁴⁵ While rainy seasons may lessen the number of illegal crossings due to higher water levels, those willing to chance a dangerous crossing will always persist.

⁴⁴ Bridget Maria Chesterton, *The Chaco War: Environment, Ethnicity, and Nationalism*, (New York: Bloomsbury Publishing, 2016), 125–6, 10.5040/9781474248907.

⁴⁵ “Argentina: Cross-Border Trafficking,” December 22, 2016, Aljazeera, Video, 4:27, <https://www.aljazeera.com/programmes/latin-america-investigates/2016/12/argentina-cross-border-trafficking-161220093349365.html>.



The westernmost Argentina-Bolivia border crossing contains a single-entry point at the intersection of Highway 9 and 14, and crosses the Río De La Quiaca River.

Figure 2. Villazon-La Quiaca Border Map.⁴⁶

Figures 3 and 4 display different mediums used to access the adjacent country at the Bermejo-Aguas Blancas and Yacuiba -Salvador Mazza borders, while incorporating a specific cultural identity that directly affects these borderlands. The border cities of

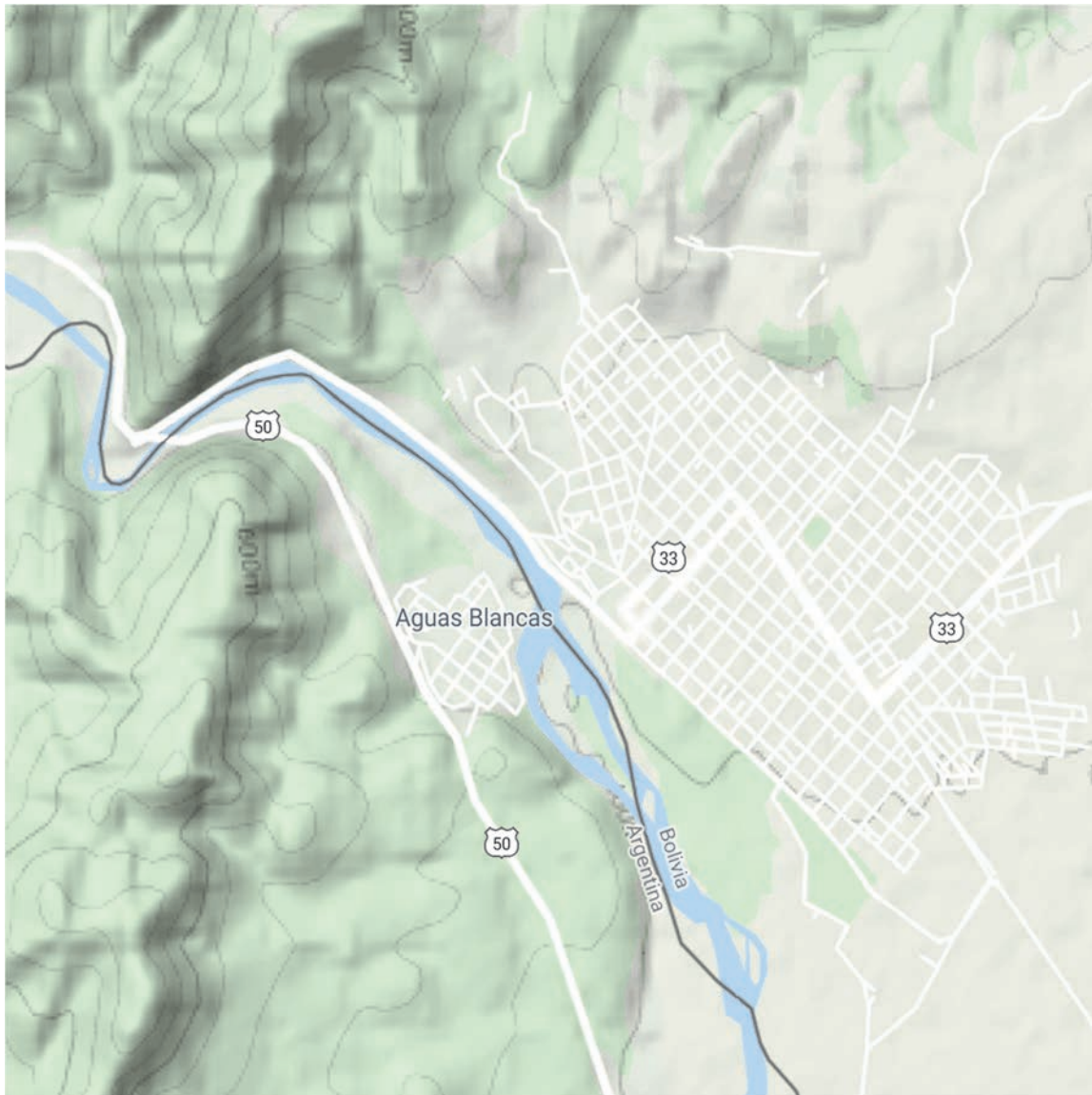
⁴⁶ Source: Villazon-La Quiaca border map, Google Maps, accessed May 17, 2020, <https://www.google.com/maps/@-22.0985493,-65.6103908,13.97z/data=!5m1!1e4>.

Bermejo-Aguas Blancas and Yacuiba-Salvador Mazza separate vehicles and people crossing the border. At the Bermejo-Aguas Blancas border, pedestrians choose between a two-lane bridge or a boat to cross the Río Bermejo river, while the Yacuiba-Salvador Mazza crossing is divided by railroad and a two-lane road for vehicles. Both entry points provide alternate ways of entering and exiting the country if one crossing method is oversaturated, although both are limited to only two open access points by government enforcement. Furthermore, a cultural identity, seen at both Bermejo-Aguas Blancas and Yacuiba-Salvador Mazza border regions, is the Guaraní People. The Bermejo, Bolivia border region is home to a Guaraní village with over 200 indigenous, while the neighboring city of Aguas Blancas, Argentina houses two Guaraní villages with approximately 400 residents.⁴⁷ On a larger scale, the city of Yacuiba, Bolivia is the home to over 500 Guaraní's, while Salvador Mazza, Argentina contains villages housing over 3,000 Guaraní people.⁴⁸ The Guaraní people do not see the border as an impenetrable boundary, but rather a political boundary separating family in Bolivia from household income in Argentina.⁴⁹ Indigenous peoples are not the only groups willing to cross the borderlands into Argentina. Others seeking quick monetary rewards through smuggling often cross with illegal intents.

⁴⁷ Levi M. Pereira, Rosa Colman and Flávio V. Machado, "2016 Guaraní Continental Map Project Technical File," Guaraní Digital Weather, accessed on February 18, 2020, <https://guarani.map.as/#/>.

⁴⁸ Pereira, Colman and Machado, "2016 Guaraní Continental Map Project Technical File."

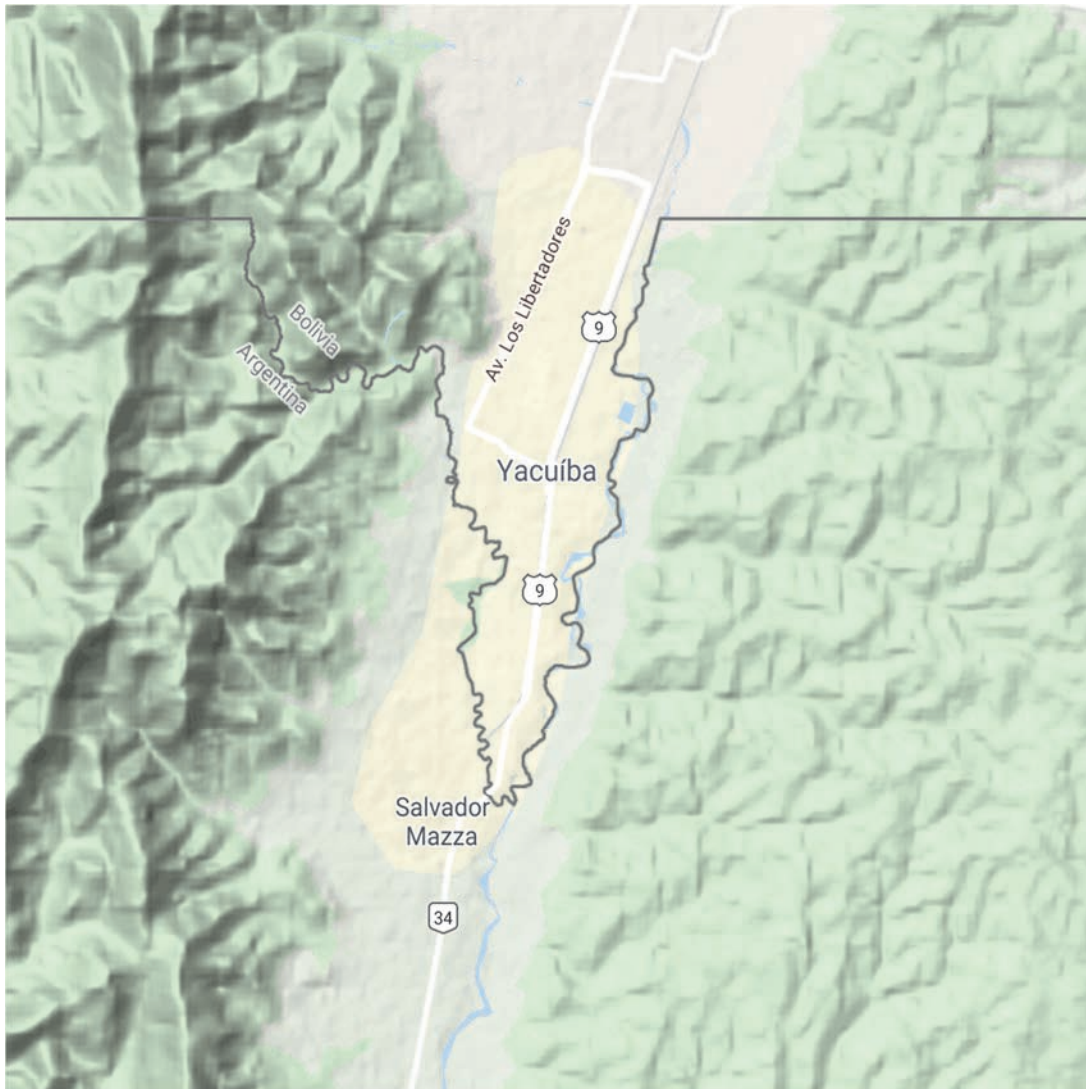
⁴⁹ Chesterton, *The Chaco War: Environment, Ethnicity, and Nationalism*.



The entry control point includes two methods of crossing, specifically the Aguas Blancas International Bridge and a ferry that crosses the Río Bermejo River.

Figure 3. Bermejo-Aguas Blancas Border Map.⁵⁰

⁵⁰ Source: Bermejo-Aguas Blancas border map, Google Maps, accessed May 17, 2020, <https://www.google.com/maps/@-22.7363385,-64.3600025,13.84z/data=!5m1!1e4>.



The single-entry control point is the third-and-final port of entry at the Argentina-Bolivia border, and the easternmost border crossing in the province of Salta, Argentina.

Figure 4. Yacuiba-Salvador Mazza Border Map.⁵¹

A dilemma at Argentina's northern border is traffickers coming from Bolivia and moving towards urbanized areas near Buenos Aires. Drug trafficking is a 'blip' on Argentina's radar that continually "pesters" the regime in Buenos Aires. Argentine Secretary of Security Eugenio Burzaco recently stated that 85 percent of drugs, primarily

⁵¹ Source: Yacuiba-Salvador Mazza border map, Google Maps, accessed May 17, 2020, <https://www.google.com/maps/@-22.0459499,-63.7332638,12.47z/data=!5m1!1e4>.

marijuana and cocaine, cross illegally through the northern border.⁵² The Secretary is not alluding to a recent problem with Bolivia, but one of historical precedence. These drug smuggling problems at the northern Argentina border date back to the mid-twentieth century. Bolivia's smuggling corridors supplied cocaine to drug-using communities in Argentina beginning in 1950.⁵³ By the late 1990s, one-third of the world's coca production came from the Bolivian regions.⁵⁴ The numbers of Bolivian production have dwindled since the rise of Colombia's coca market, but the coca-growing regions east of La Paz are still producing the same cocaine that was sought after in the 20th century.

B. THE TRIPLE FRONTIER

Three major events in the 19th and 20th centuries, the first of which was the Ragamuffin War, shaped the Argentina, Brazil, and Paraguay borderlands shown in Figure 5, known as South America's TBA.⁵⁵ The result of conflict between the former state of Rio Grande do Sul and Brazil was the 1840 addition of Brazilian lands extending along eastern Argentina and ending at Uruguay.⁵⁶ The second event to shape the Southern Cone was the War of the Triple Alliance, or Paraguayan War. The outcome was a 40 percent loss of Paraguay's land in 1870, giving Argentina its north-east 'finger shape' that jets past Paraguay and Brazil, ending at the Triple Frontier.⁵⁷ Paraguay's final geographic structure occurred at the conclusion of the Chaco War in 1935, resulting in the forfeiture

⁵² Szklarz, "Argentina Launches First Smart Border Surveillance System in Latin America."

⁵³ Paul Gootenberg, "The 'Pre-Colombian' Era of Drug Trafficking in the Americas: Cocaine, 1945–1965," *The Americas* 64, no. 2 (October 1, 2007): Section- Argentina: Cocaine Mafias, <https://doi.org/10.1353/tam.2007.0148>.

⁵⁴ Madeline Barbara Léons, and Harry Sanabria, "Coca and cocaine in Bolivia: Reality and policy illusion," *Coca, Cocaine, and the Bolivian Reality* (1997): 2–3.

⁵⁵ Fernando Rabossi, "Bridging Three Nations: The triple Border Between Paraguay, Argentina, and Brazil is Both a Cultural Melting Pot and a Regional Hotspot for Illicit Trade. What Does its History Reveal?" *NACLA Report on the Americas* 51, no. 1 (March 2019): 66, https://www.tandfonline.com/doi/full/10.1080/10714839.2019.1593693?casa_token=xZgxOr0PdPIAAAAA:GmTYEupXodHryfv-ZlOFma6DpdNlkyx7CpeXlDOodk5NXlhMeHq9JMxEXrphEpqzVNejNNiuBUom0E.

⁵⁶ Catherine Davies, Brewster, Claire, and Owen, Hilary. *South American Independence: Gender, Politics, Text* (Liverpool: Liverpool University Press, 2006), 210–4, <https://www.jstor.org/stable/j.ctt5vjgjr>.

⁵⁷ Leslie Bethell, "The Paraguayan War (1864-1870)," *ISA Research Papers* 46 (1996): 1–9, [https://sas-space.sas.ac.uk/3585/1/B28_-_The_Paraguayan_War_\(1864-1870\).pdf](https://sas-space.sas.ac.uk/3585/1/B28_-_The_Paraguayan_War_(1864-1870).pdf).

of Bolivia's Gran Chaco to Paraguay.⁵⁸ In sum, Argentina's 2,356-mile political border with Brazil and Paraguay created South America's Triple Frontier.⁵⁹



The region, also known as the Triple Frontier, is a U.S. top priority due to its links to terrorism threats in Latin America.

Figure 5. Tri-Border Region of South America.⁶⁰

Considerable distance separates the geopolitical features in the Triple Frontier. With over two-thousand miles of border, large cities in Argentina, Brazil, and Paraguay only meet twice in the form of adjacent border cities, specifically: Encarnacion, Paraguay, and Posadas, Argentina, and Ciudad del Este, Paraguay, Foz do Iguaçu, Brazil, and Puerto Iguazu, Argentina. The reason behind the small number of border cities lies in the region's

⁵⁸ Farcau, *The Chaco War: Bolivia and Paraguay*, 1932–1935.

⁵⁹ Central Intelligence Agency, "South America: Argentina."

⁶⁰ Source: Mark P. Sullivan and June S. Beittel, *Latin America: Terrorism Issues*, CRS Report No. RS21049 (Washington, DC: Congressional Research Service, 2016), 22, <https://fas.org/sgp/crs/terror/RS21049.pdf>; Rabossi, "Bridging Three Nations: The triple Border Between Paraguay, Argentina, and Brazil is Both a Cultural Melting Pot and a Regional Hotspot for Illicit Trade. What Does its History Reveal?"; Ana R. Sverdlick, "Terrorists and Organized Crime Entrepreneurs in the 'Triple Frontier' Among Argentina, Brazil, and Paraguay," *Trends in Organized Crime* 9, no. 2 (December 2005): 86–7, <https://doi.org/10.1007/s12117-005-1028-6>.

demographics. Paraguay's major border cities are solely in the east due to impacts of climate and survivability. Imagine the Paraguay River, which splits the nation from north to south, as Paraguay's marker for climate change. The western Chaco region is desolate and unsustainable, and the eastern Paraneña contains a fertile moderate climate including two rivers at the Argentina border: the Paraguay and Paraná.⁶¹ The latter is inhabited by almost 98 percent of the Paraguayan population.⁶² This illustrates why three large border cities, relative to Paraguay's population, namely Asunción, Encarnación, and Ciudad del Este, are located near the TBA in the east.

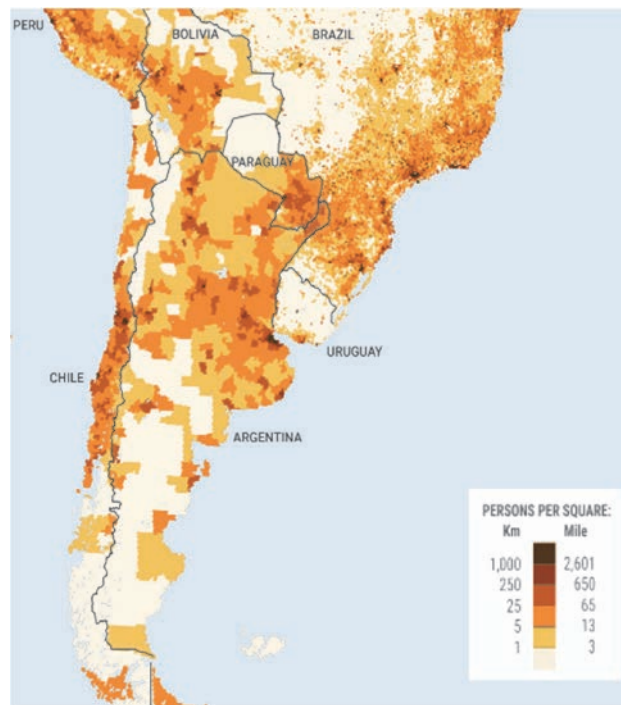


Figure 6. 2015 Population Density Map of the Southern Cone.⁶³

⁶¹ "Parana River Basin," EU Watch: Water and Global Change, accessed on April 21, 2020, <http://www.waterandclimatechange.eu/river-basin/parana>.

⁶² "Country Profile: Paraguay," Library of Congress: Federal Research Division, October 2005, 6–7, <https://www.loc.gov/rr/frd/cs/profiles/Paraguay-new.pdf>.

⁶³ Source: "South America's Population: Clinging to the Coasts," *Geopolitical Futures*, July 28, 2017, <https://geopoliticalfutures.com/south-americas-population-clinging-coasts/>; Original image was cropped to focus on the Southern Cone region and the compass was superimposed to the bottom-right from the section removed.

There are certain parallels between Argentine and Paraguayan borderland populations in relation to extreme climates, resulting in urban areas located in tropical regions without dry seasons, illustrating the reasoning for geopolitical settlements in the western Tri-Border corridor. Argentina's northern populations along the Paraguayan border demonstrate similar characteristics to their neighbor in regards to climate. Argentina's northern provinces of Formosa, Chaco, Corrientes, and Misiones can be separated into two climates: tropical with a dry season and tropical without a dry season.⁶⁴ While the majority of the Formosa and Chaco provinces are categorized as tropical with a dry season, Corrientes and Misiones provinces have an absence of dry weather. When identifying urban areas and population density, the densest populations are found in the regions without an extensive dry season, as seen in Figure 6. For instance, eastern regions of the Formosa and Chaco provinces, with the relatively moderate climate, are home to both provinces' capital cities: Formosa and Resistencia.⁶⁵ Similarly, Paraguay's two largest cities by population equaling nearly 800 thousand residents, which include the capital city Asunción and Ciudad del Este, lie in the humid southern regions of the Chaco and Alto Paraná, seen in Figure 7. The northern "Dry Chaco" is sparsely populated due to harsh environmental conditions, including minimal rainfall. These moderate climate locations contribute to the makeup of the outermost TBA in South America.

⁶⁴ Norberto R. Coppari et al., "Argentine Republic," IAEA: Country Nuclear Power Profiles, 2012, 1.1.2 Geography and Climate, https://www-pub.iaea.org/MTCD/Publications/PDF/CNPP2012_CD/countryprofiles/Argentina/Argentina.htm.

⁶⁵ "Administrative Map of Argentina," One World- Nations Online, accessed on April 22, 2020, <https://www.nationsonline.org/oneworld/map/argentina-administrative-map.htm>.

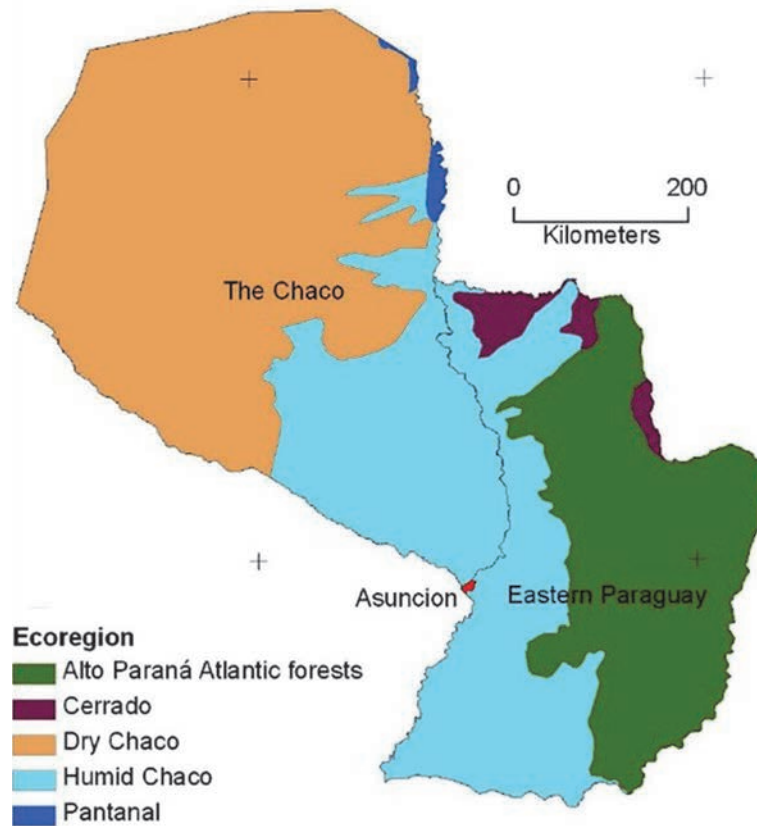


Figure 7. The Five Ecoregions of Paraguay.⁶⁶

Brazil, the final nation-state of the Triple Frontier, occupies the TBA with another means of population distribution and is at the forefront of the national security quandary in the Western Hemisphere. Figure 6 illustrates that the majority of Brazil's populations are coastal, with their southern states' urbanized areas dispersed along the Atlantic coastline. Only three cities are within vicinity of Argentine borderlands: (north to south) Foz do Iguaçu, Dionísio Cerqueira, and São Borja. The largest of the three being Foz do Iguaçu, with over 250 thousand residents, lies at the intersection of the Iguazu and Paraná rivers. This river junction separates Brazil's Foz do Iguaçu from Ciudad del Este, Paraguay and Puerto Iguazú, Argentina, and has become a recent South American national security "hot spot" for nation-states in the Western Hemisphere. Washington has placed the region at the

⁶⁶ Source: David Koch, "Landscape Epidemiology of Hantavirus in the Atlantic Forest of Paraguay," Researchgate, accessed July 3, 2020, https://www.researchgate.net/publication/48654158_Landscape_epidemiology_of_hantavirus_in_the_Atlantic_Forest_of_Paraguay.

top of its list for terrorist threats in Latin America, and scholars have found evidence of terrorist factions blending with organized crime organizations for network support and economic sustenance.⁶⁷ An expansion on border threats in the Triple Frontier region will continue later in the chapter, but was worth noting while identifying the largest Brazilian city on the Argentina border which contributes to one-third of the region's successes and failures.

1. Cultural and Social Aspects

The Triple Frontier embraces a rich cultural heritage that rallies around a symbol of peace between Paraguay and Brazil, and each of the three border-cities, namely Ciudad del Este, Foz do Iguaçu, and Puerto Iguazú, demonstrate social similarities with regards to immigrants. A cultural link between the cities of Ciudad del Este, Paraguay and Foz do Iguaçu, Brazil is the "Friendship Bridge" which spans across the Paraná River. Completed in March 1965, the "Friendship Bridge" supports between 40 to 60 thousand people crossing per day.⁶⁸ The irony of the "Friendship Bridge" has been witnessed through recent diplomatic maneuvers and illicit transportation of goods amongst the two neighbors. A recent cleavage formed between both nation-states when Brazilian trade deficits, destined to ruin Ciudad del Este's economic stability, were carried out against Paraguay in the mid-2000s.⁶⁹ Brazil diplomatically responded to the economic dilemma with Asunción, but Lambert described Brazil's growing concern of illicit Paraguayan trafficking across the Brazil-Paraguay borderlands. Much like today, a portion of the contraband could be disguised as licit trade within cross-border traffic and could cross into Brazil undetected.

The TBA is also known for its cultural diversity representing over 65 nationalities, including a large Muslim population. While over half of Arabs in the region live in Foz do Iguaçu, the other Muslims reside in the nearby city of Ciudad del Este, totaling between 20

⁶⁷ Rabossi, "Bridging Three Nations: The triple Border Between Paraguay, Argentina, and Brazil is Both a Cultural Melting Pot and a Regional Hotspot for Illicit Trade. What Does its History Reveal?"; Sverdlick, "Terrorists and Organized Crime Entrepreneurs in the 'Triple Frontier' Among Argentina, Brazil, and Paraguay," 86-7.

⁶⁸ Sverdlick, 89.

⁶⁹ Peter Lambert, "The Myth of the Good Neighbour: Paraguay's Uneasy Relationship with Brazil," *Bulletin of Latin American Research* 35, no. 1 (November 2015): 39, <https://doi.org/10.1111/blar.12410>.

and 30 thousand residents.⁷⁰ Hudson describes the Arab community as secluded from other ethnicities with Muslim schools and establishments, which create the ideal environment for extremist cells that rely on economic funding and recruitment. Furthermore, although some Arabs own commercial companies in Ciudad del Este, a majority reside across the Brazilian border within Foz do Iguaçu or in adjacent communities.⁷¹

2. Reasoning for Crossings and Associated Threats

Since the late 20th century the Triple Frontier has been a region with many fluctuating border security dynamics, specifically the inception of a 1990s multi-national economic partnership and an increase of migrants from Brazil crossing into Argentina. A recent agreement for an open border has created economic opportunities for these nation-states, but not all results have been positive for the region. The birth of Mercosur in 1991 between Argentina, Brazil, Paraguay, and Uruguay was intended to eliminate tariffs, improve economics and support democracy through a multinational bloc.⁷² The partnership resulted in an expedited screening process at border crossings, ultimately creating a region vulnerable to criminal behavior and illegal movement across these nation-state borders. For example, the multilateral bloc contributed to two 1990s bombings in Buenos Aires targeting minority groups, one being the 1994 bombing on a Jewish community, which became the deadliest terrorist attack in Argentine history.⁷³ Another aspect of border security in Argentina occurred more recently during a decade-long migration primarily from Brazil. Within a 10 year span beginning in the early 2000s

⁷⁰ Rex Hudson, *Terrorist and Organized Crime Groups in the Tri-Border Area (TBA) of South America*, The Library of Congress (Washington, DC: Federal Research Division, July 2003), 8–10, https://www.loc.gov/rr/frd/pdf-files/TerrOrgCrime_TBA.pdf; Regina Coeli Machado e Silva, “Diverse Migration Trajectories, Diverse Linguistic Repertoires, Local and Transnational Ties,” in *Multilingual Brazil: Language Resources, Identities and Ideologies in a Globalized World*, ed. Marilda C. Cavalcanti, and Terezinha M. Maher (London: Routledge, 2017), chap. 10.

⁷¹ Hudson, *Terrorist and Organized Crime Groups in the Tri-Border Area (TBA) of South America*.

⁷² Claire Felter, Danielle Renwick, and Andrew Chatzky, “Mercosur: South America’s Fractious Trade Bloc,” *Council on Foreign Relations*, July 10, 2019, <https://www.cfr.org/background/mercotur-south-americas-fractious-trade-bloc>.

⁷³ Mayra Pertossi, “Argentina Acts Against Hezbollah, Blamed for Terror Attacks,” *AP News*, July 18, 2019, <https://apnews.com/787faa733324b619747ac4d2a05f9e0>; Andrea Oelsner, “Consensus and Governance in Mercosur: The Evolution of the South American Security Agenda,” *Security Dialogue* 40, no. 2 (April 2009): 207, <https://journals.sagepub.com/doi/pdf/10.1177/0967010609103086>.

Senegal migrants from sub-Saharan Africa have travelled from Brazil into Argentina, oftentimes finding local Senegalese networks offering labor, social networking, cultural identity, and family relations.⁷⁴ Some of these African migrants successfully traversed these borderlands undocumented, demonstrating the continued porosity in Argentina's TBA in recent years.⁷⁵ These examples do not only describe specific reasonings for border crossings into Argentina, but pinpoint potential threats to the nation-state's national security due to inefficient border integrity.

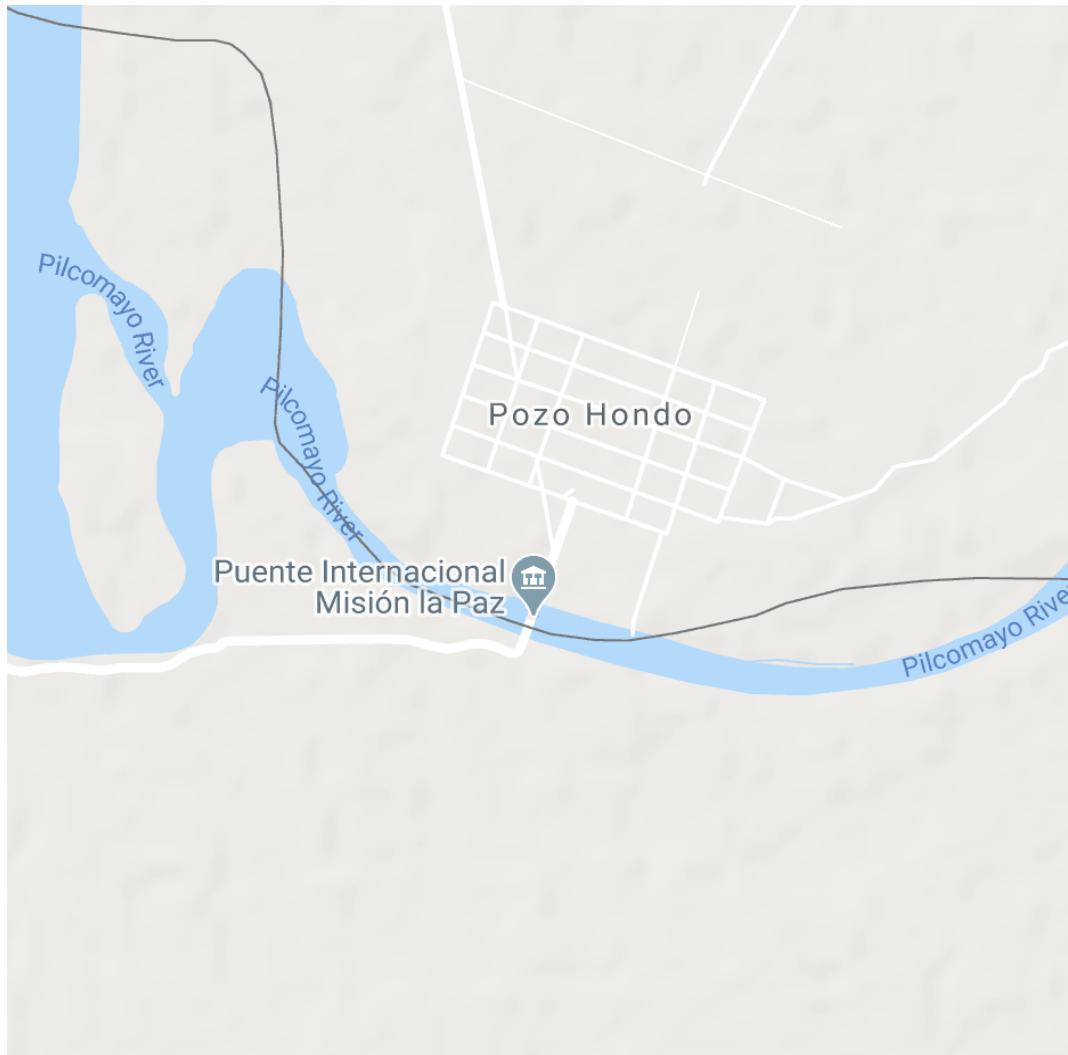
3. Entry points of the TBA

The Argentine National Gendarmerie's controlled entry points, at the Paraguay and Brazil borders, include waterways that split the nation-states borderlands and create a natural boundary. The northernmost access point shown in Figure 8, which connects Paraguay to Argentina over the Pilcomayo River, uses the River La Paz Mission International Bridge as the only means of transportation into either nation. The two-lane bridge connects the towns of Misión La Paz, Argentina and Pozo Hondo, Paraguay is under 24-hour surveillance by the Argentine National Gendarmerie.⁷⁶ The one vulnerability at this entry point is the ability to cross the Pilcomayo River due to its distance from its adjacent shoreline, and its curvature which provides locations unviewable from the international bridge only one mile upstream or down. At its widest point, the waterway measures approximately 400 feet in width and could be navigated by raft or small boat without the border patrols knowledge if the area's topography is used for seclusion.

⁷⁴ Bernarda Zubrzycki, "The Senegalese in Argentina: Migratory Networks and Small-Scale Trade," in *Mobility between Africa, Asia and Latin America: Economic Networks and Cultural Interactions*, ed. Ute Rosenthaler (London, UK: Zed Books, 2017), 111–5.

⁷⁵ Ida Marie Vammen, "Sticking to God: Brokers of Hope in Senegalese Migration to Argentina," in *Hope and Uncertainty in Contemporary African Migration*, ed. Nauja Kleist and Dorte Thorsen (Abingdon, UK: Taylor and Francis Group, 2016), 40–1.

⁷⁶ "La Paz Mission - Pozo Hondo," International Relations: Government of the Province Salta, accessed July 11, 2020, <http://www.internacionalsalta.gob.ar/index.php/gestion/pasosfronterizos/pfparaguay/misionlapaz>.



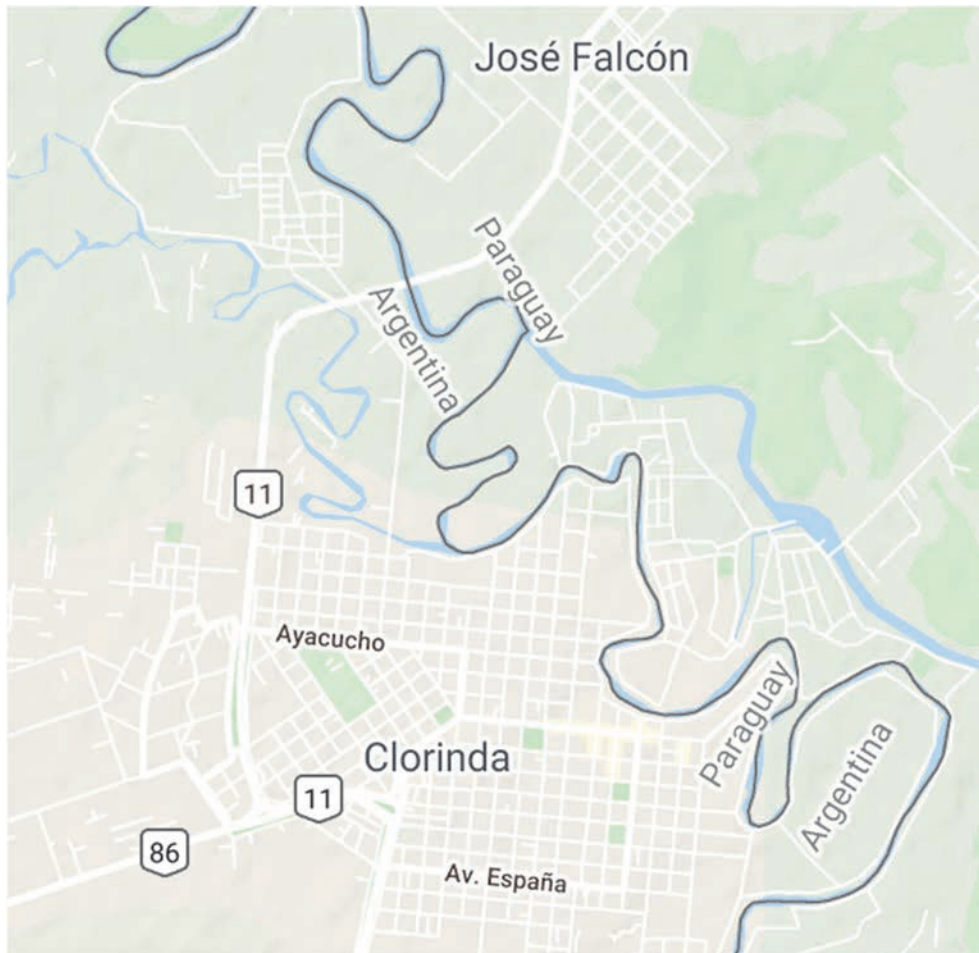
The River La Paz Mission International Bridge ties the nation-states of Argentina and Paraguay, and lies 12 miles southeast of the Argentina-Bolivia-Paraguay junction.

Figure 8. Misión La Paz-Pozo Hondo Border Map.⁷⁷

Continuing south-east, the next international entry point separates the border cities of Clorinda, Argentina and José Falcón, Paraguay. Asunción, Paraguay's capital city, is only a 20-mile drive which emphasizes commercial traffic to this port of entry. Figure 9 depicts customs checkpoints on both sides of the San Ignacio de Loyola International Bridge, both the Argentine National Gendarmerie and Paraguay's Border Patrol work

⁷⁷ Source: Misión La Paz-Pozo Hondo border map, Google Maps, accessed July 11, 2020, <https://www.google.com/maps/@-22.3778389,-62.5396195,14.04z>.

together to screen traffic flows before entering their countries. The separation schemes split commercial traffic from personal vehicles, which assists in mitigating ballooning and allows for expediting customs processing. One drawback witnessed at the checkpoint is the lack of a public transportation lane. Being in close proximity to Asunción, the need for additional traffic separation enables faster processing times and consequently less traffic wait times.



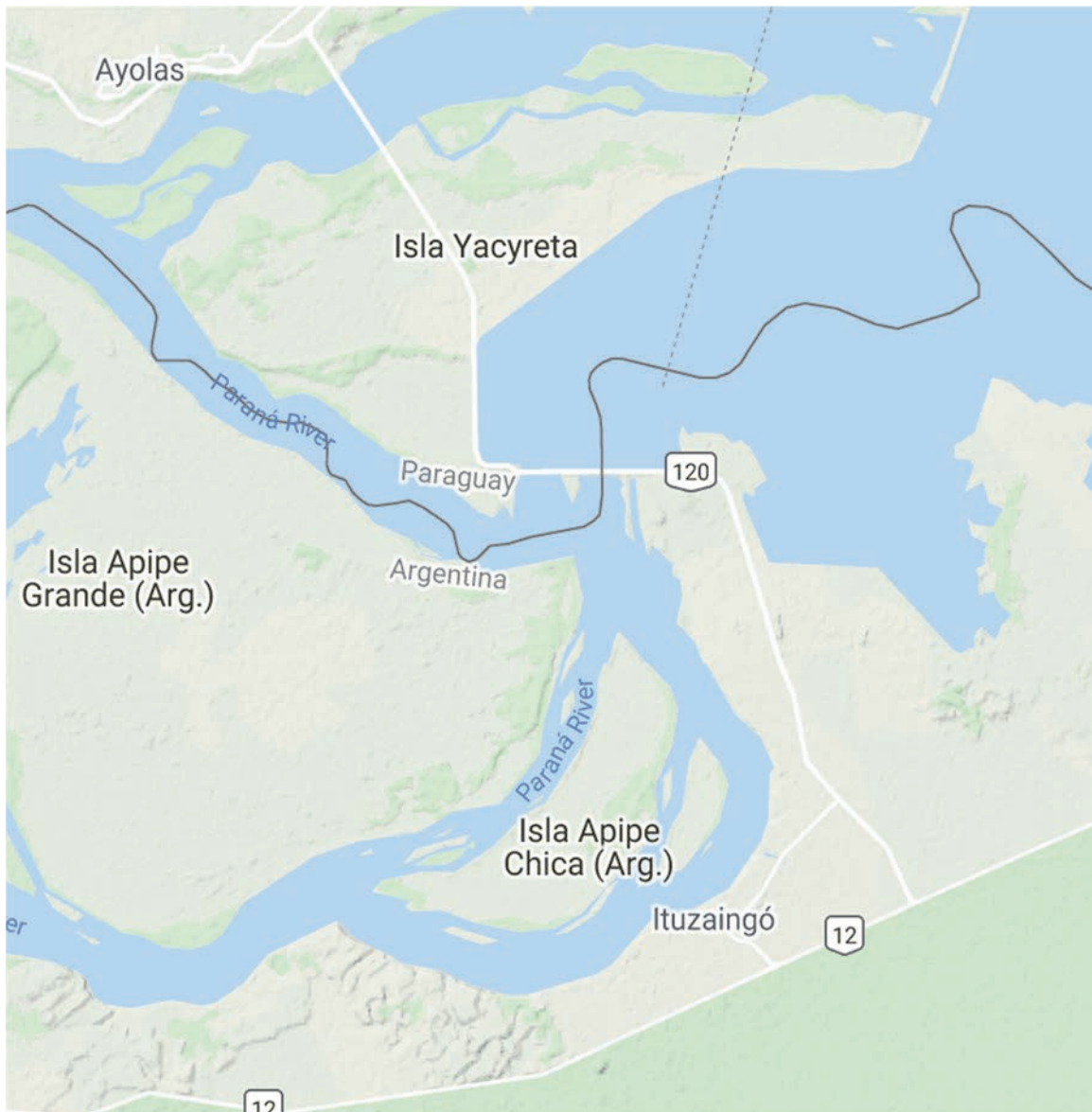
The area is heavily transited by commercial vehicles due to its close proximity to Paraguay's capital city of Asunción.

Figure 9. Clorinda-José Falcón Border Map.⁷⁸

⁷⁸ Source: Clorinda-José Falcón border map, Google Maps, accessed July 11, 2020, <https://www.google.com/maps/@-25.2770889,-57.7289384,14.98z>.

The Ituzaingó-Yacyretá Island border crossing, as seen in Figure 10, uses the Yacyretá Hydroelectric Dam as the extension between the cities of Ituzaingó, Argentina and Ayolas, Paraguay. With some tourism, cross-border commuting, and commercial vehicles, this border checkpoint is one with minimal traffic compared to others at the Argentina-Paraguay borderlands. With customs checkpoints using multiple inspection booths, traffic separation schemes are not offered. Unless the cities of Ituzaingó and Ayolas grow considerably from their combined 40-thousand inhabitants, the need for separating border traffic is not warranted. However, crossings from Ituzaingó and Ayolas may multiply according to the Paraguayan Foreign Ministry. With the recent inauguration of the border crossing, both Argentina and Paraguay are expecting an “economic, commercial and tourist boost” in the region.⁷⁹ If both nation’s forecasts are correct, configuring the point-of-entry to deal with heavier traffic flows may need to occur once trend analysis shows an increase in crossings.

⁷⁹ “Paraguay And Argentina Postpone the Inauguration of a Border Crossing Until August,” Spain’s News, July 26, 2019, <https://spainsnews.com/paraguay-and-argentina-postpone-the-inauguration-of-a-border-crossing-until-august/>.



Located adjacent to the Yacyretá Hydroelectric Dam on the Paraná River, the recently inaugurated crossing is the newest border control point between Argentina and Paraguay.

Figure 10. Itizaingó-Yacyretá Island Border Map.⁸⁰

Figure 11 represents the last international crossing along the Argentina-Paraguay border before the intersection of Argentina, Brazil, and Paraguay conjoins the cities of Posadas and Encarnación. The San Roque González de Santa Cruz International Bridge,

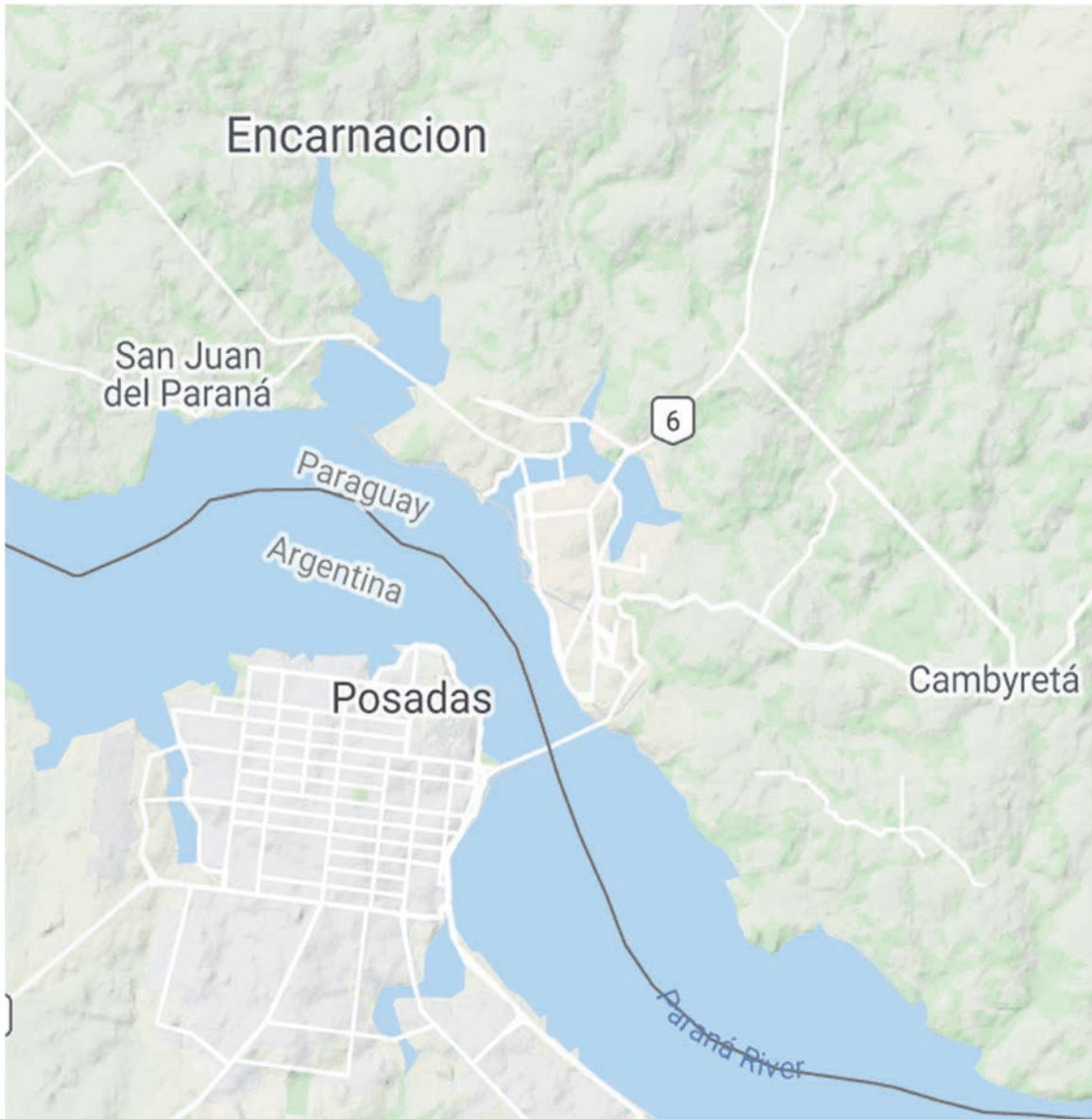
⁸⁰ Source: Itizaingó-Yacyretá Island border map, Google Maps, accessed July 11, 2020, <https://www.google.com/maps/@-27.5123969,-56.8524468,11.97z>.

consists of a 2-lane road and a railway, and has spanned the Paraná River since 1990.⁸¹ The Posadas, Argentina customs checkpoint inspects traffic to-and-from Paraguay, with a total of eight lanes (four in each direction) dedicated to vehicle screening and a lane for commercial vehicles. Long wait times during peak traffic times can be witnessed at this border crossing for those entering and exiting Argentina. The Encarnación, Paraguay border control point also separates private autos, mass transit, and commercial vehicles for both incoming and outgoing traffic. Moreover, the commuter rail that connects the two cities has contributed towards reducing bridge traffic since December 2014, and runs every 30 minutes across the international bridge.⁸² Spreading the load of cross-border traffic has benefited both cities combined 463-thousand residents, but with a current growth rates over two percent and predicted to reach over 450 thousand by 2030 in Posadas alone, the border control point may need to plan on expansion of the railway and customs checkpoints to avoid future ballooning.⁸³

⁸¹ Walter Fernando Brites, "Twin cities? Posadas, Argentina and Encarnación, Paraguay From a Socio-Urban Perspective," *Estudios Fronterizos* 19, (December 2018), <http://dx.doi.org/10.21670/ref.1820020>.

⁸² "The Train Linking Posadas and Encarnación Began to Circulate," *El Territorio*, January 2, 2015, <https://www.eltterritorio.com.ar/nota4.aspx?c=8717255571933626>.

⁸³ "Paraguay Population (Live)," Worldometer, accessed on July 15, 2020, <https://www.worldometers.info/world-population/paraguay-population/>; "Posadas, Argentina Metro Area Population 1950–2020," Macrotrends, U.N. population predictions from 1950–2037, accessed on July 15, 2020, <https://www.macrotrends.net/cities/20072/posadas/population>.



With the growth rates of Encarnación and Posadas increasing and predicted to continue, The San Roque González de Santa Cruz International Bridge may be forced to manage larger amounts of border traffic.

Figure 11. Posadas-Encarnación Border Map.⁸⁴

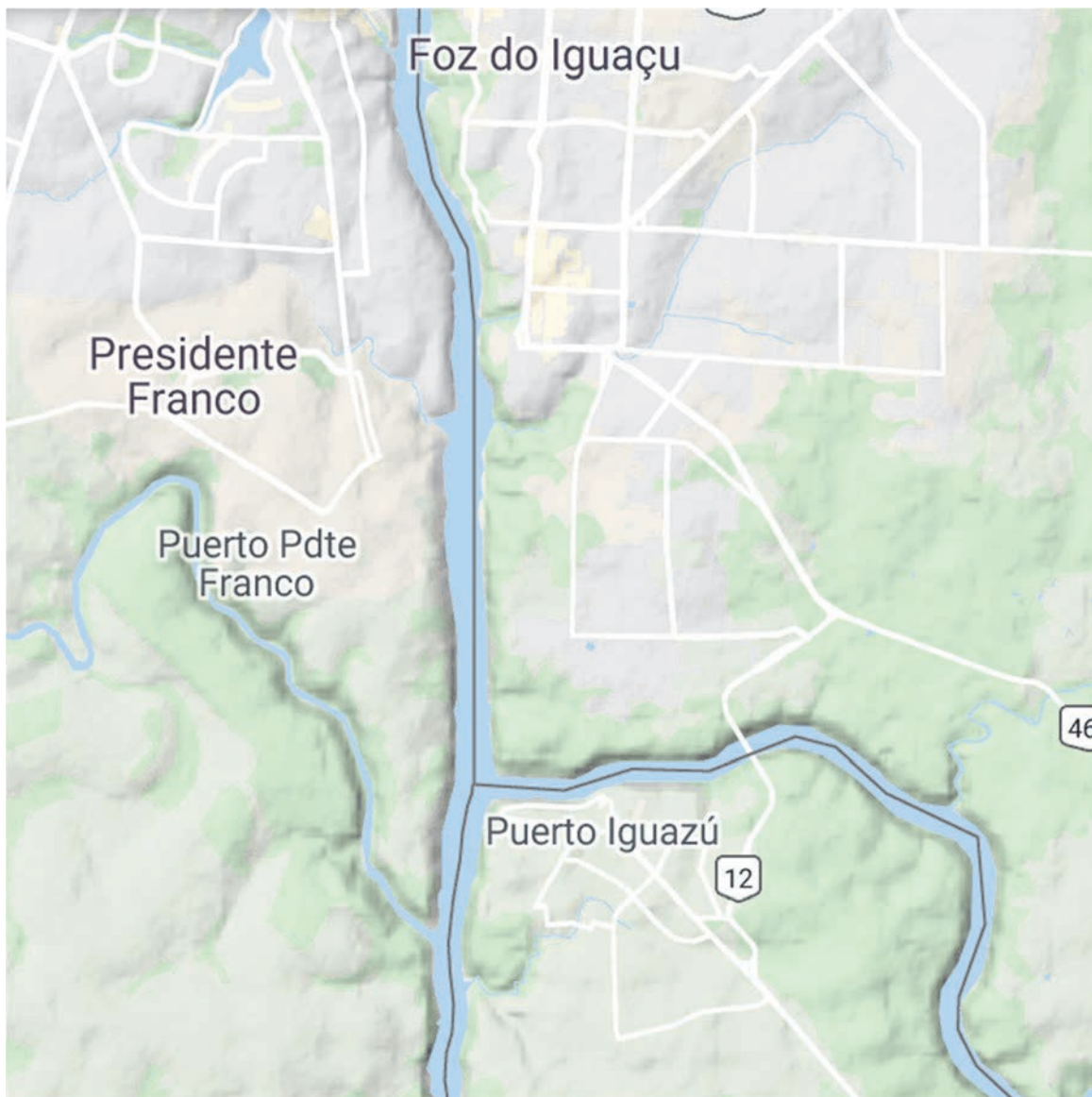
The northernmost access from Argentina to Brazil, as seen in Figure 12, lies between the border cities of Puerto Iguazú and Foz do Iguaçu. This border checkpoint not

⁸⁴ Source: Posadas-Encarnación border map, Google Maps, accessed July 14, 2020, <https://www.google.com/maps/@-27.4033449,-56.2131062,10.28z>.

only processes border traffic, but has recently strengthened surveillance to stop drug smuggling. In the heart of the Tri-Border Region, the Tancredo Neves Bridge services approximately 1.4 million people per year and is open 24 hours a day, and seven days a week.⁸⁵ The two-lane structure, extending over the Iguazú River, is capped by two border patrol checkpoints serviced by the Argentine customs and migration authorities and the Federal Police of Brazil. Both border crossing stations contain multiple processing stations, but separate traffic differently according to the controlling authority. For example, the Foz do Iguaçu customs checkpoint divides public tourist vans from private automobiles and commercial trucks, while the Puerto Iguazú station separates trucks and buses from motorcycles, cars, and vans. One similarity that benefits both access points is the ability to shift routes during peak traffic hours by reassigning lanes to meet the traffic needs. These steps to mitigate traffic are also used to minimize illicit smuggling from Paraguay, through Brazil, into Argentina. Stronger surveillance at the border station has occurred since the early 2000s, and drug smugglers from Paraguay have found alternate ways to bypass the bridge and enter Argentina through international ports of entry such as Posadas.⁸⁶

⁸⁵ Sverdlick, "Terrorists and Organized Crime Entrepreneurs in the 'Triple Frontier' Among Argentina, Brazil, and Paraguay," 89.

⁸⁶ Hudson, *Terrorist and Organized Crime Groups in the Tri-Border Area (TBA) of South America*, *The Library of Congress*, 24-5.



Located at the epicenter of the Tri-Border Region, the Tancredo Neves Bridge administers over one million crossings per year.

Figure 12. Puerto Iguazú-Foz do Iguaçu Border Map.⁸⁷

The final five Argentina-Brazil international border crossings are located in the countryside of the Argentina-Brazil borderlands and fall outside of the scope of this research due to their distant proximity to the areas monitored by border surveillance

⁸⁷ Source: Puerto Iguazú-Foz do Iguaçu border map, Google Maps, accessed July 16, 2020, <https://www.google.com/maps/@-25.5866753,-54.6253561,12.05z>.

technologies. These crossings are worth mentioning to complete the list of all Argentina-Brazil international border crossings, and are as follows: International Bridge Commander Andresito and the San Antonio-Santo Antônio do Sudoeste of the Misiones Province, and the International Bridge “Paraje Rosales” of Santa Catarina, Santo Tomé-São Borja Integration Bridge, and the International Bridge Paso de Los Libres of the Corrientes Province.

C. BORDER THREATS

A 2018 Presidential Decree in Argentina has categorized activities harmful to the nation-state’s National Defense as “new threats,” some relating to events at Argentina’s political borders. The specific items that translate to the borderlands include illegal immigration; immigrant traffic; uncontrolled migration of refugees; terrorism; and illicit arms, drug, and people trafficking.⁸⁸ An alarming fact about President Macri’s decree that pinpointed Argentina’s “new threats” was that some of these illicit activities have been occurring for nearly a century. For instance, illegal drug trafficking has occurred since the early 20th century. Some of the earliest accounts of illegal drug use for recreational purposes occurred in Argentine tango clubs in the 1920s.⁸⁹ As the night scene cultures for cocaine grew, so did the demand for the illicit substance and the need for cross-border transiting. The first two cocaine trafficking incidents occurred in 1962, with the arrests of 56 people and the seizure of roughly 3.3 kilos in one incident and the seizure of 848 grams in another, in the province of La Salta near the Bolivian border.⁹⁰ Furthermore, Argentina participated in aircraft smuggling to national coca-users throughout this time period, from

⁸⁸ Leonardo Natan Gómez, and Leonardo Augusto dos Santos Oliveira, “Argentine’s Defense Policy: The ‘New Threats’ and the Presidential Decree 683/2018,” *Revista de Estudos e Pesquisas Avançadas do Terceiro Setor* 2, no. 2 (June 2019): 76–7, <https://portalrevistas.ucb.br/index.php/REPATS/article/view/10620/pdf>.

⁸⁹ Gootenberg, “The ‘Pre-Colombian’ Era of Drug Trafficking in the Americas: Cocaine, 1945–1965,” 154.

⁹⁰ Paul Gootenberg, *Andean Cocaine: The Making of a Global Drug* (Chapel Hill, NC: The University of North Carolina Press, 2008), 270.

the 1950s to 1970s.⁹¹ More recent trends shown in Figure 13 demonstrate how these national threats continue to infiltrate the Argentine borderlands.

The U.S. State Department recently released a 10-year survey that examined illegal drug use in the Western Hemisphere, demonstrating demand in the Southern Cone. Argentina was amongst the highest-ranking countries during that time period which began in 2001, and was primarily caused by drug use under 18 years old.⁹² The study specifically found an area of grave concern for the secondary school youths of Argentina. Obtaining cocaine was easier in Argentina than anywhere in the hemisphere, with 21 percent of secondary school students able to locate cocaine, locally known as *paco*.⁹³ The same study also demonstrated rising rates of Argentine youth using other types of drugs, including marijuana and inhalants. During the same period between 2001 and 2011, the prevalence of secondary school students using marijuana increased by nearly seven percent, and the prevalence of inhalant use increased by two percent.⁹⁴ Recent statistics show an increase in drug seizures in Argentina, demonstrating the continuous threat of illegal drugs in the region. Between 2016 and 2018 the amounts of marijuana and cocaine seized by Argentina's federal security forces increased to over 50 percent.⁹⁵ These statistics do not necessarily represent increased drug trafficking through Argentina's borders, but provide evidence that the contemporary existence of drug demand within the nation-state.

⁹¹ Gootenberg, "The 'Pre-Colombian' Era of Drug Trafficking in the Americas: Cocaine, 1945–1965," 154.

⁹² Organization of American States, Report on Drug Use in the Americas 2015. Report OEA/Ser.L/XIV.6.6 (Washington, D.C.: Inter-American Observatory on Drugs of CICAD, 2015), http://www.cicad.oas.org/oid/pubs/DrugUseAmericas_ENG_web.pdf.

⁹³ Organization of American States, Report on Drug Use in the Americas 2015, 103.

⁹⁴ Organization of American States, 67–86.

⁹⁵ Cecilia Di Lodovico, "Those Arrested for Drug Trafficking in Argentina Would Fill 21 Gran Rex," Perfil, February 21, 2019, <https://www.perfil.com/noticias/policia/los-detenidos-por-narcotrafico-en-argentina-llenarian-21-gran-rex.phtml>.

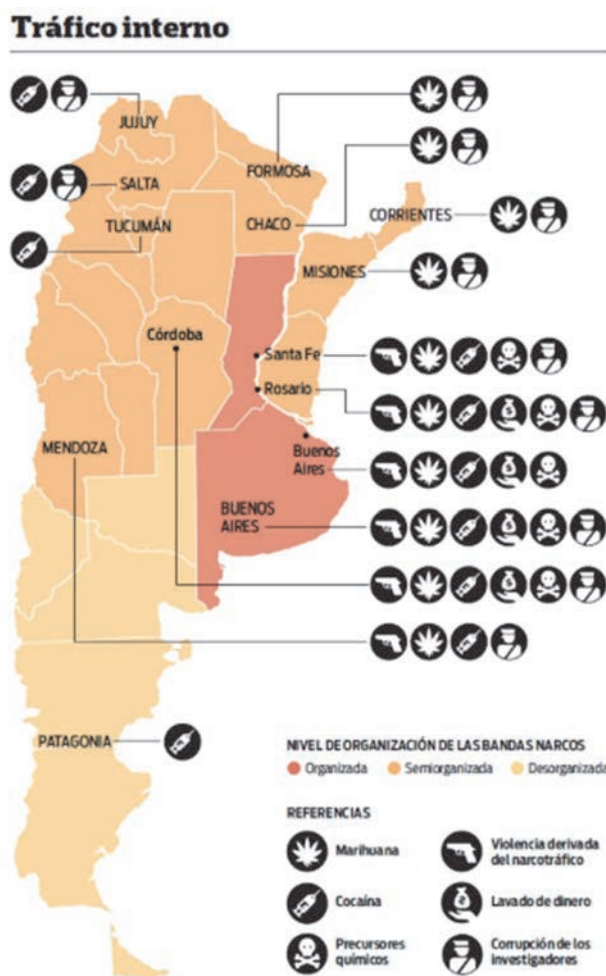


Figure 13. Crime Categories in Argentina’s Provinces.⁹⁶

D. BORDER SECURITY TECHNOLOGY

The emergence of Argentina’s smart border will assist the homeland security mission against international threats, and it bears a resemblance to another smart border in the Western Hemisphere, specifically the U.S.-Mexico’s border. Israel Aerospace Industries installed Argentina’s smart border system, which was operational by October 2019.⁹⁷ According to Eugenio Burzaco, Argentine Secretary of Security, the border

⁹⁶ Source: Mike LaSusa, “Report Maps Regional Differences in Argentina Drug Trade,” InSight Crime, February 4, 2016, <https://www.insightcrime.org/news/analysis/report-maps-regional-differences-in-argentina-drug-trade/>.

⁹⁷ Szklarz, “Argentina Launches First Smart Border Surveillance System in Latin America.”

surveillance system helps protect Argentina against illegal drug smuggling and “is very similar to the system used at U.S. borders.”⁹⁸ Confirmed data shows that there is cocaine smuggling into Argentina from Bolivia, while marijuana enters Argentina from the TBA. To monitor and interdict this smuggling activity, the smart border system uses fixed sensors, radars, vehicles, patrol ships, drones and satellites.⁹⁹ The smart border concept revolves around Argentina’s four Command and Control Centers in La Quiaca, Salvador Mazza, Aguas Blancas, and Puerto Iguazú.¹⁰⁰ Vehicles and sensors provide the control centers’ intelligence on illegal crossings at the border regions, which include illicit trespassing on land, air, or the river boundaries separating Paraguay and Brazil from Argentina.

A smart border is a force multiplier in the detection of illegal border crossings. Argentina’s surveillance technologies assist Argentina’s border agency in identifying the borderlands that harbor illicit traffic. This function coincides with the national defense mission of the Argentine National Gendarmerie’s Repression and Prevention Police: the deterrence of cross-border smuggling.¹⁰¹ In support of Argentina’s national defense mission, the Argentine National Gendarmerie’s smart border findings indicate the border regions with the most illegal crossings. Once these hot borders are established, assessments determine the resources necessary to achieve the political objective of stopping and prosecuting narcotics traffickers.

E. CONCLUSION

The problem at the northern borderlands that the government of Argentina is responding to drug trafficking and the illicit border crossings. One way to combat these

⁹⁸ Szklarz, “Argentina Launches First Smart Border Surveillance System in Latin America;” “IAI Completes Installation of First Secured Border Crossing in Argentina,” DEFPOST: A Comprehensive Aerospace and Defense Portal, December 20, 2017, <https://defpost.com/iai-completes-installation-first-secured-border-crossing-argentina/>.

⁹⁹ Szklarz, “Argentina Launches First Smart Border Surveillance System in Latin America.”

¹⁰⁰ Szklarz.

¹⁰¹ “Gendarmeria Nacional Argentina,” F.I.E.P.: International Association of Gendarmeries and Police Forces with Military Status, accessed on March 19, 2020, <http://www.fiep.org/member-forces/argentinian-national-gendarmerie/>.

threats could be through technology as a force multiplier for the agencies responsible for homeland defense. Although the adoption of border surveillance technologies could someday contribute to decreasing illegal entry and contraband in the region, this smart border methodology is new for Argentina's government and will take some time until Buenos Aires can determine if these technologies are successful or unsuccessful. While the system has only been operational for approximately one year, the force multiplying technologies have not yet produced evidence to show an increase in the Argentine National Gendarmerie's capacity for borderland protection through distribution chain interruption and decreases in smuggling numbers. One example that could assist in Argentina's decisions in the border region is the southern U.S. border. Nearly two-decades have elapsed since the hardening of the U.S.-Mexico border, and this smart border illustrates many advantages, disadvantages, and lessons learned for the Argentina-Bolivia border region to incorporate into their structure.

III. U.S.-MEXICO CASE STUDY

The U.S.-Mexico borderlands are unlike anywhere else in the world. As the most traveled land crossing on earth, the U.S. southern border is also one of the most heavily fortified border regions.¹⁰² However, the beginnings of these borderlands date to the early 19th century and evolved through numerous territory exchanges, ultimately creating today's 1,954-mile boundary between the nation-states. These land exchanges included settlements and townships that would later become adjacent border cities which presently require granted access from one nation-state to the next. The following literature examines the origin behind the border, geography and geopolitics, and bilateral relations that impact these borderlands. The U.S.-Mexico border is the most traversed border in the world because of many reasons, including economic relations, bilateral national policies, and recent concerns of illicit crossings of migrants and traffickers. Although these illicit crossings may be disguised as legal traffic at U.S.-Mexico entry control points, rural Arizona and New Mexico border regions of Mexico are the focal points of these illegal crossings.

One aspect of crossings is illicit traffickers utilizing legitimate means across points of entry, or those using illegitimate methods to bring contraband for distribution and sales. These scenarios exhibit the importance of international point of entry, and how effective these checkpoints can be in denying illicit traffic from entering the U.S. One tool the CBP uses to combat illegal trafficking is surveillance systems, which act as a force multiplier to supplement the agents in the field. Consequently, data and statistics on crossings and technology utilization are tools to determine if these border deployments are stopping illicit traffic flows from Mexico. Moreover, further investigation can determine if these border control technologies are contributing to stability or instability in the borderlands. While evidence shows that border security technologies have contributed to CBP prosecutions and seizures of contraband, the root causes of northern flow from Mexico into the U.S. are

¹⁰² Peter Andreas, *Border Games: Policing the U.S.-Mexico Divide* (Ithaca, NY: Cornell University Press, 2009), 141.

far from resolved. Rather than using a physical wall to create the illusion of border security, diplomatically establishing mechanisms would allow for an entrance process into the U.S. with greater capacity, which would in-turn relieve illicit traffic at the U.S.-Mexico border.

A. BACKGROUND OF REGION

The origin behind the U.S.-Mexico border dates to the beginning of the 19th century when a large swath of today's Central U.S. was purchased from France. The 1803 acquisition, known as the Louisiana Purchase, helped fund Napoleon Bonaparte's armies in preparation for the French War, and became the first time the U.S. shared a border with Spain's Mexico.¹⁰³ Approximately 50 years later, the two final exchanges of land following the Mexican-American War left the border as it is today. The Treaty of Guadalupe Hidalgo, which was signed on February 2, 1848, gave the U.S. lands known today as California to the eastern territories of Colorado, New Mexico, and the western regions of Texas.¹⁰⁴ The final treaty, which gave the south-western lands between Yuma, AZ, and Las Cruces, NM, to the U.S., was signed on December 30, 1853 and named the Gadsden Purchase.¹⁰⁵ The present-day U.S.-Mexico border has remained the same geographically since the 1850s.

The U.S.-Mexico border is an international boundary that uses local terrain, and bilateral relations to manage its national interests of security and commerce. The physical topography of the border from east to west begins at the intersection of the Rio Grande and the Gulf of Mexico. The Rio Grande River, which acts as a natural border, extends from El Paso into the Gulf of Mexico for a total 1,255 miles.¹⁰⁶ The remainder of the border

¹⁰³ "The Louisiana Purchase," The Jefferson Monticello, accessed July 22, 2020, [https://www.monticello.org/thomas-jefferson/louisiana-lewis-clark/the-louisiana-purchase/#:~:text=The%20Louisiana%20Purchase%20\(1803\)%20was,Mississippi%20River%20for%20%2415%20million.](https://www.monticello.org/thomas-jefferson/louisiana-lewis-clark/the-louisiana-purchase/#:~:text=The%20Louisiana%20Purchase%20(1803)%20was,Mississippi%20River%20for%20%2415%20million.)

¹⁰⁴ "The Treaty of Guadalupe Hidalgo," The Library of Congress: Hispanic Reading Room, accessed July 23, 2020, <https://www.loc.gov/rr/hispanic/ghtreaty/>.

¹⁰⁵ "Gadsden Purchase, 1853–1854," U.S. Department of State: Office of the Historian, accessed July 23, 2020, <https://history.state.gov/milestones/1830-1860/gadsden-purchase/#:~:text=The%20Gadsden%20Purchase%2C%20or%20Treaty,of%20Arizona%20and%20New%20Mexico.>

¹⁰⁶ "About the Rio Grande," U.S. International Boundary and Water Commission, accessed July 23, 2020, <https://www.ibwc.gov/CRP/riogrande.htm>.

extends west from El Paso until intersecting the Pacific Ocean and is artificially drawn to complete the 1,954-mile boundary. Along this border lies economic partnerships demonstrating bilateral relations and national interests of the U.S. and Mexico. The border towns along this corridor are reliant on each other's commerce and trade, but have juggled these economic interests alongside international security since the events of 9/11. The U.S.-Mexico Border Partnership Agreement, known as the Smart Border Accord that was signed on March 22, 2002, is a bilateral arrangement concentrating on the "safe and secure flow of people and goods and... border infrastructure."¹⁰⁷

Recent U.S. policies and multilateral agreements have affected the U.S.-Mexico border through the use of border deployments, leaving a hardened border where a minimally secured borderland once stood. Through a series of U.S. operations, beginning in the early 1990s, the border has become often impassable for legitimate and illegitimate border crossers in regions of California and Texas. Additional funding, infrastructure, and manpower were distributed to multiple U.S. locations in the 1990s, in an effort to counter illicit entry and narcotics trafficking. The San Diego region's Operation Hold the Line in 1993, Operation Gatekeeper of El Paso in 1994, Operation Rio Grande Valley of McAllen Texas in 1997, and Operation Safeguard of Arizona in 1999, all demanded resources to combat illegal concerns at the border.¹⁰⁸ Additionally, the North American Free Trade Agreement (NAFTA) of 1994 resulted in Mexico City's termination of tariffs on agriculture exports to the U.S. and Canada, and this happened concurrently to the policy changes that militarized the state of the border.¹⁰⁹ These political and economic changes left Mexico's agrarian sector in an economic decline, and left the national boundary, which

¹⁰⁷ Peter Andreas, "US-Mexico Border Control in a Changing Economic and Security Context," *US-Mexico Policy Bulletin* 1, no. 1 (January 2005): 3, <https://www.wilsoncenter.org/sites/default/files/media/documents/publication/Mexico.PolicyBulletin.Jan.05.pdf>.

¹⁰⁸ Jason Ackleson, "Constructing Security on the U.S.-Mexico Border," *Political Geography* 24, no. 2 (February 2005): 170–2, <https://doi.org/10.1016/j.polgeo.2004.09.017>; Rodrigo Nieto-Gomez, "Walls, Sensors and Drones: Technology and Surveillance on the US–Mexico Border," in *Borders, Fences and Walls: State of Insecurity?* ed. Elisabeth Vallet (London: Routledge, 2014), 195–6; *Crossing Arizona*, directed by Joseph Mathew and Dan DeVivo (2006; New York, NY: Rainlake Media, 2006), 1:35, <https://www.amazon.com/Amazon-Video/> and <https://rainlake.com/feature-documentaries/>.

¹⁰⁹ Mathew and DeVivo, *Crossing Arizona*, 14:52.

was once traversed with minimal regulation, in the hands of border deployment reinforcements.

Since the 21st century, the relationship between the U.S. and Mexico has changed due to decreased migrations into the U.S. and the Mérida Initiative, which strengthened immigration control along the U.S.-Mexico border. The late 20th century marked one of the largest historical international migrations from Mexico to the U.S., but the population flow has eased since the early 2000s. Some evidence has associated the decreased migration flows with the U.S. economic decline that occurred in the early 21st century.¹¹⁰ The attraction of an economically declining nation-state was lower for those looking to find financial stability outside of Mexico. Another recent change at the border involves bilateral efforts to improve border security and traffic processing along the U.S.-Mexico corridor. Pillar Three of the Mérida Initiative, titled “Creating a ‘21st-Century Border,’” became a medium for both nations to “[facilitate] the licit flow of people, commerce, and trade through U.S. ports of entry while securing the border against threats.”¹¹¹ Although measurements of the pillar’s effectiveness have gone unseen, its results tend to get lumped with criminal apprehensions, training standards for law enforcement, and drug seizure totals. However, the processes at the U.S.-Mexico border that changed due to the Mérida Initiative include mechanisms that assist the CBP in identifying illicit goods, which include the Customs-Trade Partnership Against Terrorism (C-TPAT) and the Free and Secure Trade (FAST) programs.¹¹² U.S. analysts are asking for more reporting on the initiatives so Congress can identify what the \$3.1 billion has achieved since the 2008 signing.¹¹³

In the aftermath of new security at the border, the majority of those willing to make the journey from Mexico into the U.S. undetected are forced to travel through Arizona’s

¹¹⁰ Andrés Villarreal, “Explaining the Decline in Mexico-U.S. Migration: The Effect of the Great Recession,” *Demography* 51, no. 6 (December 1, 2014): 2204, <https://doi.org/10.1007/s13524-014-0351-4>.

¹¹¹ Clare Ribando Seelke, and Kristin Finklea, *U.S.-Mexican Security Cooperation: The Mérida Initiative and Beyond*, CRS Report No. R41349 (Washington, DC: Congressional Research Service, 2017), 19, <https://fas.org/sgp/crs/row/R41349.pdf>

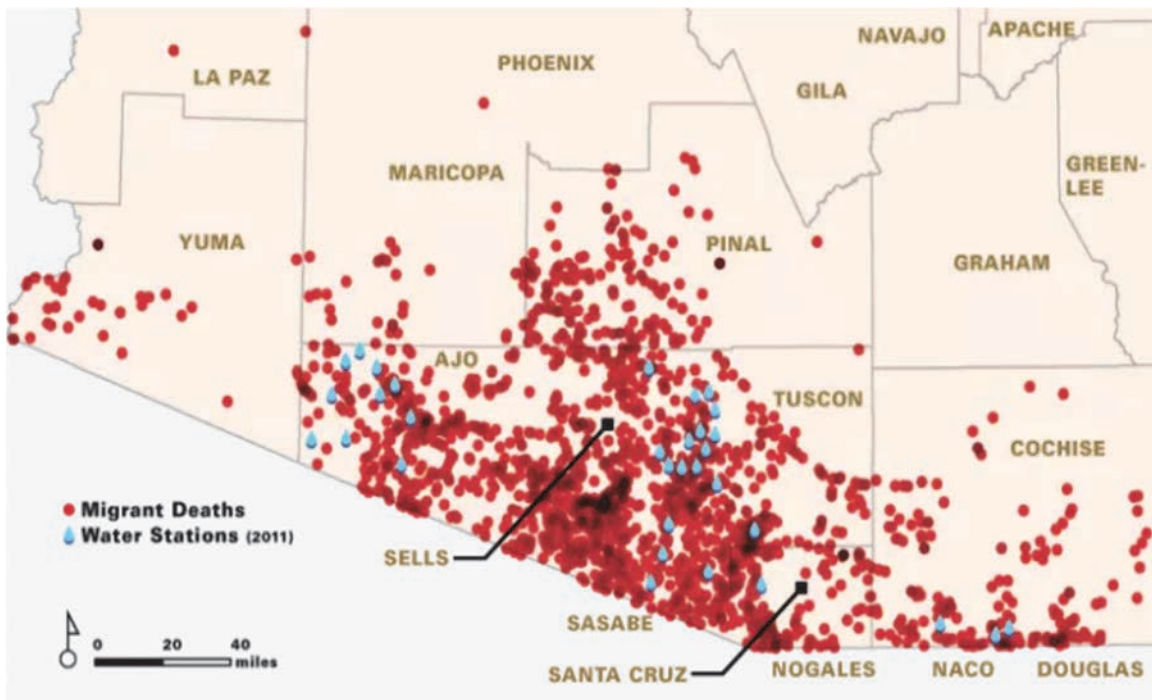
¹¹² Seelke and Finklea, *U.S.-Mexican Security Cooperation: The Mérida Initiative and Beyond*, 19.

¹¹³ Clare Ribando Seelke, *Mexico: Evolution of the Mérida Initiative, 2007–2020*, CRS Report No. IF10578 (Washington, DC: Congressional Research Service, 2020), 2, <https://fas.org/sgp/crs/row/IF10578.pdf>.

harsh terrain. One route used by travelers heading through Arizona crosses a 2.8 million-acre Indian reservation. According to Mike Wilson, a humanitarian and member of the Tohono O’odham Nation, “... the Baboquivari trail across the Tohono O’odham Indian Nation... is the deadliest migrant trail in the U.S.”¹¹⁴ A common destination for many of these travelers is Interstate 8, which is a four-to five-day hike in 100+ degree heat and desert conditions, explains U.S. Border Patrol (USBP) Agent Andy Adame.¹¹⁵ This harsh environment equates to high mortality rates. Over an 11-year span, Humane Borders humanitarian organization that tracks migration through the north of this region—calculated 2,269 migrant deaths and mapped the locations of the deaths in relation to water stations as seen in Figure 14. It is difficult to determine if surveillance technologies have increased or decreased mortality rates, but the decisions of U.S. policy makers and CBP enforcement influenced migrants into these dangerous terrains.

¹¹⁴ Mathew and DeVivo, *Crossing Arizona*, 5:45; Gabriella Soto, “Banal Materiality and the Idea of Sovereignty: The Migration Funnel Effect and the Policing of the U.S.-Mexico Border, 2000–2016,” *Political Geography* 66 (September 1, 2018): 118, <https://doi.org/10.1016/j.polgeo.2018.08.003>.

¹¹⁵ Mathew and DeVivo, 26:08.



The 2,269 deaths in relation to water stations from October 1999 through March 2012, provided by Humane Borders Incorporated.

Figure 14. Arizona Crossings from 1999 to 2012.¹¹⁶

B. HUMANITARIANS AND POLICY AT THE BORDER

Many migrants entering the U.S. from Mexico are searching for a better life for themselves and their loved ones. One perspective comes from a former guide, or pollero, who once led groups across the border into the U.S.: “These people have the courage to leave everything to go [to the U.S.] ... they want to give their children something better.”¹¹⁷ Research has shown that a large percentage of Mexicans who migrate to the U.S. are family patriarchs in search of opportunities that benefit their families

¹¹⁶ Source: John F. Chamblee, Michael Malone, and Mathew Reynolds, “Migrant Death Map,” *Humane Borders Inc.*, quoted in Terry Greene Sterling, “Death in the Desert: Is Immigration Reform Killing the American Dream,” *Newsweek*, July 10, 2013, <https://www.newsweek.com/2013/07/10/death-desert-immigration-reform-killing-american-dream-237702.html>.

¹¹⁷ Mathew and DeVivo, *Crossing Arizona*, 11:50.

wellbeing.¹¹⁸ Another man from the city of Altar Sonora, Mexico adds to the conversation, explaining that a profitable journey to the U.S. may lead to a single migration rather than multiple trips.¹¹⁹ Finally, another first-hand account comes from a husband and father from the city of Hidalgo, who was witnessed travelling by Mike Wilson within the Tohono O’odham Indian Nation. Upon receipt of donated supplies to continue his journey, the Hidalgo resident described his arrival to the U.S. as a way to find work to support his wife in need of surgery, and his young children who were awaiting his return in Mexico.¹²⁰ Although these justifications cannot account for all migrants crossing the U.S.-Mexico border, they provide a glimpse into why this dangerous voyage is a necessary risk for many.

These migrants, however, are not alone in their journey towards a land of opportunity. With the help of humanitarian organizations and good Samaritans, the nearly impossible trek into Arizona can be accomplished. With dehydration being the greatest risk for migrants walking the deserts south of Phoenix and Tucson, water becomes a deciding factor in the survival of these travelers. By means of water stations provided by organizations and humanitarians, such as Humane Borders and Mike Wilson, and through water distribution by aircraft by attaching bottles to small parachutes, migrants have greater odds of survival.¹²¹ A recent study also names four organizations that provide humanitarian aid at Arizona’s international border: Humane Borders, Tucson Samaritans, Green Valley-Sahuarita Samaritans, and No More Deaths.¹²² Although some Americans believe these acts will encourage citizens from Mexico to enter the U.S. illegally, Mike Wilson defends these unselfish acts. As a Tohono O’odham Indian Nation resident, Mr. Wilson explains that migrants’ crossings had occurred before water was available and

¹¹⁸ V. Nelly Salgado de Snyder and Rodelio Díaz-Guerrero, “Enduring Separation: The Psychological Consequences of Mexican Migration to the United States,” in *Migration: Immigration and Emigration in International Perspective*, ed. Leonore Loeb Adler and Uwe Peter Gielen (Westport, CT: Praeger Publishers, 2003), 143.

¹¹⁹ Mathew and DeVivo, *Crossing Arizona*, 25:58.

¹²⁰ Mathew and DeVivo, 31:10.

¹²¹ Mathew and DeVivo, 4:46, 7:13, 9:00, 22:40.

¹²² Ricardo Gomez, Bryce Clayton Newell, and Sara Vannini, “Empathic Humanitarianism: Understanding the Motivations behind Humanitarian Work with Migrants at the US–Mexico Border,” *Journal on Migration and Human Security* 8, no. 1 (March 2020): 8, doi:10.1177/2331502419900764.

would continue even if these refilling stations were eliminated. The lack of resources would only add to the death toll, not deter migrants from making the trip into the U.S.

Many U.S. citizens residing near the U.S.-Mexico border policy space harbor diverse outlooks regarding the situation at the U.S.-Mexico border. Brownsville, TX and Arizona residents were interviewed about recent U.S. government actions and the results were varied. Some viewpoints were of confusion and support. Border residents are puzzled as to why the government perceives asylum seekers as threats to national defense, and they are willing to offer aid by providing shade for sun-relief, and food and water to refill their reserves.¹²³ Other U.S. residents at the borderlands share a conservative view of migrants crossing the border from Mexico. A militia group, Texas Minutemen, is made up of local residents who report illegal border findings to border patrol agents and law enforcement. They are aware that drug trafficking is a concern between the Brownsville port of entry and the Gulf of Mexico, and are willing to patrol these Texas regions to ensure migrants enter the country licitly through an entry control point.¹²⁴ Both views seem to share a common understanding which is best represented by Sean Carroll, Executive Director of the Kino Border Initiative. “People are concerned for their safety. They are concerned that there is a real lack of order. We need security. We need safety. But I don’t believe border security and respect for human dignity are mutually exclusive. We can do both.”¹²⁵

Viewpoints of U.S. citizens residing near the U.S.-Mexico border, regarding border security surveillance technologies, are more difficult to research, however recent events and organizations demonstrate what local inhabitants and democratic unions think of the employment of these privacy-invasive technologies. In 2017 a Texas resident removed a camera placed on his son’s property in Encinal, Texas, which belonged to the CBP, and his rationale for doing so centered around the sensor being an invasion of privacy due to

¹²³ Mathew and DeVivo, *Crossing Arizona*, 29:35.

¹²⁴ Jake Lefferman, Kristofer Rios, Matt Gutman, and Allie Yang, “How Residents of This US-Mexico Border Town Reacted to U.S. Troops, Migrants’ Influx,” ABC News, November 28, 2018, <https://abcnews.go.com/US/residents-us-mexico-border-town-reacted-us-troops/story?id=59454800>.

¹²⁵ Ed Lavandera, “The Migrant’s Trail: Hope, Horror and Hidden Cameras,” CNN, February 9, 2017, <https://www.cnn.com/2017/01/25/politics/border-series-arizona/index.html>.

unauthorized surveillance.¹²⁶ Expanding on these thoughts, the Fourth Amendment protects U.S. citizens “against unreasonable searches and seizures,” however the argument lies in deciding if these border imaging sensors are in fact reasonable.¹²⁷ The American Civil Liberties Union (ACLU) is an organization that focuses on the employment of surveillance systems at the U.S.-Mexico border and the infringement of Fourth Amendment rights. While being an advocate for Fair Information Practice Principles, the ACLU identifies the deployment of surveillance apparatus as much quicker “than our social, political, educational, or legal systems can react,” ultimately sidestepping populace consent until democratic mechanisms catch up to the post implemented systems.¹²⁸ Although border surveillance is a force multiplier for border agencies, this benefit alone is not worth undermining civil rights the U.S. was founded upon.

C. BORDER THREATS

To fully secure the U.S.-Mexico border from threats, the problem lies not only in the unmanned regions that invite illicit traffic into the country, but also at entry control points that manage vast amounts of commerce each year. To illustrate the amount of commercial traffic in this region, nearly 13-million trucks and container trucks crossed in 2019 at the U.S.-Mexico international border.¹²⁹ According to Harvey Pothier, former U.S. Customs Deputy Assistant Commissioner in the Office of Air Interdiction, searching every vehicle for illegal activity at the western side of the border would be an impossible task: “if we examined every truck for narcotics arriving into the United States along the

¹²⁶ Sidney Fussell, “Man Sues Feds After Finding Spy Camera on His Property and Refusing to Give It Back,” Gizmodo, February 22, 2018, <https://gizmodo.com/man-sues-feds-after-finding-spy-camera-on-his-property-1823229134>.

¹²⁷ U.S. Constitution, Amendment IV (ratification 1791).

¹²⁸ “Surveillance Technologies,” American Civil Liberties Union, accessed November 2, 2020, <https://www.aclu.org/issues/privacy-technology/surveillance-technologies>; “Fair Information Practice Principles,” International Association of Privacy Professionals, accessed November 2, 2020, <https://iapp.org/resources/article/fair-information-practices/>.

¹²⁹ “Border Crossing Entry Data,” Bureau of Transportation Statistics Database, accessed August 16, 2020, <https://explore.dot.gov/views/BorderCrossingData/Annual?isGuestRedirectFromVizportal=y&embed=y>. The entry data included all U.S.-Mexico border entry points and only counted empty trucks, container trucks, and full container trucks, totaling 12,960,914 vehicles.

Southwest border... Customs would back up the truck traffic bumper-to-bumper into Mexico City in just two weeks—15.8 days. In 15.8 days, there would be 95,608 trucks backed up into Mexico. That’s 1,177 miles of trucks.”¹³⁰ These border entry points, however, are not the only thoroughfares that challenge border agents. The desolate uninhabited regions of the U.S.-Mexico border also create a nearly unmanageable security concern for the homeland. According to the former U.S. Border Patrol Tucson Sector Chief Robert Gilbert, many of these regions are nearly inaccessible due to minimal roadways for vehicular access, mountainous terrain, and remoteness.¹³¹

D. POINTS OF ENTRY

The U.S.-Mexico border contains a total of 47 ports of entry, with each checkpoint having individual attributes that distinguish one border checkpoint from another.¹³² Due to the large number of ports of entry, this chapter only analyzes the highest transited entry points. Figure 15 displays the top five control points in the border region from most trafficked to least: San Ysidro, CA; El Paso, TX; Laredo, TX; Otay Mesa, CA; and Brownsville, TX. At each port of entry the governing organizations are focused on traffic capacity. Some entry points have recently modernized while others are planning for construction and expansion. Roughly 15-million people reside in counties along the U.S.-Mexico border, and surface trade between the U.S. and Mexico has increased from \$100 billion to \$400 billion in a 17 year span beginning in 1995.¹³³ Border traffic numbers are expected to rise because of these demands, which gives these ports of entry good reasons to streamline processing and increase traffic capacity.

¹³⁰ Peter Andreas, *Border Games: Policing the U.S.-Mexico Divide*, 76.

¹³¹ Geoffrey A. Boyce, “The Rugged Border: Surveillance, Policing and the Dynamic Materiality of the US/Mexico Frontier,” *Environment and Planning D: Society and Space* 34, no. 2 (April 2016): 249, <https://doi.org/10.1177/0263775815611423>.

¹³² “Land Ports of Entry Overview,” U.S. General Services Administration, last modified May 25, 2018, <https://www.gsa.gov/real-estate/gsa-properties/land-ports-of-entry-overview>.

¹³³ Chunhong Zhao, Jennifer Jensen, and Benjamin Zhan, “A Comparison of Urban Growth and Their Influencing Factors of Two Border Cities: Laredo in the U.S. and Nuevo Laredo in Mexico,” *Applied Geography* 79 (2017): 224; Geza Pesti and Rafael Manuel Aldrete, “Tracking Freight Traffic Trends at the U.S.-Mexico Border,” Texas A&M Transportation Institute, accessed September 10, 2020, <https://tti.tamu.edu/featured-project/tracking-freight-traffic-trends-at-the-u-s-mexico-border/>.

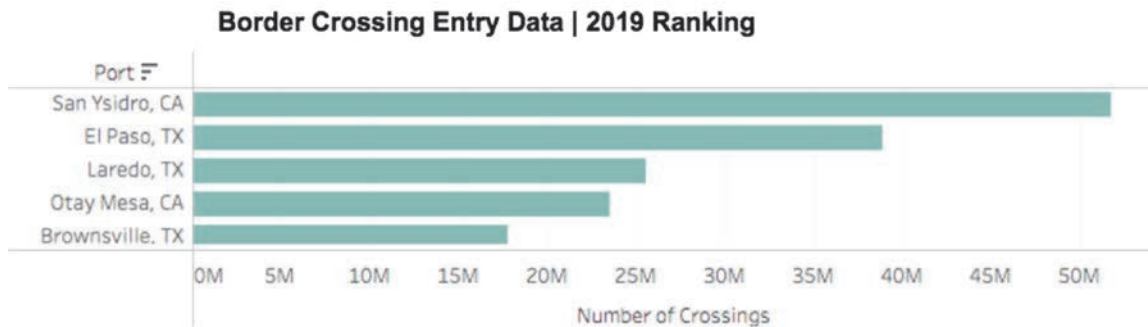


Figure 15. Top Five U.S.-Mexico Border Crossings of 2019.¹³⁴

The San Ysidro, California port of entry seen in Figure 16, is the most used land port of entry in the Western Hemisphere and the busiest land border crossing in the world. 31-million passenger vehicles cross this border point annually.¹³⁵ This number does not account for bus passengers or pedestrians, which increased the 2019 number by nearly 11-million border crossers.¹³⁶ The heavy flow of traffic between San Diego and Tijuana has become more streamlined due to a recent construction project at the San Ysidro crossing. The expansion project, totaling roughly \$741 million, added 36 pedestrian lanes, 12 northbound lanes (two being reversible), eight northbound vehicle processing lanes, 10 southbound lanes, eight southbound vehicle processing lanes, a transit center for public transportation access with pickup areas for taxis and private autos, an employee parking structure, and an administration building.¹³⁷ Srikrishnan associates this expansion with a recent estimate from the San Diego Association of Governments, which forecasts an 87

¹³⁴ Source: “Border Crossing Entry Data: 2019 Ranking,” Bureau of Transportation Statistics Database, accessed July 21, 2020, <https://explore.dot.gov/views/BorderCrossingData/CrossingRank?:isGuestRedirectFromVizportal=y&embed=y>. The entry data includes all transportation methods offered by the U.S. Department of Transportation (e.g., bus, pedestrian, personal vehicle, rail, train, and trucks). Database results were visually truncated to display only the top five border entry locations. The raw data from the U.S. Department of Transportation was not altered.

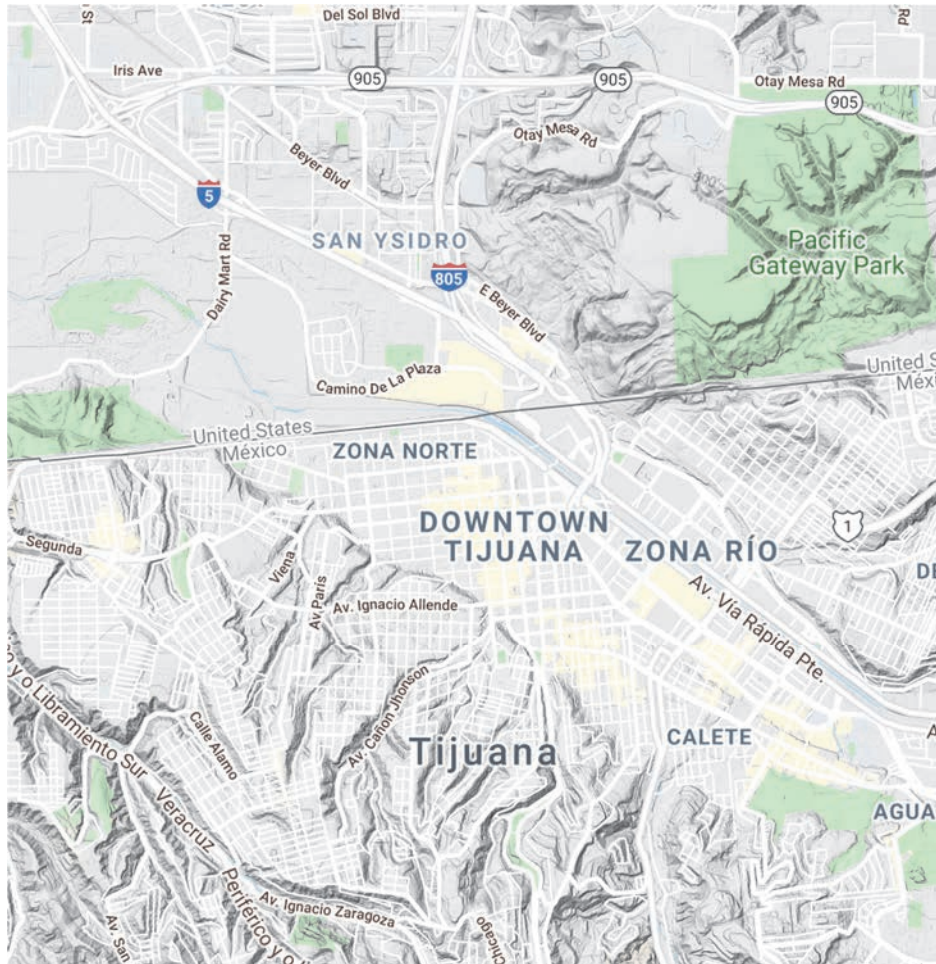
¹³⁵ “Fast Facts,” U.S. General Services Administration, accessed September 5, 2020, https://www.gsa.gov/cdnstatic/Fast_Facts.doc; Mark Peterson and Lakshmi Varanasi, “A Day at the Busiest Border Crossing in the World,” Politico Magazine, February 16, 2017, <https://www.politico.com/magazine/gallery/2017/02/photo-gallery-san-ysidro-california-us-mexico-border-000710?slide=0>.

¹³⁶ Bureau of Transportation Statistics Database, “Border Crossing Entry Data.” Only bus passengers and pedestrians for 2019 were used for the total of nearly 11 million.

¹³⁷ Maya Srikrishnan, “Border Report: 10 Years and \$741M Later, the Port of Entry Expansion is Done,” Voice of San Diego, December 23, 2019, <https://www.voiceofsandiego.org/topics/news/border-report-10-years-and-741m-later-the-port-of-entry-expansion-is-done/>.

percent increase in San Ysidro port of entry traffic by 2030. With these advancements improving traffic capacity, there is no sign of over-normal wait times in the near future. Furthermore, the U.S. has given commuters and travelers alternative methods to plan for heavy border traffic. Ballooning at the San Ysidro port of entry is less likely due to the use of information technology. With the creation of a U.S. Customs and Border Protection Border Wait Time Application, those travelling through the control point via bus, personal vehicle, or on foot can plan for wait times by viewing real-time information from their mobile device.¹³⁸ Between the port of entry's capacity expansion and through the use of handheld technologies, travelers can rest assured that the San Ysidro border crossing will continue to successfully handle the enormous volume of traffic for decades to come.

¹³⁸ Sandra Dibble, "CBP Launches New Border Wait Times App," The San Diego Union-Tribune, December 17, 2014, <https://www.sandiegouniontribune.com/news/border-baja-california/sdut-border-wait-times-san-ysidro-2014dec17-htmlstory.html>.



With 31 million crossings per year, this entry control point is the busiest land border crossing in the world.

Figure 16. San Ysidro-Zona Norte Border Map.¹³⁹

Figure 17 illustrates the world's largest international border metroplex, connecting El Paso, Texas to Ciudad Juárez, Chihuahua, which consists of three individual crossings, specifically Paso Del Norte, Stanton and Zaragoza.¹⁴⁰ Approximately \$25 billion in gross domestic product (GDP) and \$81.9 billion in total travelled through these border crossings

¹³⁹ Source: San Ysidro-Zona Norte border map, Google Maps, accessed July 22, 2020, <https://www.google.com/maps/@32.5187248,-117.081991,11.64z>.

¹⁴⁰ "International Bridges," City of El Paso, accessed September 7, 2020, <https://www.elpasotexas.gov/international-bridges>.

in 2018.¹⁴¹ Processing this quantity of commerce traffic, mass transit, and private autos, all totaling over 13 million in 2018, requires careful planning by the CBP.¹⁴² Like the San Ysidro-Tijuana crossing, El Paso is working to meet future requirements. On August 28, 2020, the House of Representatives passed an appropriations bill which includes \$700 million for El Paso's Bridge of the Americas to "increase processing capacity, enhance security, and facilitate trade and travel volumes."¹⁴³ The heavy volume and upcoming changes in capacity point to El Paso's focus on a secure and streamlined entry point.

One recent concern at the El Paso borderlands is the state's ability to handle a large influx in immigration. In 2019 the Homeland Security inspector general discovered that a CBP immigration holding facility in El Paso capable of handling only 125-detainees were holding up to 900-migrant detainees.¹⁴⁴ The fallout from this violation of human rights has sparked an increase in immigrant capacity in the region. The CBP has deployed temporary facilities to handle the numbers crossing the U.S.-Mexico border, which are placeholders for permanent locations in El Paso and Yuma that will increase detainee capacity by 1,800 people.¹⁴⁵ It is concerning that the detection of human rights violations was the motive for the agency's recent expansion of migrant holding capacity, but with temporary and long-term plans in place the city of El Paso will continue to serve as a location for those seeking refuge in the U.S.

¹⁴¹ "Port of Entry: El Paso; Impact to the Texas Economy, 2018," Comptroller Texas, accessed September 7, 2020, <https://comptroller.texas.gov/economy/economic-data/ports/el-paso.php>.

¹⁴² "Border Crossings - El Paso, TX," Arizona-Mexico Economic Indicators, accessed September 8, 2020, <https://azmex.eller.arizona.edu/border-crossings/other-bpoe/border-crossings-el-paso-tx>.

¹⁴³ "Congresswoman Escobar Announces \$700 Million for Modernization and Expansion of the Bridge of the Americas Land Port of Entry in FY 2021 Appropriations," Congresswoman Veronica Escobar: Press Release, August 28, 2020, [https://escobar.house.gov/news/documentsingle.aspx?DocumentID=459#:~:text=El%20Paso%2C%20Texas%2C%20August%2028%2C%202020&text=7617%2C%20Appropriations%20Bill%20for%20Fiscal,BOTA\)%20Land%20Port%20of%20Entry](https://escobar.house.gov/news/documentsingle.aspx?DocumentID=459#:~:text=El%20Paso%2C%20Texas%2C%20August%2028%2C%202020&text=7617%2C%20Appropriations%20Bill%20for%20Fiscal,BOTA)%20Land%20Port%20of%20Entry).

¹⁴⁴ Quinn Owen, "Nearly 900 Migrants Found at Texas Facility with 125-Person Capacity: DHS Watchdog," ABC News, May 31, 2019, <https://abcnews.go.com/Politics/900-migrants-found-texas-facility-125-person-capacity/story?id=63404988>.

¹⁴⁵ "New Temporary Facilities in Texas and Arizona Expand CBP Holding Capacity," U.S. Customs and Border Protection, August 6, 2019, <https://www.cbp.gov/newsroom/spotlights/new-temporary-facilities-expand-cbp-holding-capacity>.



As the largest border metroplex in the world, roughly \$25 billion in GDP travelled through this crossing in 2018.

Figure 17. El Paso-Ciudad Juárez Border Map.¹⁴⁶

The Laredo-Nuevo Laredo border crossing is an economic centerpiece in the Texas-Mexico junction, displayed in Figure 18, and has recently completed updates to increase traffic capacity. The Laredo port of entry was responsible for \$71.7 billion in GDP in 2018, and employed nearly 500,000 people during the same year.¹⁴⁷ The port of entry has recently undergone \$77 million in renovations at the Juarez-Lincoln International Bridge, providing expansions in vehicle inspection areas, public transit, employee office space, audio surveillance equipment, and is now using non-intrusive imaging technology for

¹⁴⁶ Source: El Paso-Ciudad Juárez border map, Google Maps, accessed July 22, 2020, <https://www.google.com/maps/@31.681577,-106.6161432,11z>.

¹⁴⁷ “Port of Entry: Laredo; Impact to the Texas Economy, 2018,” Comptroller Texas, accessed September 9, 2020, <https://comptroller.texas.gov/economy/economic-data/ports/laredo.php>.

inspecting vehicles and baggage.¹⁴⁸ The CBP states that the daily average of bus traffic at the Laredo port of entry has increased to 125-buses with roughly 5,600 passengers, which was a major consideration for the 2019 advancements. Moreover, a recent study has shown expedient urbanized growth in the region, more than that of U.S. megacities from 1985 to 2014.¹⁴⁹ The recent expansion and technologies focused on border-traffic management will continue to be useful as forecasts predict increasing vehicle and pedestrian traffic.



Being the economic flagship of Texas, in a single year the port of entry was responsible for \$71.7 billion in GDP and the employment of 500 thousand people.

Figure 18. Laredo-Nuevo Laredo Border Map.¹⁵⁰

¹⁴⁸ “Laredo Port of Entry Announces the Completion of the Juarez-Lincoln Bridge Modernization and Expansion Project,” U.S. Customs and Border Protection, September 16, 2019, <https://www.cbp.gov/newsroom/local-media-release/laredo-port-entry-announces-completion-juarez-lincoln-bridge>.

¹⁴⁹ Zhao, Jensen and Zhan, “A Comparison of Urban Growth and Their Influencing Factors of Two Border Cities: Laredo in the U.S. and Nuevo Laredo in Mexico,” 232.

¹⁵⁰ Source: Laredo-Nuevo Laredo border map, Google Maps, accessed July 22, 2020, <https://www.google.com/maps/@27.4937387,-99.6991059,10.19z>.

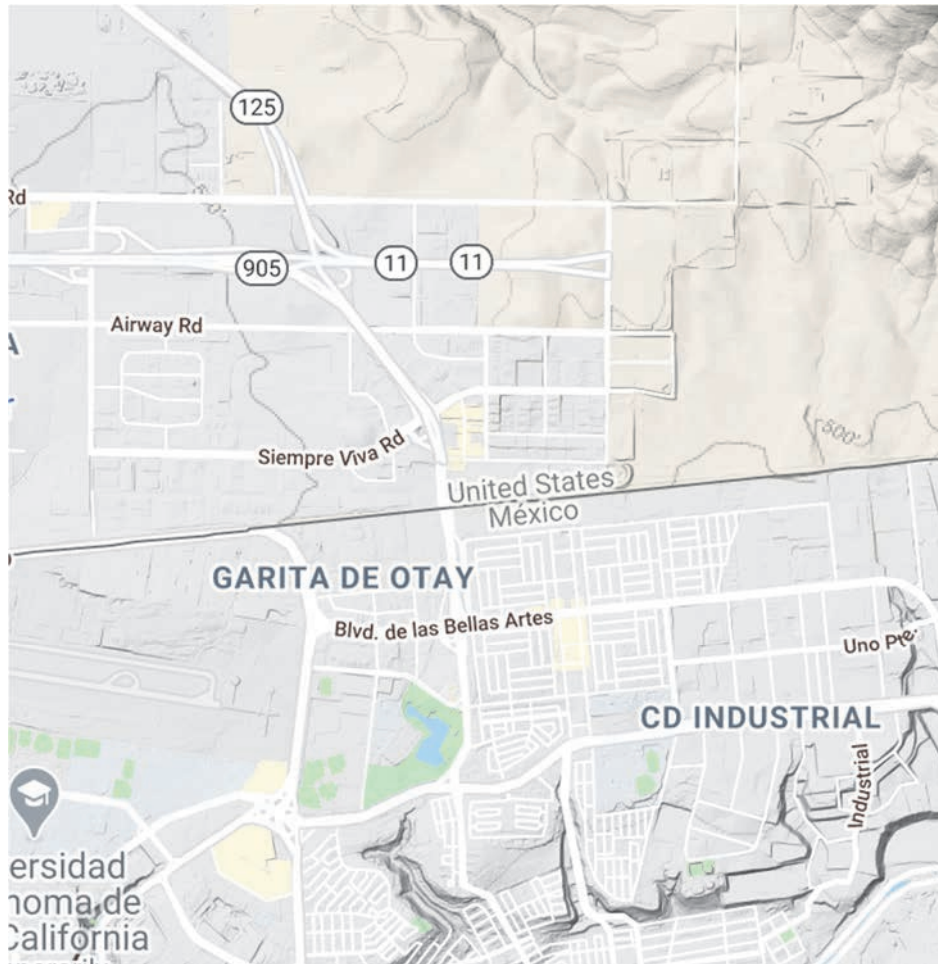
The border control point in Otay Mesa lies at the south-east outskirts of San Diego and joins the cities of Otay Mesa, CA and Garita De Otay, Baja California, as shown in Figure 19. Over the last decade, the commercial traffic volume has increased at this port of entry by 45 percent (combined with Tecate's border crossing) and facilitates "about 73 percent of the total trade moving through the California-Mexico border."¹⁵¹ As the workhorse for the west coast economy, the Otay Mesa-Garita De Otay port of entry is beginning an expansion project to invest in the critical border infrastructure. With an expected completion date of spring 2023, the \$137.2 million plan will incorporate double the current pedestrian lanes, increase commercial inspection areas by six, increase employee and visitor parking, and build stations for bus inspections and plant inspection stations funded by the Department of Agriculture.¹⁵² This expansion project is warranted when comparing average wait times in Otay Mesa to those in Laredo, TX, another economically-driven entry point. While the Laredo commercial lane wait times range from 44 to 78 minutes between the hours of 6am to 6pm, Otay Mesa's wait times within the same criteria range from 58 to 104 minutes.¹⁵³ Compared to the commercial traffic at each port of entry in 2019, Laredo's 2.3 million trucks to Otay Mesa approaching 1 million, the San Diego commercial hub needs a reformation before further delays contribute to ballooning.¹⁵⁴

¹⁵¹ "2018 San Diego-Baja California Border Crossing and Trade Highlights," SANDAG: Committee on Binational Regional Opportunities, May 7, 2019, <https://www.otaymesa.org/wp-content/uploads/2020/01/Border-Wait-Times.pdf>.

¹⁵² Sophia McCullough, "\$137M Otay Mesa Port of Entry Construction Project Begins," NBC 7 San Diego, May 26, 2020, <https://www.nbcsandiego.com/news/local/137m-otay-mesa-port-of-entry-construction-project-begins/2333043/>.

¹⁵³ "Laredo Bridges Border Crossing Wait Times & FAQ's," Wait Times Now, accessed September 9, 2020, <https://waittimesnow.com/borders/laredo/>; "Otay Mesa Border Crossing Wait Times & FAQ's," Wait Times Now, accessed September 9, 2020, <https://waittimesnow.com/borders/otay-mesa/>.

¹⁵⁴ Bureau of Transportation Statistics Database, "Border Crossing Entry Data." The U.S. Department of Transportation data used for the comparison included the total truck count in 2019 regardless of trailers being empty or full.



While sharing 73 percent of all California-Mexico trade, the Otay Mesa Land Port of Entry is becoming even busier with a recent 45 percent increase in commercial traffic.

Figure 19. Otay Mesa-Garita De Otay Border Map.¹⁵⁵

The Brownsville-Matamoros entry control point is responsible for \$15.4 billion of Texas' \$336 billion total imports and exports, and is represented in Figure 20.¹⁵⁶ The border crossing composition allowing these economic crossings are four bridges spanning the Rio Grande, specifically the Veterans International Bridge at Los Tomates, the Gateway International Bridge, the Brownsville & Matamoros Bridge, and the Brownsville

¹⁵⁵ Source: Otay Mesa-Garita De Otay border map, Google Maps, accessed July 22, 2020, <https://www.google.com/maps/@32.5382365,-117.0461449,11.9z>.

¹⁵⁶ "Brownsville, TX: Texas Border Facts Fall 2018," Texas Department of Transportation, accessed September 10, 2020, <http://ftp.dot.state.tx.us/pub/txdot/move-texas-freight/resources/fact-sheets/border/brownsville.pdf>.

West Rail Bridge.¹⁵⁷ Recent news at the Brownsville border crossing has described the use of smart border technology on pedestrian traffic. Biometric facial comparison technology was implemented by the CBP in February 2020, with the objective of positively identifying and photographing U.S. citizens and noncitizens entering the U.S.¹⁵⁸ Additionally, the Texas Department of Transportation has another upcoming project to modernize the port of entry. The state's Unified Transportation Program Plan for fiscal year 2021 is focusing on interstate infrastructure at the Texas-Mexico border region and has plans to expand Interstate 69 East, which winds south to the Veteran International Bridge.¹⁵⁹ Another local expansion project has allotted \$25.6 million to improve routes to the Port of Brownsville. According to Brownsville's Navigation District Chairman John Reed is "critical to the region's future success in domestic and international trade."¹⁶⁰ While this U.S.-Mexico port of entry does not have the highest number of crossings annually, the City of Brownsville continues to build a framework capable of handling larger volumes of vehicles and pedestrians.

¹⁵⁷ Texas Department of Transportation, "Brownsville, TX: Texas Border Facts Fall 2018."

¹⁵⁸ Erin Sheridan, "Facial Recognition to Check Pedestrians at Border Crossing," Government Technology, March 24, 2020, <https://www.govtech.com/products/Facial-Recognition-to-Check-Pedestrians-at-Border-Crossing.html>.

¹⁵⁹ "Unified Transportation Program 10-year Plan," Texas Department of Transportation, Minute Number 115814, Date Passed Aug 27 2020, <http://ftp.dot.state.tx.us/pub/txdot/tpp/utp/2021-utp.pdf>.

¹⁶⁰ "Construction for the South Port Connector begins on Monday," KVEO News, August 10, 2020, <https://www.valleycentral.com/news/local-news/construction-for-the-south-port-connector-begins-on-monday/>.



The entry control point uses four bridges to contribute \$15.4 billion to Texas' import and exports.

Figure 20. Brownsville-Matamoros Border Map.¹⁶¹

E. BORDER SECURITY TECHNOLOGY AND HOMELAND DEFENSE

To provide the USBP with the necessary tools to complete the mission of border security, numerous force-multiplying capabilities are employed in the rural U.S.-Mexico border regions. Border agents who defend the U.S. homeland have been employing USBP technologies to supplement the physical wall and the national boundary. A recent BBC News report by Nick Kwek, titled *The Tech That Helps Keep Watch Over the US-Mexico Border*, explains border surveillance technologies that are being used in the Nogales,

¹⁶¹ Source: Brownsville-Matamoros border map, Google Maps, assessed on July 22, 2020, <https://www.google.com/maps/@25.8499979,-97.524603,10.63z>.

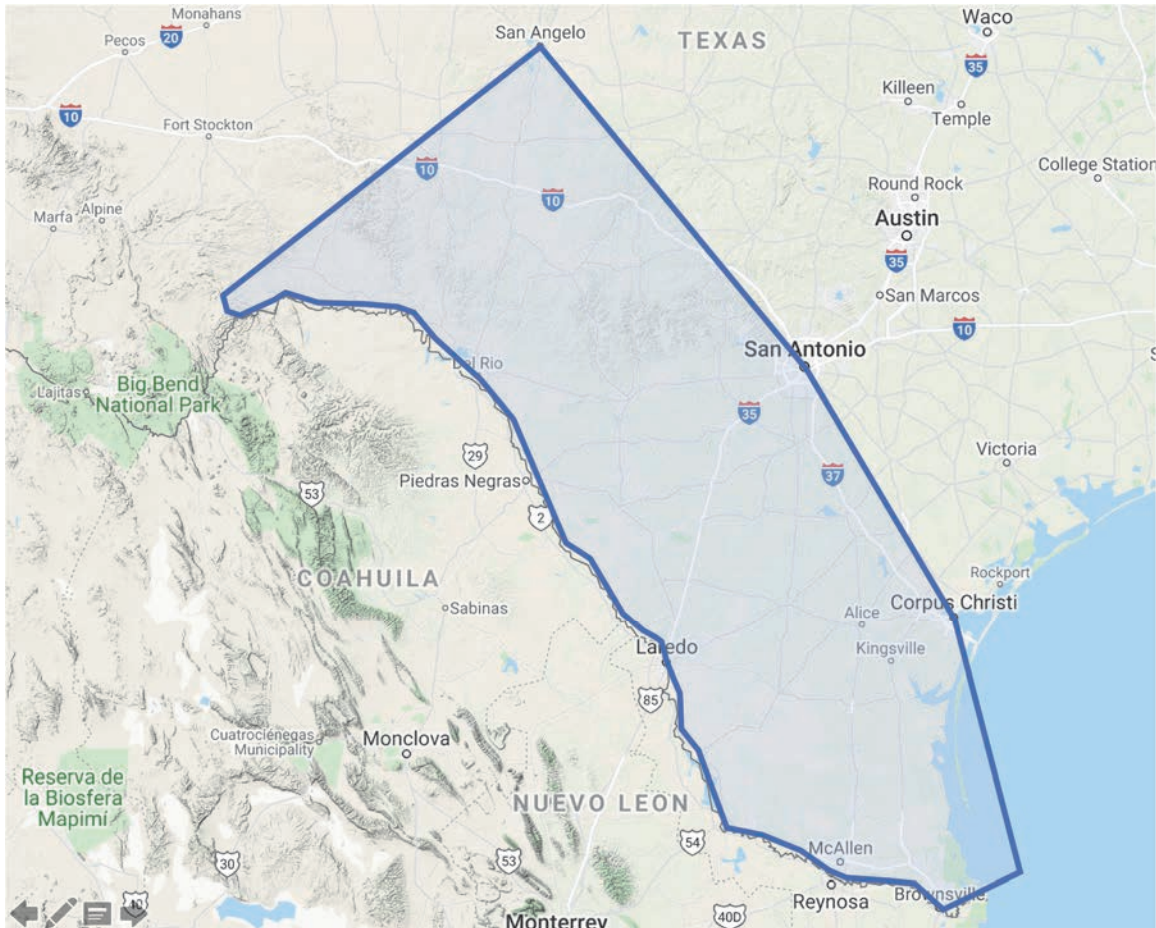
Arizona region. The USBP maintains border integrity through the use of fixed and mobile sensors and equipment. Fixed equipment includes Remote Video Surveillance Systems (RVSSs), buried motion sensors, and Integrated Fixed Towers (IFTs) outfitted with long-range video, thermal and infrared imaging, and radar.¹⁶² The report includes mobile equipment consisting of surveillance trucks with thermal range finders and laser pointers, and encrypted communications gear with GPS beacons for coordinate identification. These border security surveillance systems, or similar systems, are used throughout the U.S.-Mexico border along with Predator B drones, military aerostats, mobile surveillance vehicles, and surveillance aircraft, as seen in Figure 22.¹⁶³

With the following border security technologies being stationary or unable to travel large distances in short periods of time, the need for drone technology that can transit and monitor large swaths of the U.S.-Mexico border can assist border surveillance gaps and add redundancy to employed border technologies. To better understand UAV use at the United States' southern border, Gizmodo released a flight log database specifically for CBP drones, recording flights in the U.S.-Mexico border region for one year. Between June 2019 to June 2020, the CBP UAVs that were operational at the border included MQ-9 Predator B tail numbers CBP 108, CBP 110, CBP 113, CBP 213, and CBP 125.¹⁶⁴ Although the entirety of the border was monitored throughout the year, the border region along the Rio Grande River contained the most drone flights, specifically in the corridor shown in Figure 21.

¹⁶² "The Tech That Helps Keep Watch Over the US-Mexico Border," February 10, 2019, BBC News, video, 1:14, 1:43, 4:17, 5:28, 5:55, 7:10, <https://www.bbc.com/news/av/technology-47156146/the-tech-that-helps-keep-watch-over-the-us-mexico-border>.

¹⁶³ Boyce, "The Rugged Border: Surveillance, Policing and the Dynamic Materiality of the US/Mexico Frontier," 256.

¹⁶⁴ "Border Security Results," U.S. Department of Homeland Security, accessed November 7, 2020, <https://www.dhs.gov/border-security-results>.



From 2019 to 2020, this Texas region was the most transited by CBP drones than any other U.S.-Mexico border area.

Figure 21. U.S. Drone Use in Texas.¹⁶⁵

Beyond surveilling wide expanses of closed border, new border technologies can also expedite traffic at designated ports of entry. Programs such as Secure Electronic Network for Travelers Rapid Inspection (SENTRI) and FAST use technology to expedite the flow of traffic at designated ports of entry. SENTRI uses pre-clearance to allow low-risk travelers to transit into the U.S. from Mexico.¹⁶⁶ Upon approval by the CBP, the applicant receives a five year membership allowing him/her to traverse SENTRI primary

¹⁶⁵ Source: U.S. Department of Homeland Security, “Border Security Results,” Texas-Mexico border map, Google Maps, accessed November 8, 2020, <https://www.google.com/maps/@27.260641,-101.7682396,6.95z>.

¹⁶⁶ “Secure Electronic Network for Travelers Rapid Inspection,” U.S. Customs and Border Protection, last modified August 21, 2019, <https://www.cbp.gov/travel/trusted-traveler-programs/sentri>.

lanes into the U.S., which offers expedited entry for private vehicles.¹⁶⁷ Similarly, the FAST border program also uses pre-clearance processes, however it is designed for commercial vehicles entering U.S. land ports of entry.¹⁶⁸ Technologies that support these programs include electronic databases that store traveler biometrics and personally identifiable information, in order to verify a person's identity prior to permittance of border entry.

The electronic databases used for storing border crossing data are primarily cloud-based, and securing personally identifiable information stored in these databases is a major priority for the CBP. Four preventative measures are implemented to ensure the safekeeping of information. First, the transfer of data between the DHS system and the verification system occurs over a Federal Risk and Authorization Management Program-enabled cloud service requiring two-factor authentication and encryption in accordance with the "National Institute of Standards and Technology (NIST) Special Publication 800-144, Guidelines on Security and Privacy in Public Cloud Computing."¹⁶⁹ Second, CBP biometric templates are only recognized within the proprietary verification system software and create a photo archive unable to be reverse-engineered.¹⁷⁰ Third, 12-hours after identity verification "the CBP discards photos of U.S. Citizens and exempt aliens," and photos of in-range crossers can be archived in the DHS Automated Biometric Identification System if necessary, or deleted no-later than fourteen days.¹⁷¹ Fourth, facial image data is stored within a secure cloud topology and retaining such data by airport agencies or cruise liners is prohibited by the CBP.¹⁷²

¹⁶⁷ U.S. Customs and Border Protection, "Secure Electronic Network for Travelers Rapid Inspection."

¹⁶⁸ "Trusted Traveler Programs," U.S. Department of Homeland Defense, accessed November 7, 2020, [https://ttp.dhs.gov/?utm_source=google&utm_medium=google&utm_term=\(not%20provided\)&utm_content=undefined&utm_campaign=\(not%20set\)&gclid=undefined&dclid=undefined&GAID=2050407452.1599755646](https://ttp.dhs.gov/?utm_source=google&utm_medium=google&utm_term=(not%20provided)&utm_content=undefined&utm_campaign=(not%20set)&gclid=undefined&dclid=undefined&GAID=2050407452.1599755646).

¹⁶⁹ "Biometric Exit Frequently Asked Questions (FAQs)," U.S. Customs and Border Protection, last modified May 15, 2020, <https://www.cbp.gov/travel/biometrics/biometric-exit-faqs>.

¹⁷⁰ U.S. Customs and Border Protection, "Biometric Exit Frequently Asked Questions (FAQs)."

¹⁷¹ U.S. Customs and Border Protection.

¹⁷² U.S. Customs and Border Protection.

Facial comparison is one technology recently implemented at U.S.-Mexico land ports of entry to provide the CBP with tools to ensure the correct identities of each person that crosses the border into the U.S. In 2017, CBP facial recognition has been used at airports at departure gates, and in 2018 facial comparison technology was tested at land entry control points for pedestrians and vehicles.¹⁷³ Since the initial testing phase, the CBP is conducting biometric facial comparison pilot tests at five land ports of entry: Brownsville, TX, El Paso, TX, Laredo, TX, Nogales, AZ, and San Luis, AZ.¹⁷⁴ All five entry control points provide facial recognition for pedestrians on foot, but only the Brownsville, TX location is testing to provide biometric recording for passengers of vehicles. With cameras located in U.S. entry and exit lanes, the pilot program results in photos meeting standards 90 to 95 percent for travelers in the front seats, and for passengers in the back seats less than 50 percent.¹⁷⁵ More pilot programs that use vehicle facial recognition technology to continue to “examine how identity information gathered through the cameras could be used to assist CBP officers in conducting border crossing inspections of vehicles” and to assist in attaining entry-exit records at the U.S.-Mexico ports of entry.¹⁷⁶

Additionally, Nick Kwek describes two future technologies that are being tested to advance the USBPs situational awareness in the border region. The first is an air asset drone equipped with high resolution cameras for facial recognition, and the second is a mobile navigation tool enabling agents to track each other’s real-time location on a portable electronic device.¹⁷⁷ With these supplemental resources to aid the USBP’s agents, the relationship between technologies and the completion of Homeland Defense objectives demonstrates a coordinated effort.

¹⁷³ Rebecca Gambler, *Homeland Security: Facial Recognition-CBP and TSA are Taking Steps to Implement Programs, but CBP Should Address Privacy and System Performance Issues*, GAO-20-568 (Washington, DC: Government Accountability Office, 2020), 22.

¹⁷⁴ “Biometrics: Land,” U.S. Customs and Border Protection, accessed November 9, 2020, <https://www.biometrics.cbp.gov/land>.

¹⁷⁵ Gambler, *Homeland Security: Facial Recognition-CBP and TSA are Taking Steps to Implement Programs, but CBP Should Address Privacy and System Performance Issues*.

¹⁷⁶ Gambler.

¹⁷⁷ BBC News, “The Tech That Helps Keep Watch Over the US-Mexico Border,” 7:36, 7:46.

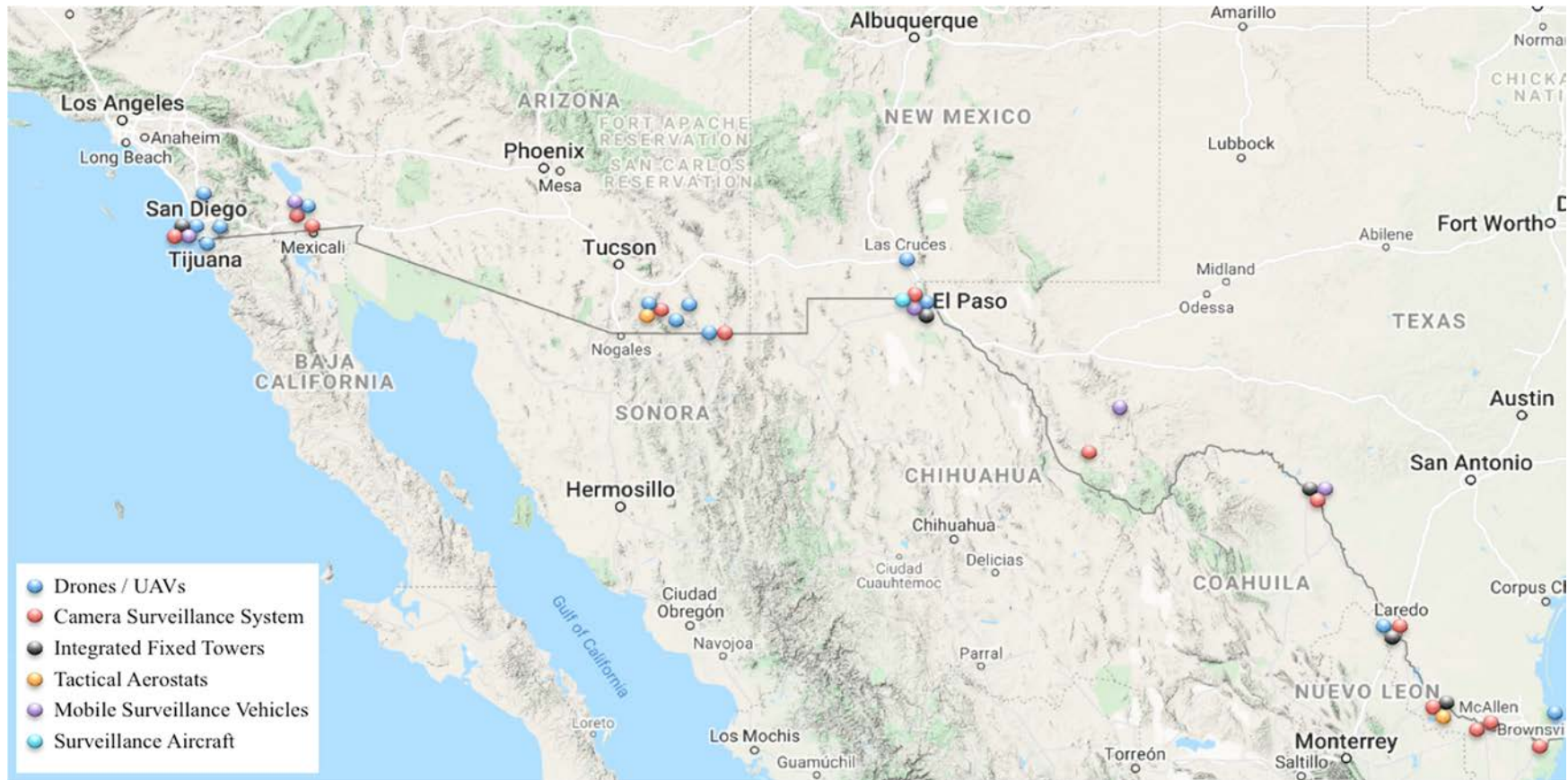


Figure 22. U.S.-Mexico Border Technology Employment Map.¹⁷⁸

¹⁷⁸ “Explore the Data: Surveillance Tech in Southwestern Border Communities,” Electronic Frontier Foundation, accessed October 28, 2020, <https://www.eff.org/aos-explore-border-data>; Source: U.S.-Mexico border map, Google Maps, assessed October 28, 2020, <https://www.google.com/maps/@31.2316799,-106.7252233,5.67z>.

F. MEASURING SUCCESS AT THE BORDER

Defining success in the U.S.-Mexico border is the first step in measuring the USBPs productivity at the southern border. With President Trump's push toward building a wall along the U.S-Mexico border front to stop illegal immigration, the success or failure of this initiative is the first place to start for this discussion. In theory, this border control measure looks promising in reducing illegal traffic along the U.S.-Mexico border, but in reality, the border-wall gives drug runners and traffickers a reason to find alternative methods into the U.S. Recent news examines the methods smugglers and traffickers are using to successfully enter the country undetected. The CBP and USBP are being bypassed through the use of tunnels, airborne smuggling, seaborne smuggling, legal ports of entry, postal and mailing services, cutting holes through the border wall, and sending contraband over the wall using catapults and trebuchets.¹⁷⁹ To create an attainable solution at these borderlands, other changes need to occur such as destination desirability and reexamining the process of citizenship to decrease the number of illegal crossings, which could ultimately increase the probability of detainees at the border being drug runners and traffickers. In a *Harvard International Review* article, Staff Writer Esteban Flores indicates that effective changes in law are needed to complement the U.S.-Mexico border wall, which would include "making it less desirable for immigrants to work in the United States, or towards making the path to citizenship easier."¹⁸⁰ The economic repercussions of repelling immigrants seeking employment would negatively impact the U.S. labor workforce, so the latter option would most likely be the best scenario.

Measuring the success of border surveillance technologies lead to a realization that surveillance equipment alone is unable to halt illicit cross border movements, but can assist

¹⁷⁹ Vanda Felbab-Brown, "Border Security and Comprehensive Immigration Reform," Brookings Institute, February 11, 2019, <https://www.brookings.edu/testimonies/border-security-and-comprehensive-immigration-reform/>; Nick Miroff, "Smugglers are Sawing Through New Sections of Trump's Border Wall," Washington Post, November 2, 2019, https://www.washingtonpost.com/national/smugglers-are-sawing-through-new-sections-of-trumps-border-wall/2019/11/01/25bf8ce0-fa72-11e9-ac8c-8eced29ca6ef_story.html; David Williams, "Drug-Slinging Catapult Seized on US-Mexico Border," CNN, February 15, 2017, <https://www.cnn.com/2017/02/15/us/marijuana-catapult-trnd/index.html>.

¹⁸⁰ Esteban Flores, "Walls of Separation: An Analysis of Three 'Successful' Border Walls," *Harvard International Review* 38, no. 3 (July 2017): 12.

in capturing criminals as a force multiplier that would otherwise go undetected. Between the 47 ports of entry lies a vast unmanned landscape that relies on surveillance technologies to monitor the border.¹⁸¹ Determining if these modern technologies have created border control success has become a topic of interest. A recent case study on the US-Mexico border examines the employment of border security technologies, and a determination was made that “a direct infusion of equipment or technologies has not been the pivotal factor in building a successful border management capability.”¹⁸² Surveillance technologies only serve as a tool to assist USBP detection of cross border movements, but do not substitute legislative processes that would alleviate the urgency of those traveling north into the U.S. (as discussed in the previous paragraph). In October 2018, the USBP conducted 474 apprehensions of border crossers through the aid of small unmanned aerial systems aircraft.¹⁸³ Ultimately, a six-foot-deep and 30-foot-tall border wall and surveillance technologies do not stop illegal U.S.-Mexico border crossings, but rather creates motivational obstacles for illicit actors to bypass.

G. REGIONAL STABILITY AT THE U.S.-MEXICO BORDER

An indirect relationship between both Mexico’s remittance inflow trends and the Mexican workforce’s economic inequality illustrate negative regional stability in the U.S.-Mexico’s borderlands. One method of determining stability is to analyze funds being sent to loved ones in Mexico. Figure 23 illustrates an upward trend in remittance flows when comparing this data to Mexico’s largest remittance contributor, the U.S., which sent approximately 25 of 25.7-billion dollars of funds in 2014 alone.¹⁸⁴ There are hundreds of reasons for sending funds back to Mexico, but one that cannot be ignored is that many

¹⁸¹ U.S. General Services Administration, “Land Ports of Entry Overview.”

¹⁸² Daniel M. Gerstein, Anthony Adler, Aaron C. Davenport, Beth Grill, Amanda Kadlec, and William Young, *Managing International Borders: Balancing Security with the Licit Flow of People and Goods*, PE-290-RC (Santa Monica, CA: RAND, 2018), 23, JSTOR.

¹⁸³ Shirin Ghaffary, “The “Smarter” Wall: How Drones, Sensors, and AI are Patrolling the Border,” Vox News, last modified February 7, 2020, <https://www.vox.com/recode/2019/5/16/18511583/smart-border-wall-drones-sensors-ai>. This data is located in the Surveillance Drones Big and Small section.

¹⁸⁴ Dilip Ratha, Sonia Plaza, and Ervin Dervisevic, *Migration and remittances Factbook 2016* (Washington, D.C.: The World Bank, 2016): 12, 182, <https://doi.org/10.1596/978-1-4648-0319-2>.

migrants do not plan on living in the U.S. for an extended period of time. Often these travelers do not find the U.S. a stable nation-state for long-term prosperity, and would rather return home to their original place of security. Similarly, the environment at the U.S.-Mexico border is anything but stable when examining the social relationships between both nations. Although upper-echelons of government have made pacts in the form of bilateral and multilateral agreements, such as NAFTA, the Merida Initiative, and the United States-Mexico-Canada Agreement, middle and lower socioeconomic classes near the borders are not seeing the benefits. While globalization has continued to push billions of dollars of product each year over the U.S.-Mexico border, these major corporate deals have not trickled down to the working classes in Mexico, or the 60 percent of Mexican workers that create the informal economy.¹⁸⁵ That lack of economic equality is not directly tied to border security technologies, but is a problem worth mentioning due to its direct impact on U.S.-Mexico borderland stability.

¹⁸⁵ Elizabeth Tinoco, "Informal Employment in Mexico: Current situation, Policies and Challenges," *International Labour Organization*, 2014, https://www.ilo.org/wcmsp5/groups/public/---americas/---ro-lima/documents/publication/wcms_245889.pdf.

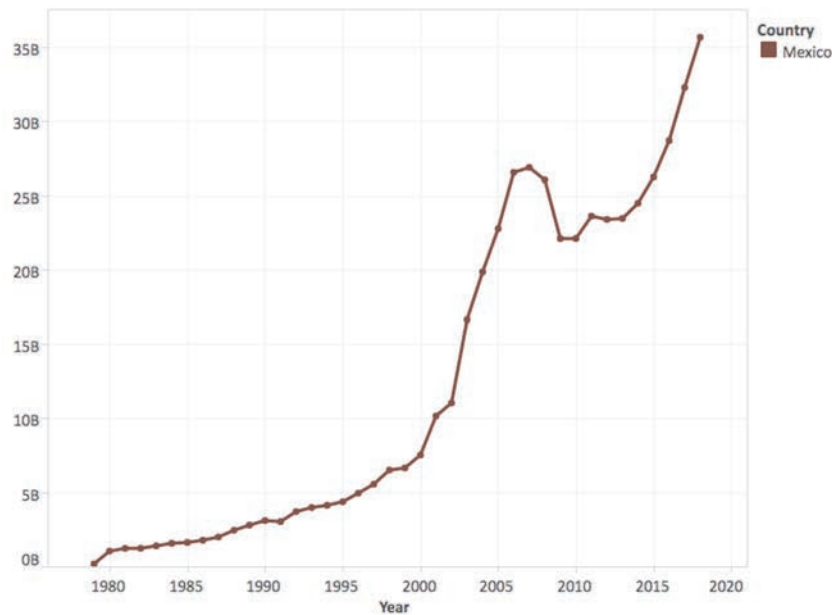


Figure 23. Mexico's Remittance Inflow trends from 1970 to 2018 in USD.¹⁸⁶

H. CONCLUSION

Tension and disagreements between Mexico and the U.S. during the Mexican-American war helped form the modern border, and contemporary relations between the two nations remain similar. Through implementation of national border policies that hardened the U.S.-Mexico border during the 1990s and through the establishment of NAFTA, Mexico has experienced physical and economic hostility from the U.S. One byproduct of U.S. focus on border security is increased migrant travel in regions of southern Arizona and the Baboquivari trail in the Tohono O'odham Indian Nation. The harsh environments of these areas result in high mortality rates, leaving those who survive the crossing often requiring humanitarian aid from U.S. citizens. U.S. emphasis on homeland security has focused on stopping the illicit flow of narcotics, human trafficking, and illegal migration. The current U.S. administration has shown a sense of mistrust and carelessness in regard to the Mexican people, which is evident by the amounts of money

¹⁸⁶ Source: Migration Policy Institute, "Remittance Trends over Time: Mexico," accessed June 13, 2020, <https://www.migrationpolicy.org/programs/data-hub/global-remittances-guide>.

the U.S. pours into border integrity.¹⁸⁷ While border infrastructure continues to be a major concern for U.S. security and traffic capacity, recent border security initiatives, including construction of “The Wall,” lack policy changes to ease the migrant push from the United States’ southern neighbors. These policy failures have contributed to a lack of regional stability at the U.S.-Mexico border, and is illustrated through remittance flows and economic inequality. Border surveillance technologies are helping border agencies achieve their goal of reducing illegal crossings, however they do not equate to stability at the U.S.-Mexico borderlands.

¹⁸⁷ Mark Hugo Lopez, Ana Gonzalez-Barrera, and Jens Manuel Krogstad, “More Latinos Have Serious Concerns About Their Place in America Under Trump,” Pew Research Center, October 25, 2018, <https://www.pewresearch.org/hispanic/2018/10/25/more-latinos-have-serious-concerns-about-their-place-in-america-under-trump/>; Patrick J. McDonnell, “Trump vs. Lopez Obrador: Two Very Different Leaders Face Off Over Tariffs,” Los Angeles Times, June 5, 2019, <https://www.latimes.com/world/mexico-americas/la-fg-mexico-amlo-trump-20190605-story.html>; Eugene Scott, “Trump’s Most Insulting — and Violent — Language is Often Reserved for Immigrants,” The Washington Post, October 2, 2019, <https://www.washingtonpost.com/politics/2019/10/02/trumps-most-insulting-violent-language-is-often-reserved-immigrants/>.

IV. U.S.-CANADA CASE STUDY

A. BACKGROUND OF REGION

Three events during the 18th and 19th centuries drove the origin of the lower 48 U.S.-Canada border. The first U.S.-Canada border was created at the conclusion of the American War of Independence. The signing of the Treaty of Paris on September 3, 1783 gave the U.S. land that bordered Canada, including the northern territories of New England and the Northwest Territory, which encompassed the modern-day regions of Michigan, Minnesota, and Wisconsin.¹⁸⁸ Second, the 1803 Louisiana Purchase from France provided the U.S. with the northern border regions known as present day North Dakota, Montana, and Idaho.¹⁸⁹ Finally, the Oregon Treaty of June 15, 1846 created the final separation between the U.S. and British Columbia in the regions of Washington and Idaho.¹⁹⁰ These three events created the 3,987 mile boundary between the U.S. and Canada.¹⁹¹

A series of natural and artificial borders make up the U.S.-Canada topographical boundary. Beginning at the Pacific Ocean, the international border splits Vancouver Island and northern Washington at the Salish Sea and the Haro Strait. This natural border becomes artificial approximately 20 miles south of Vancouver, where it spans from Washington State into Minnesota's Lake of the Woods. The border then runs north roughly 26 miles and transforms into a natural border through the Lake of the Woods following the Rainy River in northern Minnesota. Following a series of lakes and rivers, the border then splits four of the five Great Lakes, specifically Lake Superior, Lake Huron, Lake Erie, and Lake Ontario. After the lakes the international boundary splits the St. Lawrence River and

¹⁸⁸ "Treaty of Paris," History Channel, last modified September 9, 2019, <https://www.history.com/topics/american-revolution/treaty-of-paris>.

¹⁸⁹ The Jefferson Monticello, "The Louisiana Purchase."

¹⁹⁰ "HST 325 - U.S. Foreign Relations to 1914 (MSU): Oregon Treaty 1846," Michigan State University, accessed October 3, 2020, <http://projects.leadr.msu.edu/usforeignrelations/exhibits/show/manifest-destiny/oregon-treaty-1846>.

¹⁹¹ United States Census Bureau, U.S. Census Bureau, Statistical Abstract of the United States: 2011: 223 (Washington, DC: U.S. Department of Commerce, 2011), <https://www.census.gov/library/publications/2010/compendia/statab/130ed.html>.

becomes artificial once it spans west to east in upstate New York and northern Vermont. Lastly, through a series of natural and artificial transitions, the border divides Quebec and New Brunswick from Vermont and Maine until terminating at the North Atlantic Ocean.

Canada's sovereign territories, in reference to the U.S. mainland, create geographic and political interests that the U.S. is focused upon, specifically national security and economic partnerships. The nearly 4,000 mile U.S.-Canada border with 133 land ports of entry represents a vulnerability to the U.S., and two events occurring in the 1990s illustrate this concern.¹⁹² In 1993 terrorists originating from Canada entered the U.S. and targeted the North Tower of the World Trade Center, and in 1999 a terrorist carrying explosives entered the U.S from Canada with plans to bomb the Los Angeles International Airport.¹⁹³ Since these events and the attacks on 9/11, border security agreements between the U.S. and Canada, like the U.S. and Canada Smart Border Declaration of 2001, have contributed to stronger U.S. national security. The U.S.-Canada border is also responsible for maintaining economic relations of both nation-states, specifically at border cities. For instance, U.S. and Canada's Niagara Falls City illustrates a binational linkage through reliance on tourism in the region, while other twin cities such as Detroit, Buffalo, and Blaine cater to commercial industry.¹⁹⁴ The U.S.-Canada international border contains a two-thirds concentration of traffic at four cross-border bridges in south Ontario, demonstrating a geopolitical focus in urban regions.¹⁹⁵

Since the attacks on September 11, 2001, the U.S.-Canada border has witnessed tighter security which has negatively impacted the economic sector in wait times, annual costs, and policy-influenced incentives. In border regions such as Ontario and Michigan,

¹⁹² Todd Hataley, "Catastrophic Terrorism at the Border: The Case of the Canada-United States Border," *Homeland Security Affairs Journal*, September 1, 2007, <https://www.hsaj.org/articles/137>.

¹⁹³ Adelman Howard, "Canadian Borders and Immigration Post 9/11," *The International Migration Review* 36, no. 1 (April 2002): 20.

¹⁹⁴ Jan Buursink, "The Binational Reality of Border-Crossing Cities," *GeoJournal* 54, no. 1 (January 2001): 10–2. <https://doi.org/10.1023/A:1021180329607>; Misak Avetisyan, Nathaniel Heatwole, Adam Rose, and Bryan Roberts, "Competitiveness and Macroeconomic Impacts of Reduced Wait Times at U.S. Land Freight Border Crossings," *Transportation Research. Part A, Policy and Practice* 78 (August 2015): 87–9, <https://doi.org/10.1016/j.tra.2015.04.027>.

¹⁹⁵ Hataley, "Catastrophic Terrorism at the Border: The Case of the Canada-United States Border."

the aftermath of 9/11 created a time-delay for commerce traffic due to a lack in a customs union which resulted in longer wait times due to customs checks for each vehicle crossing the border.¹⁹⁶ The hardened border security “led to longer delays, especially for traffic passing from Canada into the U.S. Some estimates placed the annual cost of delays as high as \$10 billion dollars.”¹⁹⁷ This average accounts for delays in not only commercial vehicles but the eventual monetary loss of the industrial sector due to delays in both shipping and manufacturing. The attacks of September 11, 2001, also spurred a U.S. reaction that focused on many aspects of homeland security in the U.S.-Canada border, while placing less emphasis on economic border traffic. The U.S. and Canada Smart Border Declaration was signed on December 12, 2001, and gave rise to the first smart border. The objective of the Presidential declaration was to create a secure border that supports the flow of cross-border traffic.¹⁹⁸ The measures ranged from securing the flow of people and goods, supporting infrastructure, and facilitating interagency operations. One recent study determined that policies affecting cross-border transportation were not efficiently utilized by corporations and businesses based on region, industry, and size.¹⁹⁹ Those that had higher economic stakes were more likely to implement programs such as FAST to bridge the business gaps created by increased border securities. National security has become the concentration at the U.S.-Canada border, and cross-border economics are still adapting to the security standards.

Contemporary U.S.-Canada relations post-9/11 have focused on bilateral agreements to strengthen the international border security while stabilizing the economy. On February 4, 2011, President Obama and Prime Minister Harper signed the Beyond the

¹⁹⁶ William P. Anderson, “Public Policy in a Cross-Border Economic Region,” *International Journal of Public Sector Management* 25, no. 6/7 (August 2012): 492–99, <https://doi.org/10.1108/09513551211260694>.

¹⁹⁷ Anderson, “Public Policy in a Cross-Border Economic Region,” 494.

¹⁹⁸ “US and Canada Smart Border Declaration (2001),” Legislation Online, accessed October 5, 2020, <https://www.legislationline.org/documents/id/7543>.

¹⁹⁹ Matthew J. Smith, Sayan Basu Ray, Aaron Raymond, Micah Sienna, and Meredith B Lilly, “Long-Term Lessons on the Effects of Post-9/11 Border Thickening on Cross-Border Trade Between Canada and the United States: A Systematic Review,” *Transport Policy* 72 (April 2018): 207, <https://doi.org/10.1016/j.tranpol.2018.03.013>.

Border Action Plan to unify security and economics at the shared international border.²⁰⁰ To achieve a combined security front both governments have collaborated through two binational organizations focused on U.S.-Canada border security, specifically the Border Enforcement Security Taskforces (BESTs) and Integrated Border Enforcement Teams (IBETs).²⁰¹ Each organization contributes differently to international border security. While BEST, led by the U.S. Immigration and Customs Enforcement (ICE), aims to stop Transnational Criminal Organizations at land and sea borders, including the U.S.-Canada borderlands, IBET operations combine five agencies from both the U.S. and Canada to combat national security threats against both countries at specific ports of entry.²⁰² The declaration has also focused on facilitating trade and growth in economics and jobs. To increase commerce, a truck cargo pre-inspection pilot began on June 18, 2013, and has successfully implemented procedures allowing for the CBP to pre-inspect south-bound commercial traffic before arriving into the U.S.²⁰³ Furthermore, the pilot program concentrated at the Peace Bridge Crossing at the Buffalo-Fort Erie border “where cross-border travel and trade is essential.”²⁰⁴ The pilot became the precursor to the U.S.-Canada Agreement on Land, Rail, Marine, and Air (LRMA) Transport Preclearance, creating the first full preclearance system for cross-border traffic between each nation by allowing screening agents into the other nations jurisdiction for pre-screening purposes.²⁰⁵

²⁰⁰ White House, Declaration by President Obama and Prime Minister Harper of Canada - Beyond the Border (Washington, DC: Office of the Press Secretary, 2011), <https://obamawhitehouse.archives.gov/the-press-office/2011/02/04/declaration-president-obama-and-prime-minister-harper-canada-beyond-bord>.

²⁰¹ “Fact Sheet: Beyond the Border United States – Canada Law Enforcement Cooperation,” U.S. Department of Homeland Security, December 6, 2011, <https://www.dhs.gov/news/2011/12/06/fact-sheet-beyond-border-united-states-canada-law-enforcement-cooperation>.

²⁰² “Border Enforcement Security Task Force (BEST),” U.S. Immigration and Customs Enforcement, last modified April 29, 2020, <https://www.ice.gov/best>; U.S. Department of Homeland Security, “Fact Sheet: Beyond the Border United States – Canada Law Enforcement Cooperation.”

²⁰³ “Phase 1 of US/Canada Truck Cargo Pre-inspection Pilot Concludes,” Homeland Security Today, January 3, 2014, <https://www.hstoday.us/channels/global/phase-1-of-us-canada-truck-cargo-pre-inspection-pilot-concludes/>.

²⁰⁴ “Canada and the United States Announce Phase II of Truck Cargo Pre-Inspection Pilot,” Congressman Brian Higgins of New York, February 24, 2014, <https://higgins.house.gov/media-center/press-releases/canada-and-the-united-states-announce-phase-ii-of-truck-cargo-pre>.

²⁰⁵ “United States and Canada Implement Preclearance Agreement,” U.S. Department of Homeland Security, August 15, 2019, <https://www.dhs.gov/news/2019/08/15/united-states-and-canada-implement-precleanance-agreement>.

B. BORDER THREATS

Although the U.S.-Canada border is a relatively stable region, at the beginning of the 1950s Canada relied on the U.S. for protection from advanced external threats, specifically the occupation of Canada by external communist powers. During the cold war era, Canada depended on U.S.-led North American defenses “to ensure national control over the Canadian territory.”²⁰⁶ Without Canada’s territorial sovereignty, the border immediately becomes a vulnerability to U.S. homeland security if foreign communist powers occupied our northern flank, which explains why the U.S. favors hemispheric protection. Moreover, smart border vulnerabilities are also a major concern for U.S.-Canada border security. If a hostile state actor or group successfully penetrates the multiple tiers of border security, evidence of security failure would poison the work and cooperation between Canada and the U.S. in the security and economic sector, possibly leading to a governmental blame-game between nations.²⁰⁷ Reforms would then begin. Scenarios that would threaten the borderlands the most are international threats that can apply pressure at the international border if infiltration is successful.

C. POINTS OF ENTRY

The lower 48 U.S.-Canada border contains 133 land ports of entry along the 39th parallel, all with individualities that distinguish themselves from each other.²⁰⁸ Similar to the previous chapter, the large number of entry points results in the analysis of only the top five transited border entry points, specifically Buffalo-Niagara Falls, NY; Detroit, MI; Blaine, WA; Port Huron, MI, and Champlain-Rouses Point, NY. These ports of entry are focused on trade efficiency and the safe transportation of goods, while maintaining a secure border region free of homeland threats.

²⁰⁶ Donald Barry, and Duane Bratt, “Defense Against Help: Explaining Canada-U.S. Security Relations,” *American Review of Canadian Studies* 38, no. 1 (March 2008): 63–89, <https://doi.org/10.1080/02722010809481821>.

²⁰⁷ Jez Littlewood, “Accountability of the Canadian Security and Intelligence Community Post 9/11,” in *Democratic Oversight of Intelligence Services*, ed. Daniel Baldino (Annandale, New South Wales: Federation Press, 2010), 93.

²⁰⁸ Hataley, “Catastrophic Terrorism at the Border: The Case of the Canada-United States Border.”

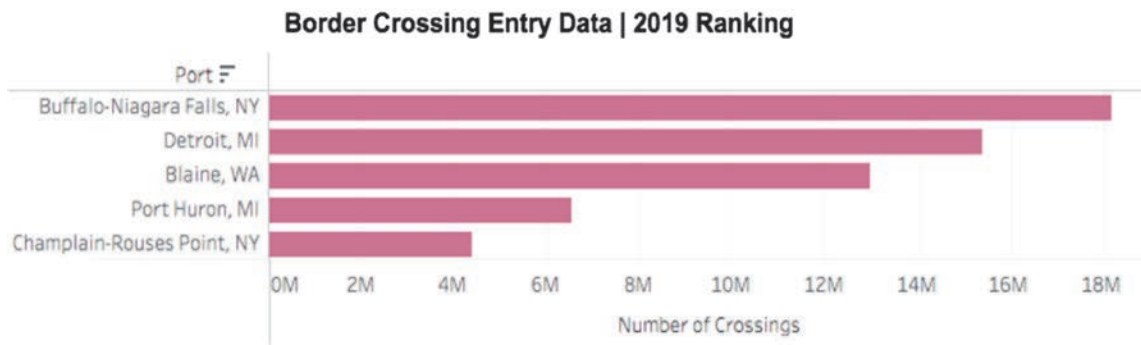


Figure 24. Top Five U.S.-Canada Border Crossings of 2019.²⁰⁹

The Niagara Falls CBP border station is responsible for 73 miles of borderlands in upstate New York.²¹⁰ With Canadian and U.S. agencies responsible for nearly six million crossings in 2019, consisting of buses, personal vehicles, and trucks, the Buffalo-Niagara Falls port of entry accounts for the most border crossings along the U.S.-Canada border.²¹¹ The Niagara River separates the two countries and forces vehicles to cross either the Peace Bridge, the Lewiston-Queenston Bridge, the Whirlpool Rapids Bridge, or the Rainbow Bridge.²¹² Rail bridges are the only alternative to crossing this land port of entry. A major benefit of having several methods to cross this international boundary is the reduction of entry ballooning. If routes become congested, an alternate bridge is only 30 minutes away. However, one vulnerability at this port of entry is the growing tourism industry, which accounts for 8 million annual visitors at Niagara Falls alone.²¹³ From 2013 to 2018, hotel

²⁰⁹ Source: Bureau of Transportation Statistics Database “Border Crossing Entry Data: 2019 Ranking.” The entry data includes all transportation methods offered by the U.S. Department of Transportation (e.g., bus, pedestrian, personal vehicle, rail, train, and trucks). Database results were graphically altered to display only the top five border entry locations. The raw data from the U.S. Department of Transportation was not altered.

²¹⁰ “Niagara Falls Station,” U.S. Customs and Border Protection, last modified June 5, 2020, <https://www.cbp.gov/border-security/along-us-borders/border-patrol-sectors/buffalo-sector-new-york/niagara-falls-station>.

²¹¹ Bureau of Transportation Statistics Database, “Border Crossing Entry Data.” The U.S. Department of Transportation 2019 total accounts for only buses, personal vehicles, and trucks regardless of trailers being empty or full.

²¹² “Peace Bridge Facts: The Bridge – Description and Status,” The Peace Bridge, accessed October 13, 2020, <https://www.peacebridge.com/index.php/about-us-sp-1874923374/peace-bridge-facts2>.

²¹³ “10 Fun Facts About Niagara Falls USA,” Niagara Falls USA, accessed October 13, 2020, <https://www.niagarafallsusa.com/blog/10-fun-facts-about-niagara-falls-usa/>.

purchasing increased by \$40 million, tourism spending rose by 11 percent, and tourism employment grew by 10 percent, creating 33 thousand jobs in Erie County.²¹⁴ If this trend continues in the Buffalo-Niagara Falls region, a recommendation to the local governments of Canada and the U.S., specifically the Regional Municipality of Niagara in Ontario and Niagara County in New York, should consider increasing traffic capacity to address future traffic congestion.

Uniquely, the Buffalo-Niagara Falls region, shown in Figure 25, has two sets of border cities that create the region's cultural identity from Canadian and U.S. perspectives and supports economic links between the twin cities. The most popular border city of the two is Niagara Falls, Canada and Niagara Falls, U.S. The first noticeable difference between the cities is population; Niagara Falls, Canada has 88 thousand and Niagara Falls, U.S. has 47 thousand residents.²¹⁵ One reason for the population disparity is due to each nation's adoption of industry in their respective Niagara Falls. While Canada focused on the tourism industry in Niagara Falls, the U.S.-supported industry in Niagara Falls was outsourced beginning in the 1950s, due to more competitive wages overseas.²¹⁶ While modern-day Ontario still focuses solely on the tourism industry in Niagara Falls, the New York side has begun rebuilding their industrial sector while also competing with Canadian tourism.²¹⁷

The cities of Buffalo, NY and Fort Erie, Ontario, which lie upriver of Niagara Falls, create the second set of border-cities at the Buffalo-Niagara Falls border crossing. The population of Buffalo, NY is 891 thousand, and Fort Erie, Ontario sits at 14 thousand

²¹⁴ Brian Hayden, "Visit Buffalo Niagara Caps Off Record Year in Tourism," Visit Buffalo Niagara, April 4, 2019, <https://www.visitbuffaloniagara.com/visit-buffalo-niagara-caps-off-record-year-in-tourism/>.

²¹⁵ "Niagara Region Population 1996–2016," Niagara Region, accessed October 13, 2020, <https://www.niagararegion.ca/about-niagara/statistics/population-and-maps.aspx>; "QuickFacts: Niagara Falls City, New York," U.S. Census Bureau, accessed October 13, 2020, <https://www.census.gov/quickfacts/niagarafallscitynewyork>.

²¹⁶ Thomas Stieve, "National Identity in Niagara Falls, Canada and the United States," *Journal of Economic & Social Geography* 96, no. 1 (February 2005): 9, <https://onlinelibrary.wiley.com/doi/epdf/10.1111/j.1467-9663.2005.00435.x>.

²¹⁷ Sharmistha Bagchi-Sen, "Product Innovation and Competitive Advantage in an Area of Industrial Decline: The Niagara Region of Canada," *Technovation* 21, no. 1 (January 2001): 47. [https://doi.org/10.1016/S0166-4972\(00\)00016-X](https://doi.org/10.1016/S0166-4972(00)00016-X); "Niagara Falls, New York – Turning to Tourism and More," Business View Magazine, February 8, 2017, <https://businessviewmagazine.com/niagra-falls-new-york/>.

inhabitants.²¹⁸ This region was once a continuous battlefield during the War of 1812, and later became a cornerstone of the underground railroad between 1840 and 1860.²¹⁹ The modern-day region is now a frequently travelled corridor with an emphasis on traffic throughput over the Niagara River. In 1999, the Peace Bridge implemented a program called the Commercial Vehicle Processing Center, which was created to screen cargo in Canada destined for the U.S.²²⁰ The program was successful because it increased commercial clearance rates by over 20 percent. Since 2009, the bridge has been responsible for five to six million crossings annually.²²¹ However, this transportation success has not helped the city of Buffalo recover from its economic woes. With a high unemployment rate, a decreasing population, high crime rates, and a lacking education system, Buffalo, NY is not an enticing location for entrepreneurs or established companies to reside in. The consequence is Buffalo's continuous economic slump.²²²

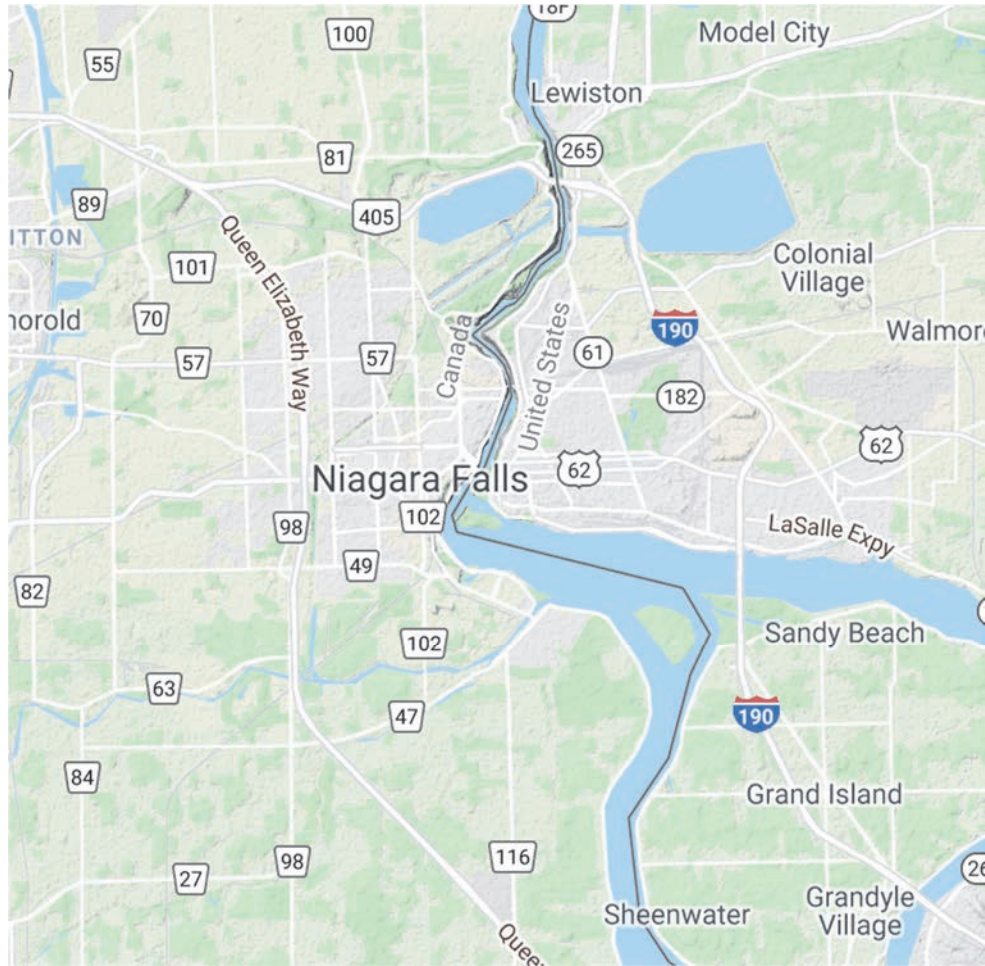
²¹⁸ "Buffalo Metro Area Population 1950–2020," Macrotrends, accessed October 14, 2020, <https://www.macrotrends.net/cities/22947/buffalo/population>; "Census Profile, 2016 Census," Statistics Canada, last modified August 9, 2019, <https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/details/page.cfm?Lang=E&Geo1=POPC&Code1=1062&Geo2=PR&Code2=35&SearchText=Fort%20Erie&SearchType=Begins&SearchPR=01&B1=All&GeoLevel=PR&GeoCode=1062&TABID=1&type=0>.

²¹⁹ Kerry Mitchell, "Pathway to Peace: What Heritage-based Collaboration Offers the Cross-border Niagara Region," University at Buffalo, December 2004, <http://ubwp.buffalo.edu/ubri/wp-content/uploads/sites/3/2014/06/Pathway-to-Peace-What-Heritage-based-Collaboration-offers-the-Cross-border-Niagara-Region.pdf>

²²⁰ Deborah W. Meyers, "Border Management at the Millennium," *The American Review of Canadian Studies* 30, no. 2 (November, 2009): 257, doi:<http://dx.doi.org.libproxy.nps.edu/10.1080/02722010009481053>.

²²¹ "Historical Traffic Statistics," The Peace Bridge, accessed October 14, 2020, <https://www.peacebridge.com/index.php/historical-traffic-statistics/yearly-volumes>.

²²² Mark Goldman, *City on the Edge: Buffalo, New York, 1900- Present* (Amherst, NY: Prometheus, 2007), Chap. 4; Edward L. Glaeser, "Can Buffalo Ever Come Back?" *City Journal*, accessed October 14, 2020, <https://www.city-journal.org/html/can-buffalo-ever-come-back-13050.html>.



This region incorporates both twin cities of Niagara Falls, Canada and Niagara Falls, U.S., and Buffalo, NY and Fort Erie, Ontario. The former manages large volumes of tourism traffic, while the latter emphasis is commercial passage.

Figure 25. Buffalo-Niagara Falls Border Map.²²³

The border crossing of Detroit, MI and Windsor, Ontario, shown in Figure 26, was responsible for over six million crossings in 2019 alone.²²⁴ The two border crossing points are the Ambassador Bridge and Windsor Tunnel, both of which hold records on the international stage. While the Windsor Tunnel is the only international sub-aqueous vehicle

²²³ Source: Buffalo-Niagara Falls border map, Google Maps, accessed July 22, 2020, <https://www.google.com/maps/@43.0044777,-79.1478728,10.96z>.

²²⁴ Bureau of Transportation Statistics Database, "Border Crossing Entry Data.." The U.S. Department of Transportation 2019 total accounts for only buses, personal vehicles, rail, and trucks regardless of trailers being empty or full.

crossing on the planet, the Ambassador Bridge is the world's largest international suspension bridge.²²⁵ The Ambassador Bridge alone handles "approximately one quarter of all trade between the U.S. and Canada."²²⁶ The CBP bridge is extremely efficient when examining average wait times of the continuously open bridge crossing. During peak traffic hours on the Ambassador Bridge, the average commercial vehicle wait time fluctuates between 16 and 20 minutes per vehicle.²²⁷ Ballooning is practically non-existent at this entry control point because of platforms focused on efficient screening, such as the FAST Program and the Advanced Border Processing Centre.²²⁸ These programs streamline the customs checkpoint process by allowing customs agents ample time to prescreen commercial carrier's documentation electronically prior to a driver's arrival, and through a "trusted traveler/trusted shipper" plan utilizing eligibility screening and background checks of transit personnel.²²⁹ One vulnerability of these programs is their reliance on information system databases. If these computer systems fail or become inaccurate due to system errors, heavy traffic delays would be expected.

The twin cities of Detroit, MI, and Windsor, Ontario, were both supported by automobile-production during the early-to mid-20th century, however the U.S. side has since removed the motor industry, sparking its decline. Conversely, the Canadian city left the industry intact and added more incentives to grow the population and economy. While the population of Windsor is 336 thousand, Detroit's population nearly doubles that of

²²⁵ "History: More Quick Facts," Detroit-Windsor Tunnel, accessed October 18, 2020, <https://www.dwtunnel.com/history/>; "Encyclopedia of Detroit: Ambassador Bridge," Detroit Historical Society, accessed October 18, 2020, <https://detroithistorical.org/learn/encyclopedia-of-detroit/ambassador-bridge>.

²²⁶ Detroit Historical Society, "Encyclopedia of Detroit: Ambassador Bridge."

²²⁷ "Detroit- Ambassador Bridge: Hourly Wait Times Trend vs. Current," U.S. Customs and Border Protection, accessed on October 18, 2020, <https://bwt.cbp.gov/details/03380001/COV>.

²²⁸ "Ambassador Bridge- Commercial," Ambassador Bridge, accessed on October 18, 2020, <http://www.ambassadorbridge.com/Commercial/Commercial.aspx>.

²²⁹ "A Highway Carrier/Driver Border Service Provider Always Open to Serve," Advanced Border Processing Centre, accessed on October 18, 2020, <http://www.abpcinc.com/>; "FAST: Free and Secure Trade for Commercial Vehicles," U.S. Customs and Border Protection, accessed on October 18, 2020, <https://www.cbp.gov/travel/trusted-traveler-programs/fast>.

Windsor at 667 thousand residents.²³⁰ In 2010, the unemployment rate of Detroit was 14.8 percent compared to the 9.6 percent national average.²³¹ Outsourcing the automotive industry crippled Detroit's economic sector and population since the 1950s, but Windsor has continued to grow its populace by over 50 percent over the same 70-year span beginning in 1950.²³² Contrary to Detroit, Windsor left the motor industry intact while developing the industrial and agrarian sectors of the region to attract immigrants. Ranked as Canada's third fastest-growing city in 2019, Windsor is drawing regional and international attention due to a growing job market and lower costs of living. These factors appeal not only to Canadian citizens living in high-cost urbanized centers like the greater Toronto area, but also the immigration sector, "which also includes non-permanent students and foreign workers."²³³ As Detroit continues to recover from its 2013 largest-ever municipal bankruptcy, Windsor continues to provide the incoming populace a balanced economy with room to grow.

²³⁰ "Windsor Population 2020," World Population Review, accessed on October 18, 2020, <https://worldpopulationreview.com/world-cities/windsor-population>; "Detroit, Michigan Population 2020," World Population Review, accessed on October 18, 2020, <https://worldpopulationreview.com/us-cities/detroit-mi-population>.

²³¹ Jen Nelles, "Cooperation in Crisis? An Analysis of Cross-Border Intermunicipal Relations in the Detroit-Windsor Region," *Journal of Urban Research* 6 (March 2011), <https://doi.org/10.4000/articulo.2097>; "State unemployment rates in 2010," U.S. Bureau of Labor Statistics, March 01, 2011, https://www.bls.gov/opub/ted/2011/ted_20110301.htm?view_full.

²³² World Population Review, "Windsor Population 2020;" World Population Review, "Detroit, Michigan Population 2020."

²³³ Employment Ontario, Promising Sectors and Occupations Windsor-Essex 2012–2015, (Windsor, ON: A&A Printing, 2012), <https://www.workforcewindsoressex.com/wp-content/uploads/2015/04/Promising-Sectors-and-Occupations-in-Windsor-Essex-2012-2015.pdf>; Dave Battagello, "Windsor Tied for Third Fastest-Growing City in Latest Statscan Census Data," Windsor Star, March 29, 2019, <https://windsorstar.com/news/local-news/windsor-third-fastest-growing-city-in-latest-census>.



The two methods of crossing this U.S.-Canada port of entry includes the Windsor Tunnel and the Ambassador Bridge, which hold world records as the only international sub-aqueous vehicle crossing and the biggest international suspension bridge.

Figure 26. Detroit-Windsor Border Map.²³⁴

The Blaine, WA and Douglas, British Columbia port of entry is the third-busiest entry control point at the U.S.-Canada border. In 2019, over four million crossings occurred at the two north-western Washington crossings.²³⁵ The first, known as the Peace Arch crossing, is located on Interstate 5 along the Puget Sound, and the second, named the

²³⁴ Source: Detroit-Windsor border map, Google Maps, accessed July 22, 2020, <https://www.google.com/maps/@42.3193592,-83.0642867,10.91z>.

²³⁵ Bureau of Transportation Statistics Database, "Border Crossing Entry Data." The U.S. Department of Transportation 2019 total accounts for only buses, personal vehicles, and rail and truck regardless of trailers being empty or loaded.

Blaine-Douglas crossing, extends along the Highway 15 corridor.²³⁶ Traffic separation at the border crossings is quite simple. While the easternmost crossing manages personal vehicles, busses, and commercial transportation, the Peace Arch crossing prohibits commercial vehicles, as shown in Figure 27.²³⁷

Although the Peace Arch border crossing only allows for personal vehicle and bus admittance, traffic ballooning remains a problem. The border control point can have wait times of up to four hours during peak hours, and those who intend to cross during those hours are advised to use alternate crossings such as Blaine-Douglas or Lynden-Aldergrove.²³⁸ Contrarily, the Blaine-Douglas port of entry average wait times range between five to fifteen minutes.²³⁹ Efficiency at the Blaine-Douglas entry point can be attributed to programs focused on safe and secure expeditious border traffic processing such as FAST, Ready Lane, and NEXUS.²⁴⁰ A vulnerability of this international entry point is the heavy wait times at the Peace Arch border crossing. If wait times continue to increase, causing traffic spillover at Blaine-Douglas and Lynden-Aldergrove border crossings, those control points might also become oversaturated by heavy traffic volumes.

The cities of Blaine, WA and Douglas, British Columbia rely on an economy known for sightseeing, the retail industry, and commercial traffic. While the population in Blaine is nearly six thousand residents, the population of Douglas in Surrey British Columbia is 517 thousand people.²⁴¹ Those living in Blaine refer to the city as “The

²³⁶ Bureau of Transportation Statistics Database, “Border Crossing Entry Data.” The U.S. Department of Transportation 2019 total accounts for only buses, personal vehicles, and rail and truck regardless of trailers being empty or loaded.

²³⁷ “Peace Arch Border Crossing,” Records Finder, accessed October 19, 2020, <https://recordsfinder.com/driving/usborder/border-crossings/wa/peace-arch/>.

²³⁸ “Peace Arch Border Crossing,” Ezbordercrossing, accessed October 19, 2020, <https://www.ezbordercrossing.com/list-of-border-crossings/washington-state/peace-arch/>.

²³⁹ “Blaine- Peace Arch: Hourly Wait Times Trend vs. Current,” U.S. Customs and Border Protection, accessed October 19, 2020, <https://bwt.cbp.gov/details/02300402/POV>.

²⁴⁰ “Blaine/Surrey Traffic Conditions,” EZbordercrossing, accessed October 19, 2020, <https://www.ezbordercrossing.com/list-of-border-crossings/washington-state/blaine-surrey/traffic/>.

²⁴¹ “Blaine, Washington Population 2020,” World Population Review, accessed October 19, 2020, <https://worldpopulationreview.com/us-cities/blaine-wa-population>; “Surrey Population 2020,” World Population Review, accessed October 19, 2020, <https://worldpopulationreview.com/world-cities/surrey-population>.

Gateway to the Pacific Northwest” due to its geographic location, which provides the means of transit from Canada to Seattle, WA.²⁴² The city has become a retail destination for Canadian citizens who travel from the suburbs of Vancouver. In 2018, Canada shoppers accounted for \$140 million of retail purchasing in Whatcom County, the county where Blaine is located.²⁴³ Canadians also travel to the U.S. for vacationing, family visits, and picking up mail and online purchases.²⁴⁴ Another marketing research study also examined U.S. citizens who travel to British Columbia. At least one-third of Washington residents surveyed had visited British Columbia, with the popular destinations being Vancouver, the Greater Vancouver Regional District, and the Fraser Valley, and the top reasons included shopping, sightseeing, and hiking.²⁴⁵ In 2006, Tourism Vancouver reported that U.S. residents visiting the Greater Vancouver region contributed to \$4.5 billion of revenue, and distribution of funds went to “accommodation (31.8%), food and beverage (26.0%), retail (19.0%), private transportation (8.8%), recreation and entertainment (9.2%), and public transportation (5.2%).”²⁴⁶ In sum, the Peace Arch crossing and the Blaine-Douglas crossing act as a commercial transportation, retail, and tourism medium between the U.S. and Canada.

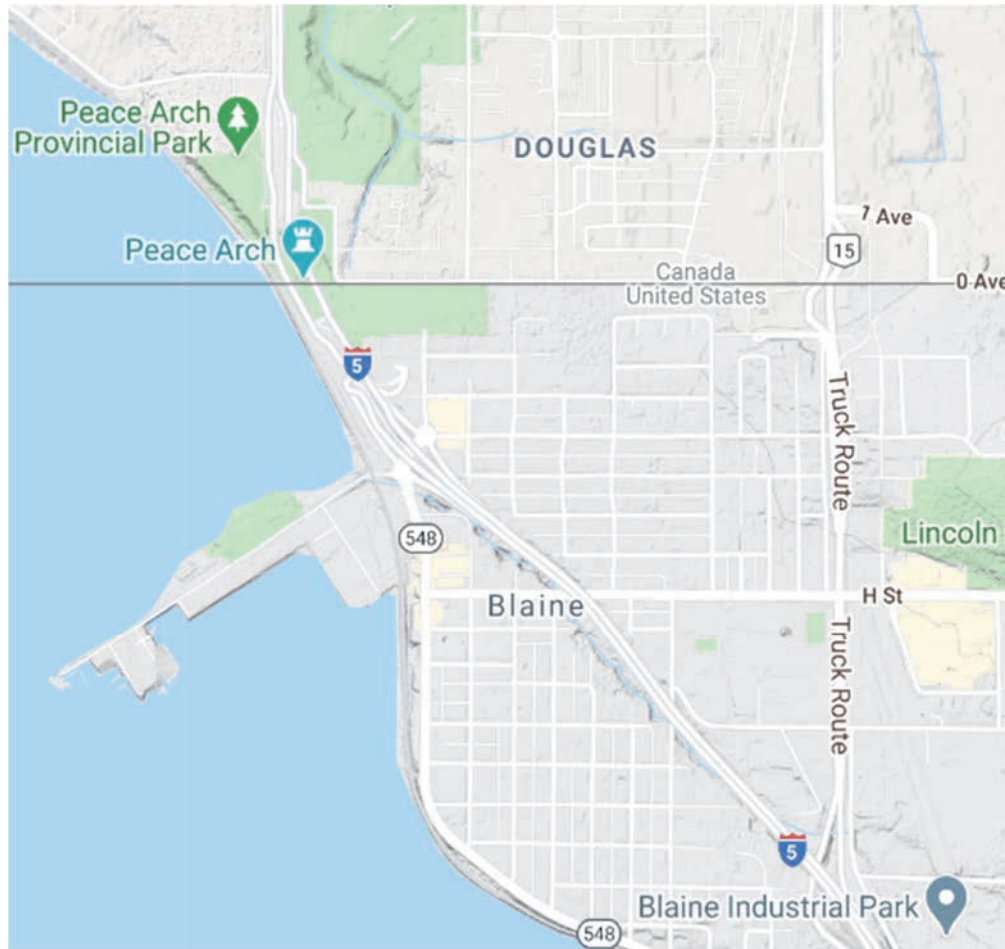
²⁴² “About Blaine,” Blaine Washington, accessed October 19, 2020, <http://www.cityofblaine.com/132/About-Blaine>.

²⁴³ Western Washington University, *COVID-19 and the US-Canada Border: Retail Shopping Destinations for Canadians in Whatcom County* (119), (Bellingham, WA: Border Policy Research Institute, 2020), https://cedar.wvu.edu/bpri_publications/119.

²⁴⁴ Dave Gallagher, “Why are Canadians Crossing the border? Fewer of Them are Shopping at Whatcom Stores,” *The Bellingham Herald*, March 23, 2019, <https://www.bellinghamherald.com/news/business/article228299199.html>.

²⁴⁵ “Tourism Implementation Plan Destination White Rock,” Visit White Rock, October 1, 2007, <https://www.whiterockcity.ca/DocumentCenter/View/669/Tourism-Implementation-Plan-PDF>.

²⁴⁶ Visit White Rock, “Tourism Implementation Plan Destination White Rock.”



The entry control point is split into two, the first being the Peace Arch crossing, and second the Blaine-Douglas crossing. The major difference is that commercial trucking is only permitted through the Blaine-Douglas crossing.

Figure 27. Blaine-Douglas Border Map.²⁴⁷

The Port Huron, MI and Point Edward, Ontario entry control point is located at the southernmost point of Lake Huron, 57 miles northeast of the Detroit-Windsor border crossing, as seen in Figure 28. In 2019, with over 2 million border crossings over the St. Clair River on the arch cantilever Blue Water Bridge, this point of entry is the fourth busiest international crossing at the U.S.-Canada border.²⁴⁸ In the past only one Blue Water Bridge

²⁴⁷ Source: Blaine-Douglas border map, Google Maps, accessed July 22, 2020, <https://www.google.com/maps/@48.9972118,-122.8276515,11.84z>.

²⁴⁸ Bureau of Transportation Statistics Database, "Border Crossing Entry Data." The U.S. Department of Transportation 2019 total accounts for only buses, personal vehicles, and rail and truck regardless of trailers being empty or loaded.

existed, which gave eastbound and westbound traffic three lanes to manipulate for traffic flow. In November 1999, a second Blue Water Bridge was opened for operation, giving a total of six lanes for U.S.-bound and Canada-bound traffic.²⁴⁹ A concern at this entry point is the amount of traffic the Canada-bound inspection lanes process. The 13 CBP inspection booths manage “more traffic per inspection booth than at any other Canada-U.S. border crossing.”²⁵⁰ Ballooning mitigation is practically non-existent because the Blue Water Bridge is the only land border crossing point for nearly 60 miles. This fact demonstrates the importance of transportation programs, such as FAST and NEXUS, to increase throughput while maintaining a secure entry control point.

The cities of Port Huron, MI and Point Edward, Ontario are relatively small communities that are heavily reliant on the tourism industry. While Port Huron has a population of nearly 29-thousand residents, the small town of Point Edward has two thousand occupants.²⁵¹ With the international bridge bringing U.S. and Canadian traffic through the region, both cities have economies reliant on tourism. Port Huron’s economy is also supported through the production of paper and metal.²⁵² The St. Clair River industrial shipping dock, locally known as The Bean Dock, ceased industrial operations in 2003 but continues to use the pier for cruise liners, resupplying ships, and foreign vessels.²⁵³ Point Edward, however, is solely reliant on tourism and the commercial

²⁴⁹ “History,” Michigan Department of Transportation, accessed October 20, 2020, https://www.michigan.gov/mdot/0,4616,7-151-87728_11070-22062--,00.html.

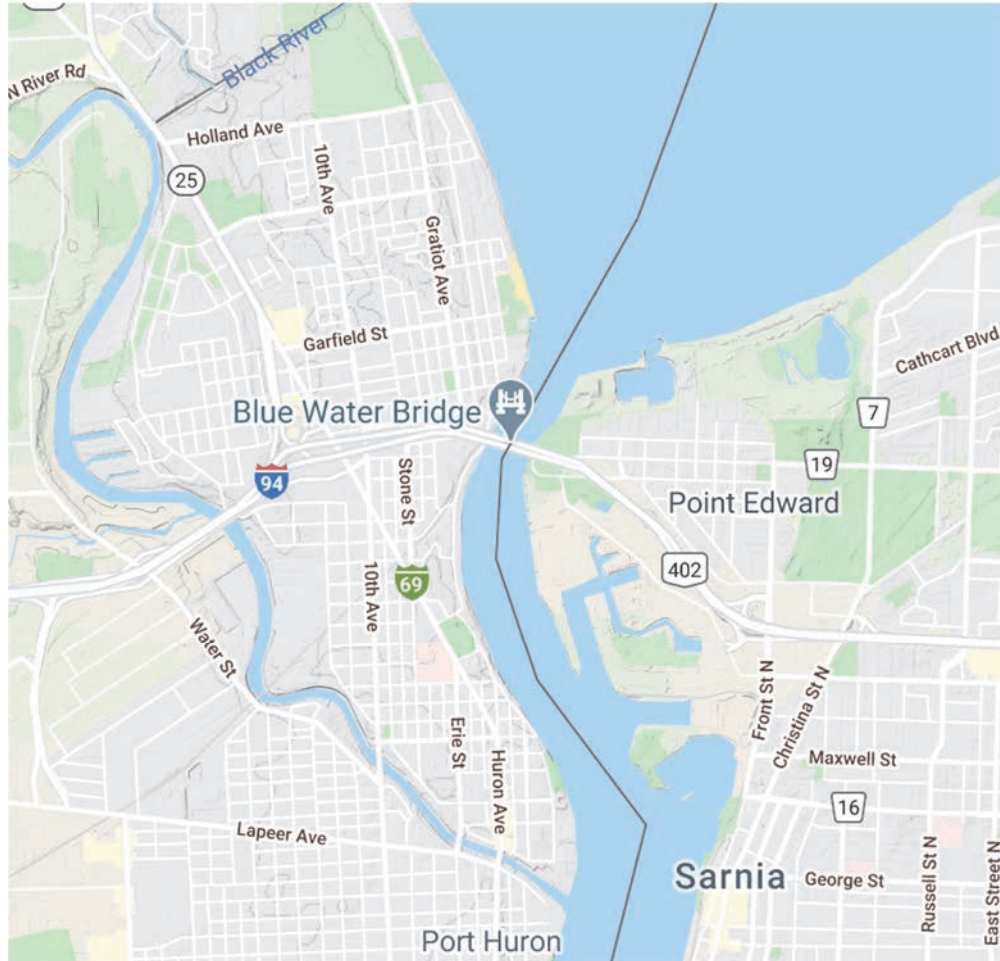
²⁵⁰ “Blue Water Bridge,” EZbordercrossing, accessed October 20, 2020, <https://www.ezbordercrossing.com/list-of-border-crossings/michigan/blue-water-bridge/>.

²⁵¹ “QuickFacts: Port Huron City, Michigan,” United States Census Bureau, accessed October 20, 2020, <https://www.census.gov/quickfacts/porthuroncitymichigan>; “Census Profile, 2016 Census: Point Edward, Village,” Statistics Canada, accessed October 20, 2020, <https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/details/page.cfm?Lang=E&Geo1=CSD&Code1=3538031&Geo2=PR&Code2=35&SearchText=Point%20Edward&SearchType=Begin&SearchPR=01&B1=All&GeoLevel=PR&GeoCode=3538031&TABID=1&type=0>.

²⁵² “Port Huron: Economy,” Michigan History, accessed October 20, 2020, <http://michiganhistory.leadr.msu.edu/port-huron-economy/>.

²⁵³ “History of the Seaway Terminal/Bean Dock,” Acheson Ventures, accessed October 20, 2020, <https://www.achesonventures.com/seaway-history>.

industry, including the 2000 opening of the Charity Casino, since the 1980s industrial decline.²⁵⁴



Two bridges running side-by-side orchestrated 2 milling crossings last year, and the Canada-bound inspection booths inspect more traffic than any other U.S.-Canada port of entry.

Figure 28. Port Huron-Point Edward Border Map.²⁵⁵

²⁵⁴ "A Brief History," Village of Point Edward, accessed October 20, 2020, <https://www.villageofpointedward.com/a-brief-history/>.

²⁵⁵ Source: Port Huron-Point Edward border map, Google Maps, accessed July 22, 2020, <https://www.google.com/maps/@42.9896454,-82.4763474,12.67z>.

The Champlain-Rouses Point entry control point resides at the intersection of New York, Vermont, and 30 miles south of Montreal, as seen in Figure 29. Although the townships in the area only account for five thousand residents combined, the region still manages the fifth most crossings at the U.S.-Canada border.²⁵⁶ In 2019, over 300 thousand buses, personal vehicles, trucks, and trains crossed this border control point (the U.S. Bureau of Transportation combines crossing totals for both Champlain-Blackpool and Rouses Point-Lacolle).²⁵⁷ The primary border control point between Champlain, NY and Saint-Bernard, Quebec, is a major thoroughfare from Quebec to New York and has recently expanded to increased capacity in response to higher volumes of shipping traffic.²⁵⁸ To understand the amount of traffic the crossing accounts for, “on average, more than 15,000 commercial vehicles use the crossing weekly.”²⁵⁹ Moreover, the Champlain and Saint-Bernard crossing ranks sixth in commercial traffic and eleventh in passenger traffic at the U.S.-Canada border, and is responsible for \$14 billion in international commerce.²⁶⁰ In 2008, the Quebec government ministry Transports Québec began using radar to detect traffic line length, calculate wait times, and display the times on variable message signs,

²⁵⁶ “Champlain, New York Population 2020,” World Population Review, accessed October 23, 2020, <https://worldpopulationreview.com/us-cities/champlain-ny-population>; “Rouses Point, New York Population 2020,” World Population Review, accessed October 23, 2020, <https://worldpopulationreview.com/us-cities/rouses-point-ny-population>; “Census Profile, 2016 Census: Lacolle,” Statistics Canada, accessed October 23, 2020, <https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/details/page.cfm?Lang=E&Geo1=POPC&Code1=0445&Geo2=POPC&Code2=0445&Data=Count&SearchText=Lacolle&SearchType=Begin&SearchPR=01&B1=All&TABID=1>; “Census Profile, 2016 Census: Saint-Bernard,” Statistics Canada, accessed October 23, 2020, <https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/details/page.cfm?Lang=E&Geo1=POPC&Code1=1479&Geo2=PR&Code2=12&Data=Count&SearchText=Saint-Bernard&SearchType=Begin&SearchPR=01&B1=All>; Statistics Canada, “Census Profile, 2016 Census: Lacolle.”

²⁵⁷ Bureau of Transportation Statistics Database “Border Crossing Entry Data: 2019 Ranking.” The U.S. Department of Transportation 2019 total accounts for only buses, personal vehicles, and trucks regardless of trailers being empty or full.

²⁵⁸ Matt Cutler and Isaac Carey, “Trade Rout: As Trade Tensions Built Between U.S. and Canada, this American Border Town Felt the Freeze,” City University of New York Capstone, December 16, 2018, https://academicworks.cuny.edu/cgi/viewcontent.cgi?article=1303&context=gj_etds.

²⁵⁹ “I-87 Multimodal Corridor Study- Existing Corridor Conditions and Opportunities,” New York State, accessed October 16, 2020, https://www.dot.ny.gov/programs/i-87-multimodal-corridor-study/repository/chapter_2-9_us-canadian_border_crossing.pdf. This total includes northbound and southbound crossings.

²⁶⁰ New York State, “I-87 Multimodal Corridor Study- Existing Corridor Conditions and Opportunities.”

which helped in creating traffic transparency.²⁶¹ As mentioned in the following paragraph, if those crossing are unwilling to wait the time allotted on the displays, the Rouses Point-Lacolle port of entry is an alternative route, which assists in easing the ballooning effect at these borderlands. However, one regional study shows that “extended queues frequently occur on the Canadian side of the border.”²⁶² Congestion is created by the large amounts of international goods and personal vehicle traffic. Although two border entry points are present, heavy traffic demonstrates a vulnerability that will likely increase as cross border economic demands are not expected to subside.

The eastern-most crossing in the region, Rouses Point, New York and Lacolle, Quebec, sit on the west bank of the Richelieu River and is commonly transited by locals when the Champlain crossing is experiencing long wait times.²⁶³ Moreover, one-mile east of the Rouses Point-Lacolle crossing is a third international crossing between Canada and the U.S., and is named the Cantic Station. Both entry points use two inspection lanes on each side of the border, which provides minimum alleviation to traffic congestion. Since these border entry points are primarily used by local traffic and during long wait times at the Champlain and Saint-Bernard crossing, having only two inspection booths are sufficient for the small communities of Rouses Point, NY and Lacolle, Quebec.

Industry in the region is quite diverse when examining the cities on each side of the U.S.-Canada border. The New York cities of Champlain and Rouses Point are economically dependent on the following industries: municipalities, manufacturing, retail trade, agriculture, forestry, and fishing and hunting.²⁶⁴ As for Quebec’s cities of Lacolle

²⁶¹ Jonathan Sabeau and Crystal Jones, “Inventory of Current Programs for Measuring Wait Times at Land Border Crossings,” Transport Canada and Federal Highway Administration, May 21, 2008, <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.511.694&rep=rep1&type=pdf>.

²⁶² New York State, “I-87 Multimodal Corridor Study- Existing Corridor Conditions and Opportunities.”

²⁶³ “Rouses Point / Lacolle,” EZbordercrossing, accessed October 16, 2020, <https://www.ezbordercrossing.com/list-of-border-crossings/new-york/rouses-point/>.

²⁶⁴ “Rouses Point, NY: Census Place,” Data USA, accessed October 23, 2020, <https://datausa.io/profile/geo/rouses-point-ny>.

and Saint-Bernard, the leading industries are construction, manufacturing, agriculture, forestry, retail trade, transportation, and warehousing.²⁶⁵



The Champlain-Saint Bernard and Rouses Point-Lacolle ports of entry account for over 15-thousand commercial vehicles weekly and \$14 billion in international commerce.

Figure 29. Champlain-Rouses Point Border Map.²⁶⁶

²⁶⁵ Statistics Canada, “Census Profile, 2016 Census: Saint-Bernard.”

²⁶⁶ Source: Champlain-Rouses Point border map, Google Maps, accessed July 22, 2020, <https://www.google.com/maps/@44.9899742,-73.4282321,12.67z>.

D. BORDER SECURITY TECHNOLOGY

The CBP and the Canada Border Services Agency work closely to provide a secure border while allowing both nations continued economic prosperity through efficient cross-border travel. At the U.S.-Canada border, security technologies include physical sensors and equipment, and bilateral border programs that use technology to reduce wait times. The equipment in use at the international boundary includes radar towers with thermal imagery to detect illegal crossings, Radio Frequency Identification technology license plate readers, radiation portal monitors for detecting the presence of radiation in trucks and personal vehicles, biometric technology, and unmanned aircraft for targeting threats in border regions.²⁶⁷ The border programs used to expedite traffic at entry control points include NEXUS and FAST. The NEXUS program is exclusive to the U.S.-Canada border for passenger vehicles at land ports of entry, and the FAST border program is used for commercial traffic entering the U.S.²⁶⁸ Like the border programs used at the U.S.-Mexico border, these entry programs use information system technologies to store personally identifiable information and biometrics to identify a person before allowing entry into the U.S.

The combination of different topographies and different types of weather warrant the use of these physical technologies for border security are found throughout the U.S.-Canada border region. For instance, the CBP use UAVs (e.g. MQ-1 Predator, MQ-9 Reaper, and RQ-7B Shadow) to monitor over 1,000 miles of U.S.-Canada border territory, specifically regions stretching from the Pacific Ocean to Minnesota, and across the northern territories of New York.²⁶⁹ These unmanned aircraft use “synthetic-aperture radar

²⁶⁷ “Northern Border Strategy,” U.S. Department of Homeland Security, June 2012, <https://www.dhs.gov/xlibrary/assets/policy/dhs-northern-border-strategy.pdf>; George Richert, “Border Patrol Radar Towers Watch Lake Erie From Sturgeon Point, Dunkirk,” KIVB 4 Buffalo News, February 6, 2020, <https://www.wivb.com/news/border-patrol-radar-towers-watch-lake-erie-from-sturgeon-point-dunkirk/>; Mark B. Salter, and Geneviève Piché, “The Securitization of the US–Canada Border in American Political Discourse,” *Canadian Journal of Political Science* 44, no. 4 (March 2012): 933, <https://doi.org/10.1017/S0008423911000813>; U.S. Customs and Border Protection, “Say Hello to the New Face of Speed Security and Safety: Introducing Biometric Facial Comparison,” accessed on November 7, 2020, <https://www.biometrics.cbp.gov/>.

²⁶⁸ U.S. Department of Homeland Defense, “Trusted Traveler Programs.”

²⁶⁹ U.S. Department of Homeland Security, “Border Security Results.”

imagery and full-motion video to aid in surveilling the border.”²⁷⁰ Synthetic aperture radar imagery used by CBP drones transmits and receives and stores a series of short pulse returns, “the radar can synthesize the equivalent of a linear array long enough to provide azimuth resolution as fine as a foot or so.”²⁷¹ A major benefit of using these synthesized radar arrays is that imaging can be produced at night, through cloud cover and fog, and even through smoke. Moving objects in the image are blurry due to rotational motion, which provides CBP agents items to view closer with the UAVs full-motion video.

The benefits of UAV technology in the region include its capability of traveling over large distances or concentrating in an area of interest for surveillance purposes. To illustrate where these drone technologies are employed, a database released by Gizmodo has mapped drone flight paths along the U.S.-Canada border region, identifying the CBP drones used in the area, routes travelled, and locations that are highly transited. The UAV tail numbers and platform types that have transited the United States’ northern border since June 2019 (Gizmodo database start date) include MQ-9 Predator B drones CBP 104 and CBP 216.²⁷² The area that contained the most drone flights, seen in Figure 30, exhibits the two CBP drone routes from June 10, 2019 to June 4, 2020 that occurred exclusively at the U.S.-Canada border regions of Montana, North Dakota, and Minnesota, originating along the I-29 corridor between the North Dakota cities of Pembina and Grand Forks, roughly 73-miles north of Fargo.²⁷³ These flight paths demonstrate the CBP’s aerial surveillance focus in the northeastern region of North Dakota and portions of northwestern Minnesota.

²⁷⁰ Eoin Higgins, “US Border Patrol Denounced as ‘Rogue Agency’ for Using Predator Drone to Spy on Minneapolis Protests,” Common Dreams, May 29, 2020, <https://www.commondreams.org/news/2020/05/29/us-border-patrol-denounced-rogue-agency-using-predator-drone-spy-minneapolis>.

²⁷¹ George W. Stimson, *Introduction to Airborne Radar*. 2nd ed. (Mendham, New Jersey: SciTech Publishing, 1998), 13.

²⁷² Gizmodo/Earth Engine Drone Flight Logs, unpublished data, accessed November 7, 2020, <https://dhrvmehrotra3.users.earthengine.app/view/drones>.

²⁷³ Gizmodo/Earth Engine Drone Flight Logs, unpublished data.



From 2019 to 2020, this area was the most transited by CBP drones than any other U.S.-Canada border area.

Figure 30. U.S. Drone Use in North Dakota and Minnesota.²⁷⁴

A new and innovative technology for border surveillance on the U.S.-Canada border is the Slash CameraPole Pilot program.²⁷⁵ Designed to operate in the “Slash,” a 20-foot-wide and 1,349-mile-long area along the U.S.-Canada border, the DHS and the Massachusetts Institute of Technology have created a sensor disguised as a light pole to conduct surveillance at the border. Installed equipment on a single Slash CameraPole include thermal sensors, four infrared cameras, solar panels, a fuel cell system, motion detection algorithms, and a hardened exterior capable of sustaining rounds from small arms.²⁷⁶ These sensors then send data to a central command center for further analysis by

²⁷⁴ Source: U.S. Department of Homeland Security, “Border Security Results.”; North Dakota/Minnesota-Canada border map, Google Maps, accessed November 9, 2020, <https://www.google.com/maps/@47.7539336,-96.856058,7.03z>.

²⁷⁵ “Snapshot: Protecting our Northern Border with the Slash CameraPole,” U.S. Department of Homeland Security, January 30, 2020, <https://www.dhs.gov/science-and-technology/news/2020/01/30/snapshot-protecting-our-northern-border-slash-camerapole>.

²⁷⁶ U.S. Department of Homeland Security, “Snapshot: Protecting our Northern Border with the Slash CameraPole.”

border agents. The pilot program is being tested in the Swan Sector of Vermont, New Hampshire, and New York, and was recently acquired by CBP. Slash CameraPoles might become the new norm for U.S.-Canada border security surveillance along the 1,349-mile corridor.

E. REGIONAL STABILITY

A contributor to U.S.-Canada regional stability is the relationship between Canadian Prime Minister Trudeau and U.S. President Trump on migration. Executive Orders 13769 and 13780 have reduced the admittance of refugees into the U.S. and “restricted migration from Iran, Iraq, Libya, Somalia, Sudan, Syria, and Yemen.”²⁷⁷ Prime Minister Trudeau responded to the United States’ orders on Twitter with a statement about foreign inclusion, which placed a barrier between Canadian and U.S. migration policy: “To those fleeing persecution, terror [and] war, Canadians will welcome you, regardless of your faith. Diversity is our strength.”²⁷⁸ With nearly 400,000 shares, the Canadian message resonated around the world.

Prime Minister Trudeau was invited to Washington, DC, the month after President Trump signed Executive Order 13769, for a meeting with the U.S. President. Although the opposing views were never directly acknowledged, Prime Minister Trudeau stated during a press conference that “we had a very strong and fruitful discussion [regarding U.S.-Canada security and immigration systems].”²⁷⁹ Although these ideals focusing on migration do not directly influence regional stability at the U.S.-Canada border, a bordering nation-state foreign policy does impact binational cooperation and border region stability.

²⁷⁷ Exec. Order No. 13769 (January 27, 2017), <https://www.whitehouse.gov/presidential-actions/executive-order-protecting-nation-foreign-terrorist-entry-united-states/>; Exec. Order No. 13780 (March 6, 2017), <https://www.whitehouse.gov/presidential-actions/executive-order-protecting-nation-foreign-terrorist-entry-united-states-2/>; Benjamin J. Muller and Bonnie Lynn Guthrie, “Collateral Damage: The Canada-US Border and President Trump’s Executive Orders,” *American Review of Canadian Studies* 50, no. 1 (June 2020): 111–3, DOI: 10.1080/02722011.2020.1743006.

²⁷⁸ Justin Trudeau (@JustinTrudeau), “To those fleeing persecution, terror & war, Canadians will welcome you, regardless of your faith. Diversity is our strength #WelcomeToCanada,” Twitter, January 8, 2017, 12:20 p.m., <https://twitter.com/JustinTrudeau/status/825438460265762816>.

²⁷⁹ “Remarks by President Trump and Prime Minister Trudeau of Canada in Joint Press Conference,” The White House, February 13, 2017, <https://www.whitehouse.gov/briefings-statements/remarks-president-trump-prime-minister-trudeau-canada-joint-press-conference/>.

Furthermore, with 80 percent of Canada's populace located at least 60 miles from the U.S. border, Canadian citizens have an undeniably close relationship with the U.S.-Canada border.²⁸⁰ Results of migration differences between the U.S. and Canada have echoed through the Canadian populace. Canadian's are generally inclined to view "their country's immigration system more positively than their counterparts in the United States."²⁸¹ Canada's outlook may not contribute to instability at the U.S.-Canada borderlands, but it could lead to discontent between both nation-states' views on immigration, especially if the U.S. is unwilling to assist in Canada's goal to provide basic human rights for those seeking refuge.

Another lens of U.S.-Canada regional stability comes from an international perspective of commerce exchanges and lifestyle equality between both nations at the international boundary. Other nations describe the borderland relationship between the U.S. and Canada as "a place of exchange for trade."²⁸² Although the attacks of New York in 1993 and 2001 have placed international attention on U.S. border security measures, the economic cooperation between the U.S. and Canada still reign as the primary attribute. The lack of Canadian citizens entering illegally is a major contributor to the United States' border security. Due to economic success and high standards of living of our northern neighbors, Canadians are not necessarily searching for ways to enter the U.S. for employment or an improved lifestyle; contrary to the southern border of U.S.-Mexico known for the United States' efforts to suppress immigration.²⁸³

²⁸⁰ Salter and Piché, "The Securitization of the US-Canada Border in American Political Discourse."

²⁸¹ Amelia Cheatham, "What Is Canada's Immigration Policy?" Council on Foreign Relations, August 3, 2020, <https://www.cfr.org/backgrounder/what-canadas-immigration-policy>.

²⁸² Hélène Pellerin, "Borders, Migration and Economic Integration: Towards a New Political Economy of Borders," In *Global Surveillance and Policing*, ed. by Elia Zureik and Mark Salter (Portland, OR: Willan, 2005), 52.

²⁸³ David B. Carter and Paul Poast, "Why do states build walls? Political economy, security, and border stability," *Journal of Conflict Resolution* 61, no. 2 (September 2015): 244, <https://doi.org/10.1177/0022002715596776>.

F. CONCLUSION

The U.S.-Canada border region evolved from the late-18th century until the mid-19th century through a series of diplomatic agreements, specifically the Treaty of Paris, the Louisiana Purchase, and the Oregon Treaty. Since the border's final adjustments in 1846, both nations have helped build each other's economic sector without interference until recent events demonstrated the potential threats of a porous border. Due to the terrorist events of 1993, 1999, and ultimately 2001, the national security objectives have emphasized the "dual objectives of security and facilitation."²⁸⁴ Border programs such as Beyond the Border and LRMA were created and implemented, and overseen through the binational security forces of BEST and IBET to achieve the objective of streamlining commerce without sacrificing security. Access points along the U.S.-Canada border have benefited from these programs' focus on pre-screening and from the border surveillance technologies that contribute as border agent force multipliers as evidence by the minimal wait times at the top-five U.S.-Canada ports of entry and the decreased terrorist activity in the border regions.

However, one major concern of both nations are the differing views on migration. While Canadian administration demonstrates a liberal approach for the inclusion of people fleeing failed states, the United States' executive branch has placed stricter guidance on the national immigration policy. Regardless of these differences in international inclusion, the U.S.-Canada border is arguably the most stable region of the three discussed borderlands due to its integrated security, cooperative border management programs, and the positive living conditions for both nations.

²⁸⁴ Salter and Piché, "The Securitization of the US-Canada Border in American Political Discourse," 941.

V. CONCLUSION

This thesis explores the unilateral smart borders connecting Argentina, Bolivia, Brazil, and Paraguay, the smart border between the United States and Mexico, and the smart border between the United States and Canada. The Argentina case study examines a border region that, concerned with illegal crossings at northern borders, had recently adopted border surveillance equipment for illegal crossing detection. The United States and Mexico case study demonstrates a region with the most border surveillance technologies of the three smart borders, as seen in Figure 22, yet is plagued with failing border security policies. The U.S.-Mexico borderland illustrates the notion that border technologies do not create regional stability. The United States and Canada case study displays an international boundary focused on the flow of trade while maintaining a secure border. Enormous amounts of border technology are in use at this border, not only for surveillance purposes, but also for the efficient flow of commerce.

A. LESSONS LEARNED

After only one year of smart border technology testing in Argentina, the advantages and disadvantages are still unclear. However, with the implementation of smart borders at the U.S. and Mexico and the U.S. and Canada borderlands at least a decade old, the benefits and detriments are visible. Border security technologies such as sensors and systems of multiple sensors are force multipliers while cooperative binational border security programs facilitate security and trade. For example, the magnitude of a system that includes inter-connected sensors broadcasting real-time surveillance data to a command and control center creates a massive advantage for border patrol organizations who are responsible for homeland security. Over-relying on information systems and privacy-invasive surveillance technologies, however, does contribute to instability through information system vulnerabilities and the infringement of national rights. For instance, catastrophic damages would occur if hostile actors breached information systems and could consequently expose millions of peoples' personally identifiable information, biometric data, and proprietary

government information, or could manipulate database results to allow or restrict access to travelers.

In sum, there is not a direct link between smart border management and stability (or instability) in the Western Hemisphere. However, failing states compound instability in adjacent regions with a border security focus. National security concerns produced by migration flows and drug trafficking account for the largest variables between two of the three smart borders. These concerns, however, do not necessarily have a direct relationship with the strength of border security technologies. The borders of Argentina-Bolivia and U.S.-Mexico have similar traffic patterns caused by disparities in economic and living conditions, which is contrary to the U.S.-Canada border region that demonstrates similar economic levels and living conditions. This does not necessarily prove a direct link between security and economic variances amongst neighboring states, which cause migration flows, trafficking, and instability in the borderlands, but the three case studies of U.S. and Mexico; U.S. and Canada; and Argentina, Bolivia, Brazil, and Paraguay do exhibit an association between the two variables. For instance, the average living conditions and economy of Argentina are more stable than that of Bolivia which recently experienced a political coup. Furthermore, life in the U.S. when compared to Mexico is considerably more stable when examining crime rates, average living conditions, and national economic strength. Contrarily, the disparity between variables when comparing the U.S. and Canada are minimal; both economies are stable, living conditions and infrastructure are paramount, and basic human rights of the populace are met. In total, borders are easier to manage when bordering nations have similar living and economic conditions, even if they are smart.

B. FUTURE RESEARCH

Although this research focuses solely on three smart borders and border deployments used in those regions, researching other borderlands that plan to utilize (or have demonstrated) smart border technologies and policies (e.g. Brazil, Mexico, Colombia, Venezuela, Bolivia, Ecuador, Chile, Peru, Guatemala, Uruguay) can assist in analyzing contributions of border security technologies to stability and instability, and could help

pinpoint similar or alternative reasons for variance.²⁸⁵ Although the three cases point to a correlation between border instability and adjacent state inequalities, rather than to a correlation between border stability and border security technology, analyzing other nations with shared borders might reveal more refined findings with this framework.

As command and control centers continue to analyze enormous swaths of border surveillance data, sorting and deciphering large quantities of information is essential for efficient operations. Future research that explores the possibilities of artificial intelligence integration into these data pools could determine if such technologies can provide progressive data processing solutions for a data-saturated environment. The ability to filter pertinent surveillance data from irrelevant information would contribute to heightened border security awareness.

Lastly, given the intrusive nature of border security surveillance technologies, future research could investigate potential national policies and practices that could protect the rights of a populace, while still executing the mission of border security. This could include information purge agreements that require the deletion of archived surveillance data not considered essential to homeland security, and policies that prohibit border surveillance information from becoming public domain. Also, populations should have a voice—through voting—about how their borders are monitored and the governing policies of surveilled data, by expanding voting rights for populations residing within border regions utilizing smart border technologies. These changes would help bridge the gap between concerns of the populace and privacy violations, and border management and national security.

²⁸⁵ Otis, “Brazil leads the way on global commercial drone boom;” Koebler, “American Defense Companies Try to Break Israel’s Grasp on Latin American Drone Market;” Sánchez, “COHA Report: Drones in Latin America.”

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