



**EL PASO**  
INTERNATIONAL BRIDGES

# Public-Private Partnership (P3) Program Renewal & Comprehensive Capital Improvements Plan December 2018

**Strategic Goal # 1** – Create an Environment Conducive to Strong, Sustainable Economic Development

1.5. Stimulate Economic Growth Through Transit Integration, Cross Border Mobility, Trade and Tourism

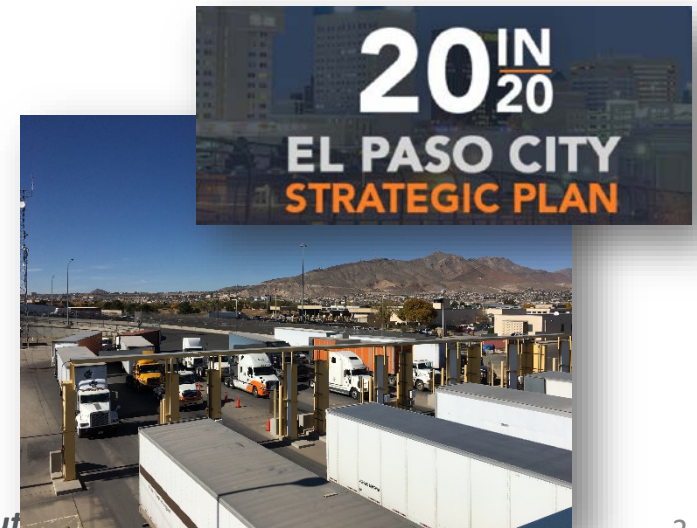


# Presentation Outline



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- International Bridges Department Revamping
- P3 Renewal
- Bridges Steering Committee Background and Efforts
- Comprehensive POE Capital Improvements Plan (20 in 2020)
- Requested City Council Actions
  - ❖ P3 Program Renewal & CIP Adoption



*"Delivering Outstanding Services"*



# International Bridges Dept.

Department Transformation (Summer 2015)



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- Department restructuring and transformation as a first step to leverage the bridges for economic development purposes
- CM began discussions with regional stakeholders to begin bridge improvement efforts
- Bridges Steering Committee established using Lean Six Sigma methodologies
  - ❖ LSS techniques and methodologies to benefit and improve the operations at the city's ports of entry
  - ❖ LSS approach to bridge projects modernization and enhancements





# International Bridges Dept.

Department Transformation (Summer 2015)



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- **Three-year long effort has led to:**
  - ❖ Development of a comprehensive CIP for all regional POEs, all modes, both NB|SB
  - ❖ Rider 49: \$32M in state transportation funding
  - ❖ Advanced bridge wait-times and crossings data analysis applying econometric modeling and forecasting techniques
  - ❖ Application of research methodologies and advanced statistical analysis, including qualitative, quantitative and (GIS) spatial techniques
  - ❖ Implemented programs: Unified Cargo Processing, empties program at BOTA cargo and ready lane segregation into MX
  - ❖ Exchange of ideas and on-going conversations about active and future bridge improvement projects with all stakeholders engaged



# P3 background

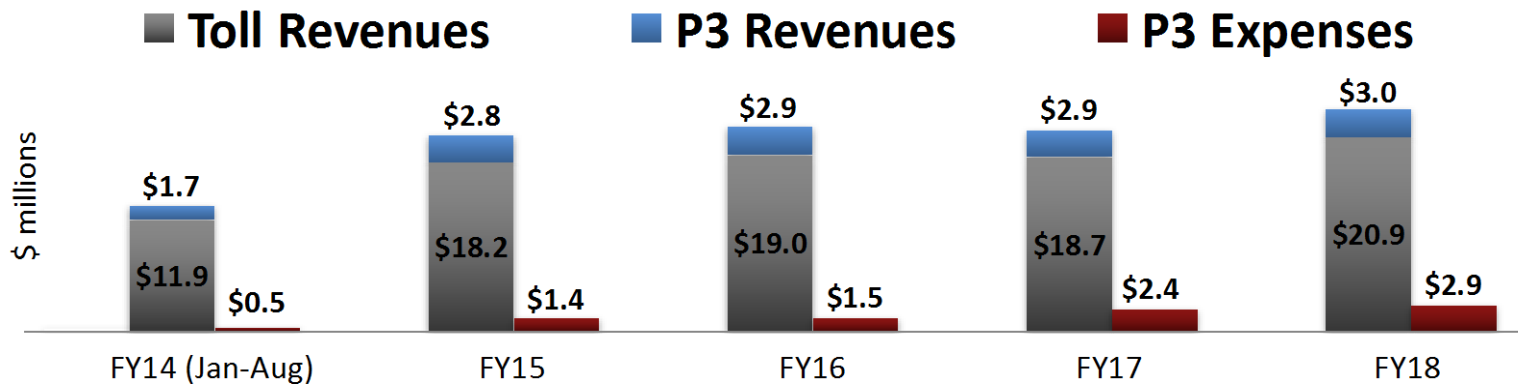
- El Paso one of five entities selected for the five-year P3 Program
- City supplements CBP overtime to staff all lanes during peak hours to help **reduce or stabilize wait times** at PdN and Ysleta
  - additional coverage during holidays and special events
- Paid for by an increase in tolls starting January 2014
  - \$0.50 for autos and \$0.50 per axle for cargo trucks
- Approved by City Council on 12/03/13
  - officially began 01/26/14
  - past renewals 9/23/14 and 9/22/15
  - last renewal 07/12/16 to **12/18/18**
- P3 revenues also used for **infrastructure and traffic control**



# P3 revenues & expenditures

	FY14 (Jan-Aug)	FY15	FY16	FY17	FY18	All FYs
P3 Revenues	\$1,672,113	\$2,820,758	\$2,917,970	\$2,941,566	\$2,974,410	<b>\$13,326,815</b>
P3 Expenditures	<b>\$533,308</b>	<b>\$1,381,959</b>	<b>\$1,455,081</b>	<b>\$2,388,181</b>	<b>\$2,863,080</b>	<b>\$8,621,609</b>
P3 Balance	<b>\$1,138,805</b>	<b>\$1,438,799</b>	<b>\$1,462,888</b>	<b>\$553,384</b>	<b>\$111,330</b>	<b>\$4,705,206</b>
P3 Cash Differential					\$1,858,597	\$1,858,597

**17% of FY18 P3 expenditures are non-overtime costs**



**P3 overtime (FY18) – vehicles comprised 69% and cargo 27%**

Source: IBD. Note: non-overtime costs include: \$248,906 to ITS engineering designs for Rider 49; \$209,791 to Metropia; \$160,400 to Stanton old toll building; and \$59,200 to TMAC process map consulting.



# Lit review on economic impacts

- Cargo wait times at the El Paso-Juarez border cause over **\$1.5 billion** in losses to regional output (Del Castillo et al. 2007)
- If border delays are not addressed through 2035 they will contract regional output by **\$54 billion** (Cambridge Systematics 2011)
- Reducing cargo wait times by 9-13 min. reduces regional output losses by **\$450 million** over 10 years (Accenture 2008)
- Fully staffing primary inspection for all modes during peak hours adds **\$30 million** yearly to regional output (Cambridge Systematics 2011)
- One additional CBP agent during most congested vehicle hours triggers around **\$26 million** in shopping and tourism (Roberts et al. 2014)
- **El Paso POE international trade valued at \$70.4B**



Source: Bureau of Transportation Statistics, 2017

Note: Excluding Roberts et al. 2014, all impacts include direct, indirect and induced effects.



# Original P3 metrics

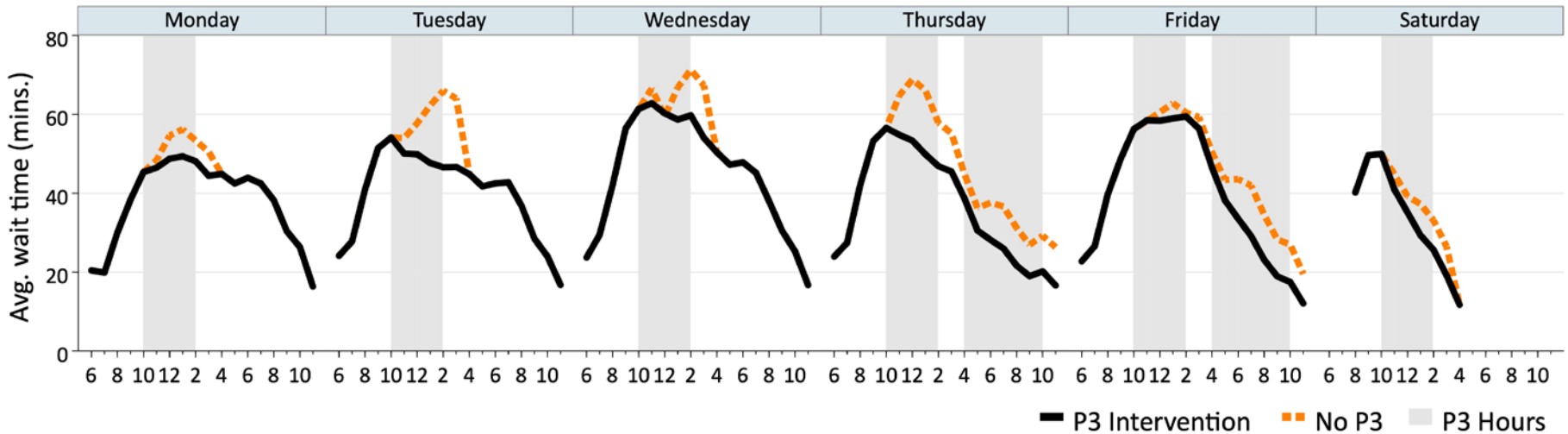


- Cargo – target of **75%** w/ wait times of **<= 19** minutes
  - target of **60%** due to high growth in traffic post-construction
- Pedestrians – target of **75%** w/ wait times of **<= 15** minutes
- Vehicles – target of **25%** w/ wait times of **<= 15** minutes



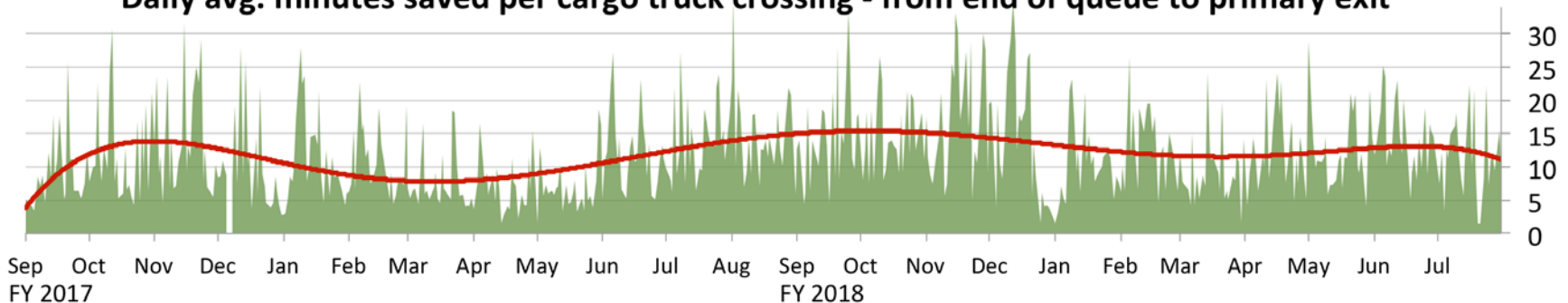
# Econometric model – P3 influence

Fitted times without P3 vs. actual times with P3 (w/ 1 hr. spill-over)



At current expenditures, the P3 has helped reduce average cargo wait times by 20.3%

Daily avg. minutes saved per cargo truck crossing - from end of queue to primary exit



Source: TTI wait times w/ 5 order polynomial trend.

Note: Model based on a pooled OLS regression with time fixed effects; a less conservative time series model estimated a reduction of 27% at current P3 expenditures.



# Freight efficiencies – Ysleta example

		FY 2018
1	P3 toll <b>revenues</b> from cargo trucks	\$1,035,653
2	P3 <b>expenditures</b> for cargo trucks	\$651,106
3	Total cargo crossings (standard and FAST)	528,000
4	<b>Standard cargo crossings during P3 hours</b>	<b>137,925</b>
5	Standard cargo average wait time (minutes) during P3	50.0
6	TTI study (2011) - hourly <b>direct</b> cost of delay	\$45
7	Cost savings per 1 minute wait reduction	\$103,444
8	<b>Minutes reduction to break even using TTI study</b>	<b>6.29</b>
9	COLEF study (2007) - hourly <b>direct &amp; indirect</b> cost of delay	\$73
10	Cost savings per 1 minute wait reduction	\$167,808
11	<b>Minutes reduction to break even using COLEF study</b>	<b>3.88</b>

71% growth since FY08 (end of Great Recession)



- **Direct costs** – transportation wages & salaries, fuel, maintenance, depreciation, etc.
- **Indirect costs** – custom brokers fees, productivity losses, additional inventories & warehousing

Source: IBD using CBP for crossings and TTI for wait times (from end of queue to primary).

Note: TTI is a study on BOTA and COLEF on all US-MX ports (estimates inflation adjusted to 2017 dollars).

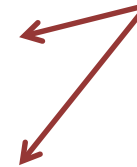


# Freight efficiencies – Ysleta example

		FY 2018
1	Avg. minutes reduced per truck	12.8
2	Total hours reduced	29,320
3	Yearly cost savings (TTI - <b>\$45</b> )	\$1,319,391
4	Savings-to-cost ratio	<b>2.03</b>
5	Yearly cost savings (COLEF - <b>\$73</b> )	\$2,140,345
6	Savings-to-cost ratio	<b>3.29</b>

What does this mean?

In FY18, every dollar invested in P3 generates between **\$2.03** and **\$3.29** in savings benefit for standard cargo at Ysleta.



- If we consider that P3 also reduces the wait time of the trucks that cross during the hour immediately after coverage ends, then the estimated number of cargo trucks that benefited in FY18 is **170,462** and total hours reduced is **36,236** for a savings-to-cost ratio of between **2.58** and **4.18** (this spillover scenario is actually more plausible)





# Personal crossings

- IBD has replicated, updated and improved the most widely sourced econometric results by **Coronado and Phillips (2006)** on the net sales (exports – imports) to Mexican nationals
- IBD is in discussion with COLEF to conduct a year-round random survey across the city's four bridges to quantify:
  - cross-border social and purchasing activities, destination patterns, utilization of amenities
  - direct spending by MX visitors and economic impact in El Paso
  - factors that influence travel decisions – bridge traffic, border delays, external shocks





# P3 renewal

- IBD and CBP are focused on a holistic approach for facilitating flow and reducing wait times especially during peak hours
  - Interventions include ALOI, P3, UCP, empties program, ITS, bridge redesigns, infrastructure improvements, and traffic mgmt.
  - P3 is a critical component to interdependent efficiencies already created
  
- IBD recommends renewing the P3 to continue supporting other interventions being developed
  - If council wishes to reduce cost, an option is to revert back to levels covered by the original contract

	Original	Current	<b>Recommended</b>	Holidays only
Overtime Hours	12,064	18,720	<b>13,104</b>	2,200
Cost	\$1,470,722	\$2,282,155	<b>\$1,597,509</b>	\$268,202





# P3 coverage

Remove, reduce and shift hours to achieve original contract levels

- All Lanes Open Initiative (start 2012)
  - original P3 hours (start 01/26/14)
  - new P3 hours (start 07/21/16)
- Number of P3 lanes funded inside cells

		a.m.											p.m.												
		12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11
<b>Ysleta Cargo</b>		closed																							
Monday												1	1	1	1										
Tuesday												1	1	1	1										
Wednesday												1	1	1	1										
Thursday												1	1	1	1			2	2	2	2	2	2	2	
Friday												1	1	1	1			2	2	2	2	2	2	2	
Saturday												1	1	1	1										
<b>PdN Vehicles</b>																									
Monday						4																			
Friday																		6	6						
Saturday																		6	6	6	6				
Sunday																		6	6	6	6				
<b>Ysleta Vehicles</b>																									
Friday																		6	6						
Saturday																		6	6	6	6				
Sunday																		6	6	6	6				
<b>PdN Pedestrians</b>																									
Monday												2	2	2	2										



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# Public-Private Partnership (P3) Program Renewal & Comprehensive Capital Improvements Plan December 2018

**Strategic Goal # 1** – Create an Environment Conducive to Strong, Sustainable Economic Development

1.5. Stimulate Economic Growth Through Transit Integration, Cross Border Mobility, Trade and Tourism



# Bridges Steering Committee

## Participants



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### United States

- Border Industrial Association
- Borderplex Alliance
- City of El Paso (IBD, PD, PI)
- County of El Paso
- El Paso Community Foundation
- Metropolitan Planning Organization
- Southwest Maquiladora Association
- Texas Department of Public Safety
- Texas Department of Transportation El Paso
- U.S. Customs and Border Protection
- U.S. Federal Protective Service
- U.S. General Services Administration
- U.S. Consulate
- U.S. DOT
- UTEP – Civil Engineering Department

### Mexico

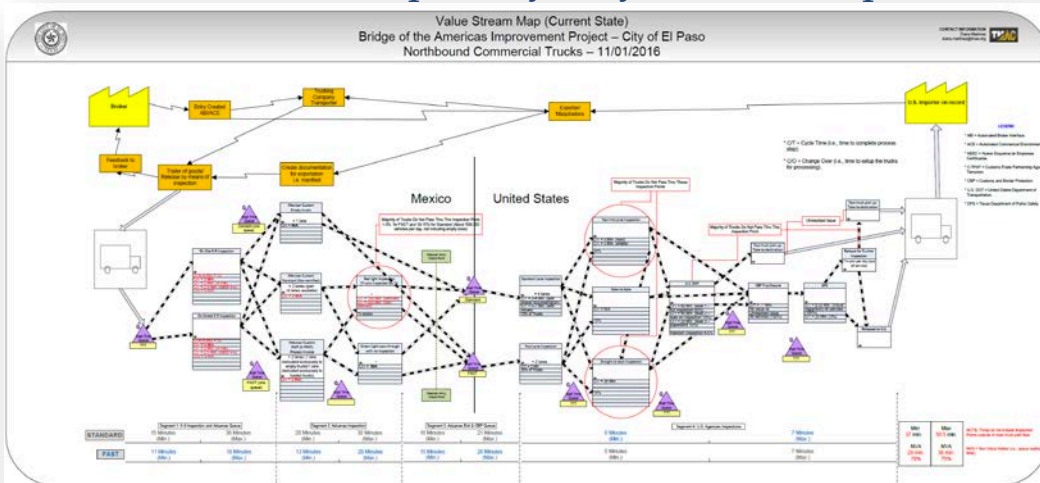
- Asociación de Transportistas
- Fideicomiso de Puentes Fronterizos de Chihuahua
- Gobierno del Estado de Chihuahua
- IMIP (Jrz. Planning Office)
- Index (Maquiladora Association)
- Municipio de Juarez
- Servicio de Administración Tributaria (Mexican Customs)
- Secretaria de Relaciones Exteriores (Mexican Consulate)



# Comprehensive POE CIP

20 in 2020

- Worked with the BSC to develop a comprehensive CIP for all regional POEs, all modes, both north- and south-bound
    - ❖ September 2015: Ysleta-Zaragoza
    - ❖ November 2016: Bridge of the Americas
    - ❖ March 2018: Stanton and Paso del Norte
    - ❖ April 2018: Bridge of the Americas
    - ❖ May 2018: Ysleta-Zaragoza POE
- }
- Cargo
- Vehicles and Pedestrians
- 
- More than 100 potential bridge improvement ideas identified
  - Initiative adopted by City Council as part of 20 in 2020 (No. 4)



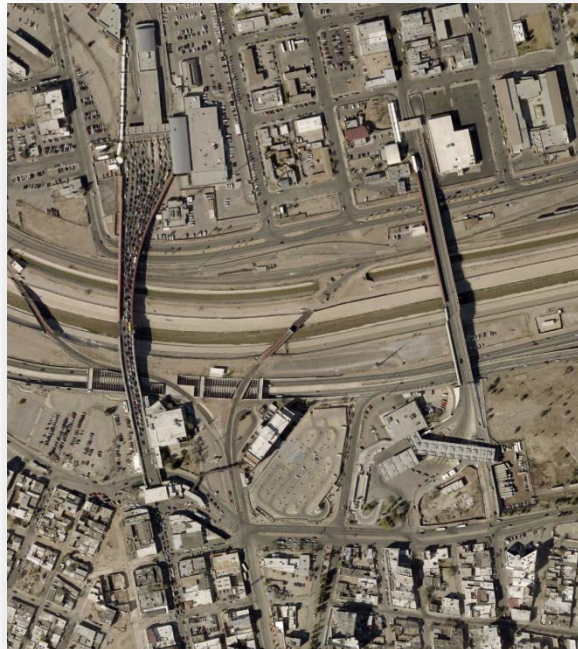


# BSC Work Sessions

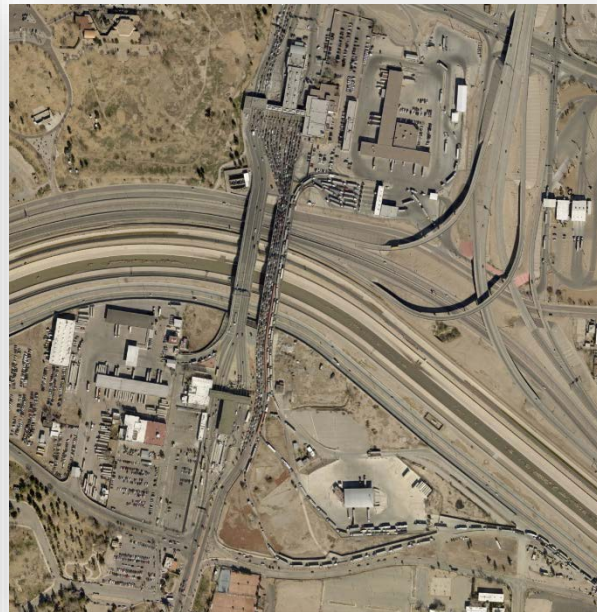
## POE Vehicle and Pedestrian Improvement Projects



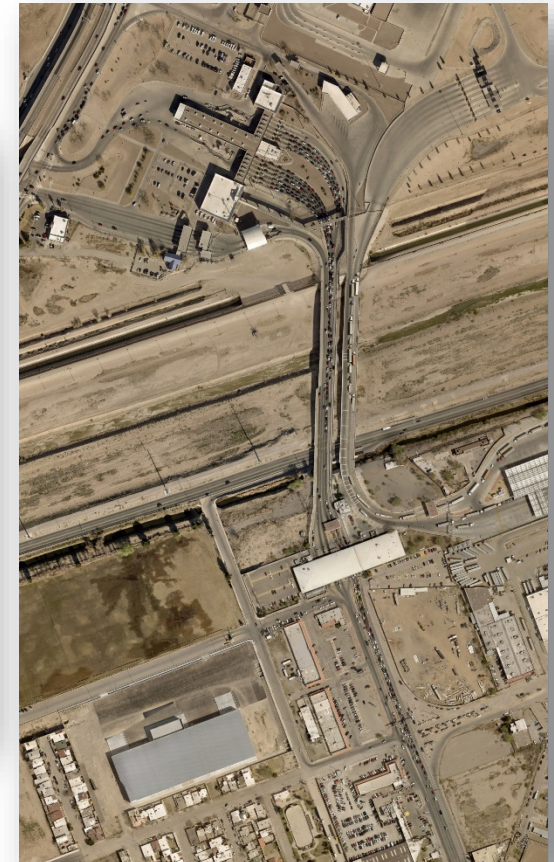
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**PDN & Stanton**  
20 improvement projects  
(March 2018)



**Bridge of the Americas**  
48 improvement projects  
(2016, April 2018)



**Ysleta-Zaragoza**  
47 improvement projects  
(2015, May 2018)

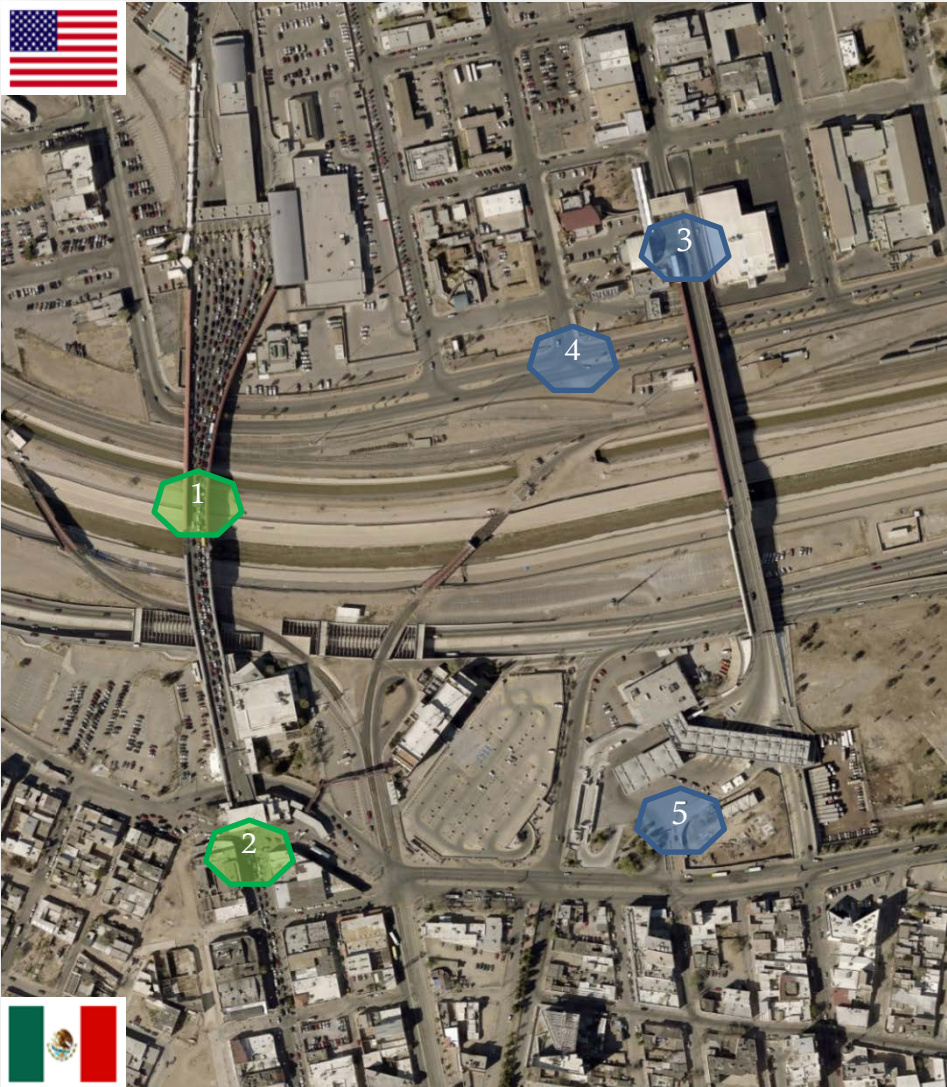


# Potential Improvement Projects

## PDN & Stanton St. POE



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### Paso Del Norte POE

- 1 Add second dedicated Ready Lane
- 2 Extend Ready Lane segregation into Mexico

### Stanton Street POE

- 3 Redesigned SB POV/PED lanes
- 4 Comprehensive downtown traffic study
- 5 Redesigned SB POV inspection area and traffic flow (MX)

**20 ideas for improvement total**

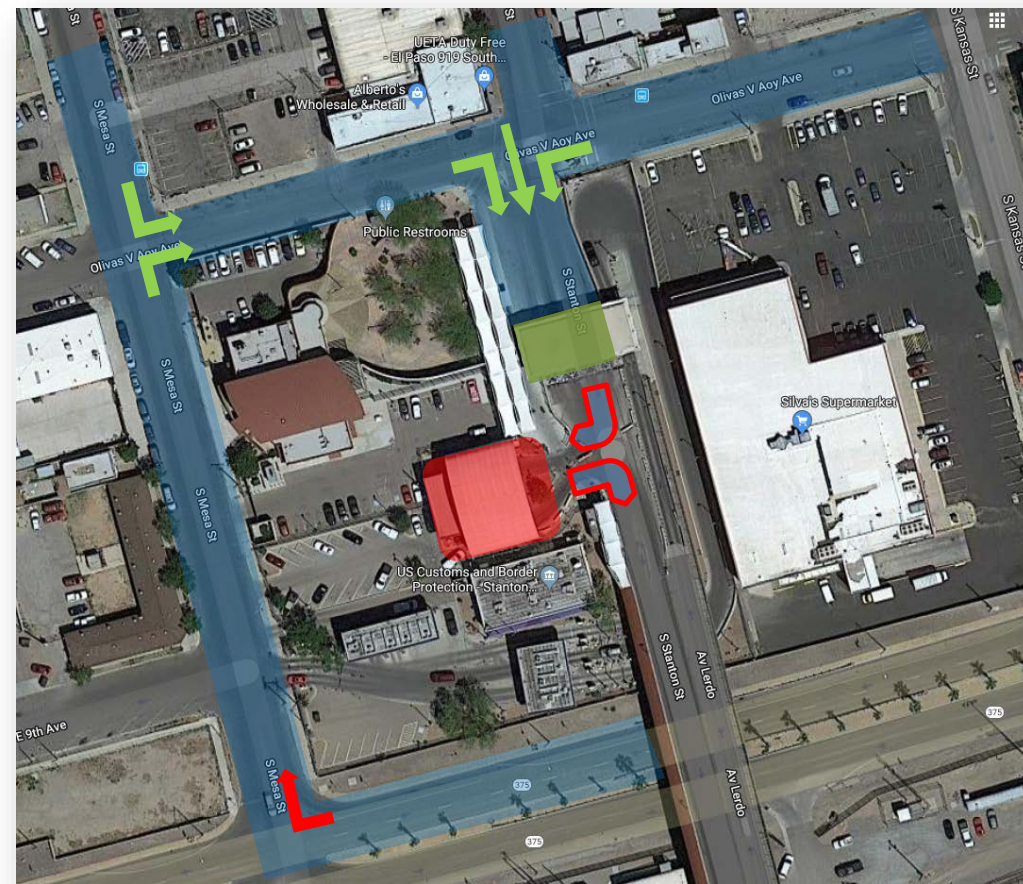


# Potential Improvement Project

## Stanton Street POE



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# Potential Improvement Projects

## Bridge of the Americas POE



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### BOTA POE

- 1 Intelligent Transportation Systems
- 2 Redesigned SB lanes, all modes
- 3 Additional cargo primary inspection lanes
- 4 Add a shade canopy for pedestrians (US/MX)
- 5 Redesigned cargo NB right-turn
- 6 Add second dedicated Ready Lane
- 7 Extend Ready Lane segregation (MX)
- 8 Redesigned Aduanas facility to improve traffic flow (POV)

**48 ideas for improvement total**

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1 standard lane

1 FAST lane

Aduana Inspection

Standard laden

Standard empties

FAST

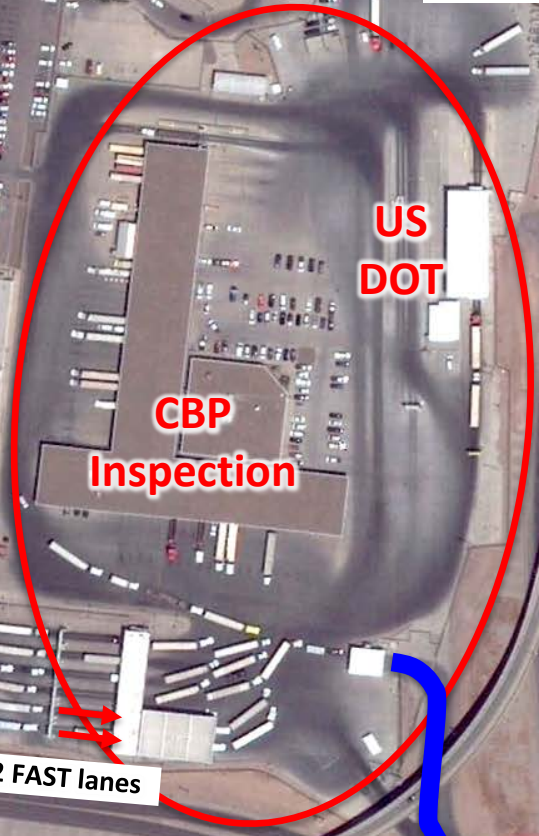
Truck Queue



BOTA Cargo



# BOTA Cargo



2 FAST lanes

southbound

northbound

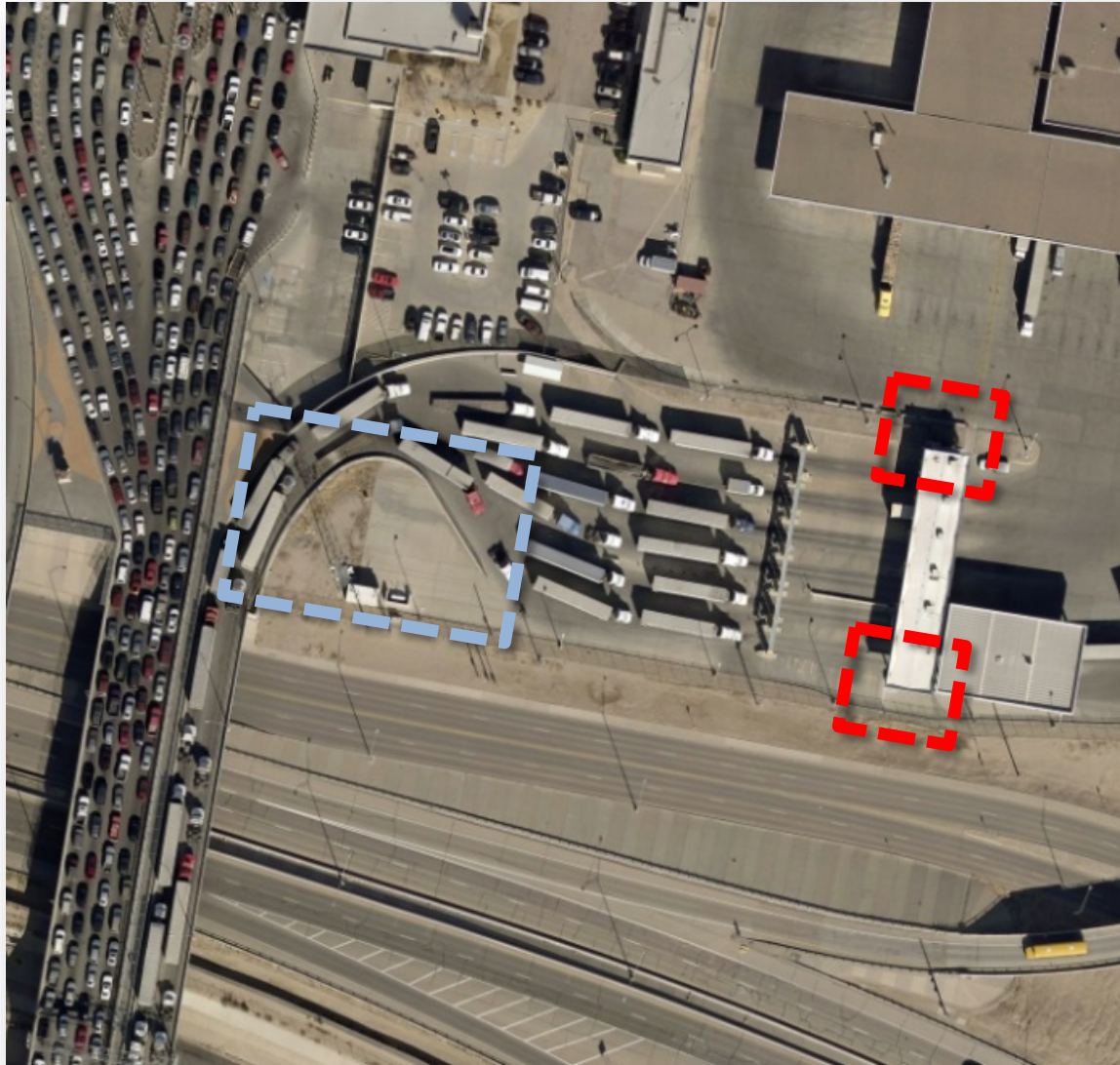


# Bridge of the Americas POE

## Improvement Project Ideas



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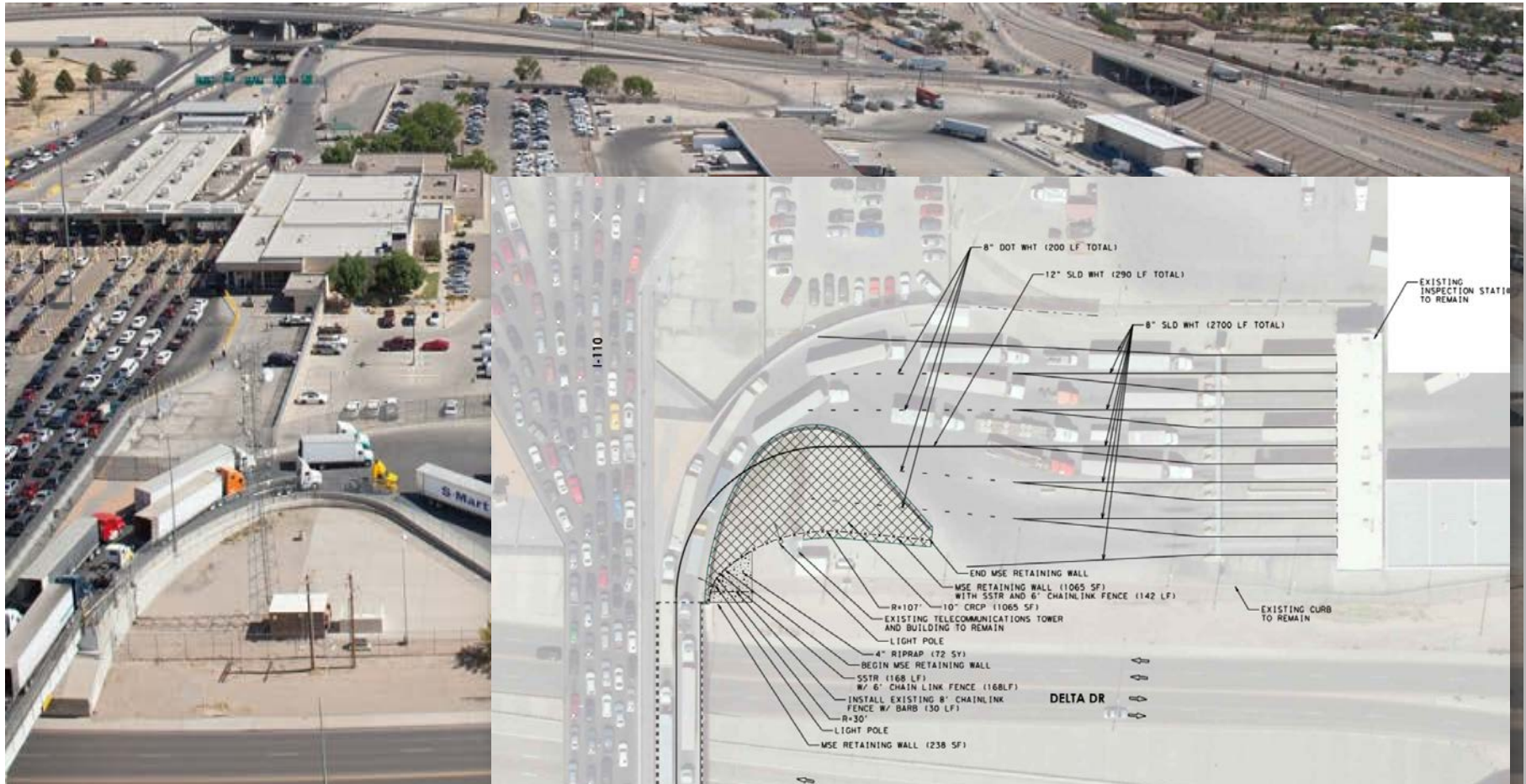


# Bridge of the Americas POE

## Improvement Project Ideas



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Source: U.S. Customs

ITEM NO.	DESCRIPTION	ESTIMATED QUANTITIES	UNIT
100 6001	PREPARING ROW		AC
110 6001	EXCAVATION (ROADWAY)		CW
132 6006	EMBANKMENT (FINAL) (DENS CONT) (TY C)		CW
310 6013	PRIME COAT (55-1)		GW
341 6040	D-OR JMA TX-D-8064-22		TC

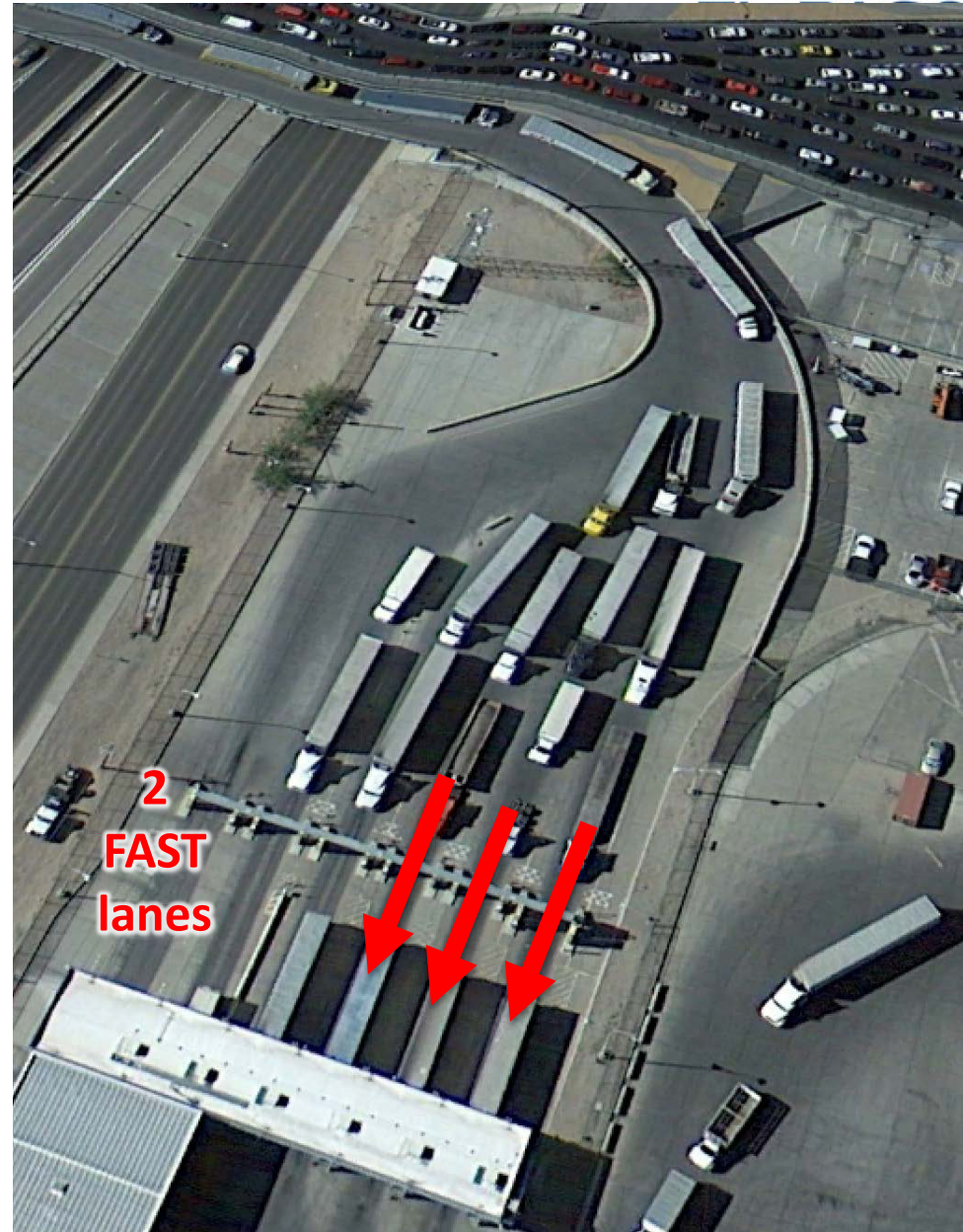


# Bridge of the Americas POE

## Cargo Empty Lane Pilot



- 70% of trucks are empties at BOTA POE
- In Feb. 2017 CBP began a pilot program to reduce the congestion created by empties during midday
- Based on initial success, CBP now adjusts assigned standard lanes as needed for empties between 10 a.m. and 1 p.m. (open 4<sup>th</sup> lane if needed)



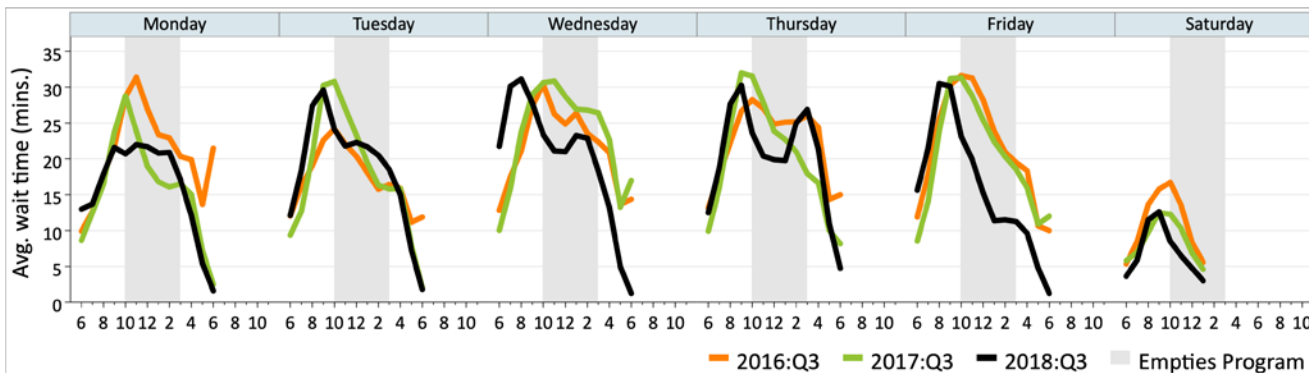
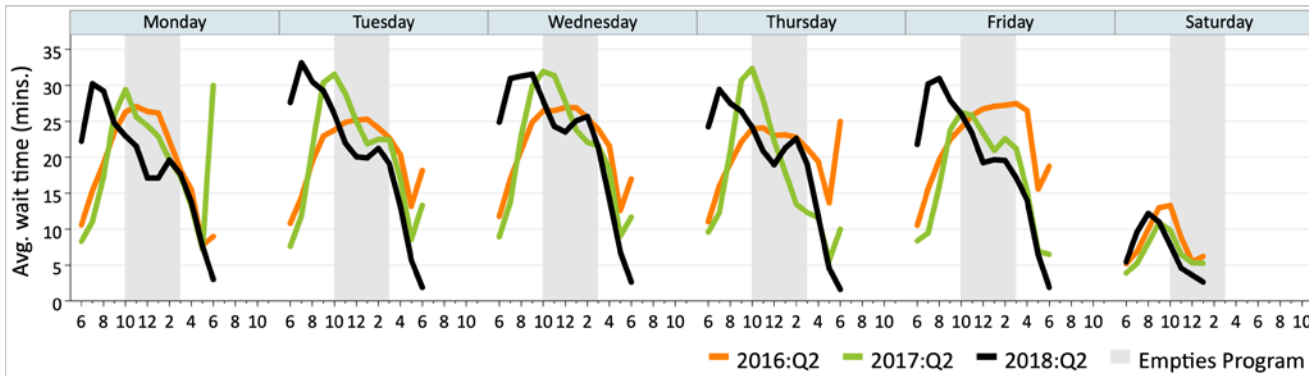
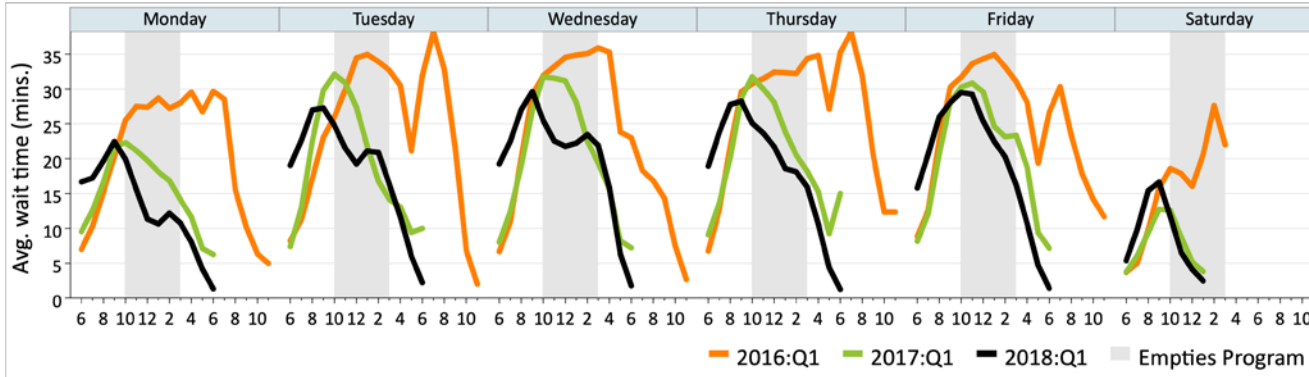


# Bridge of the Americas POE

## Empties Program Results – Quarterly Comparison



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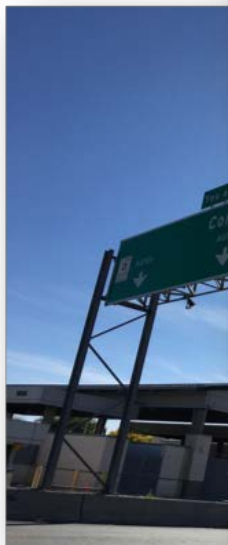
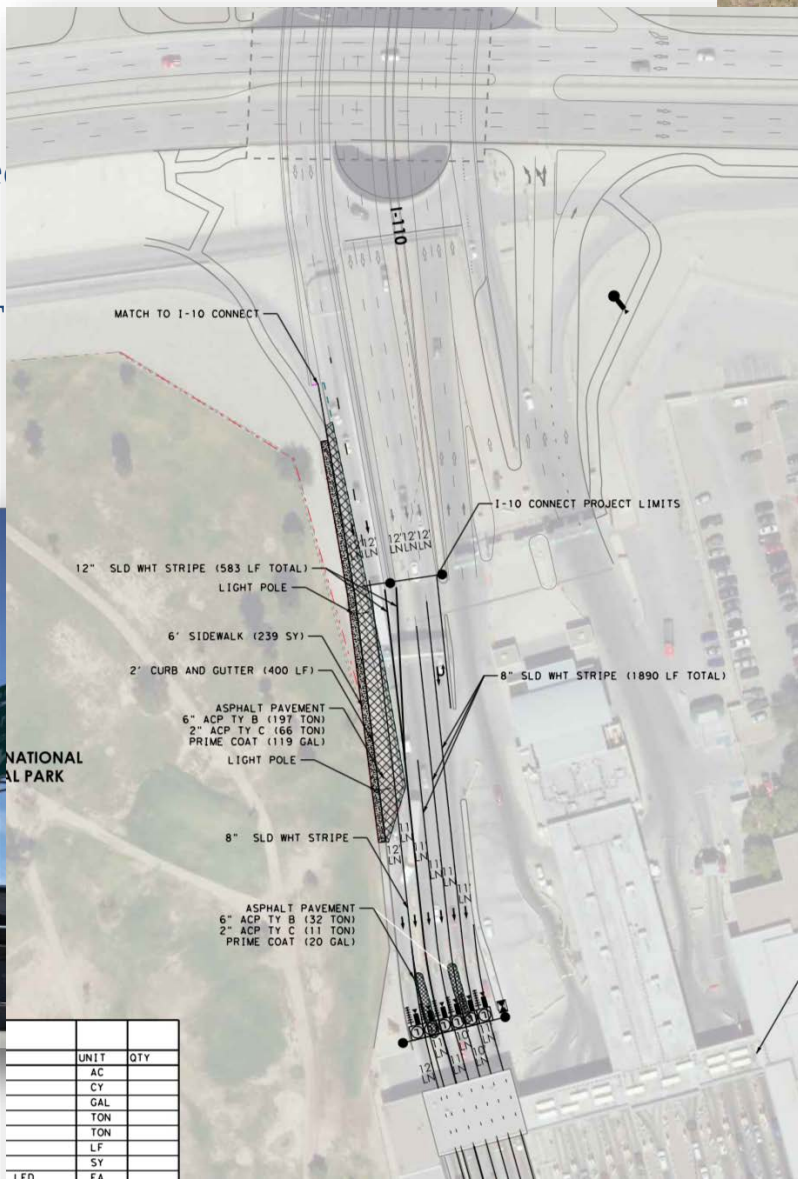
# Bridge of the Americas POE



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➤ Redesign

TXDOT



NATIONAL  
AL PARK



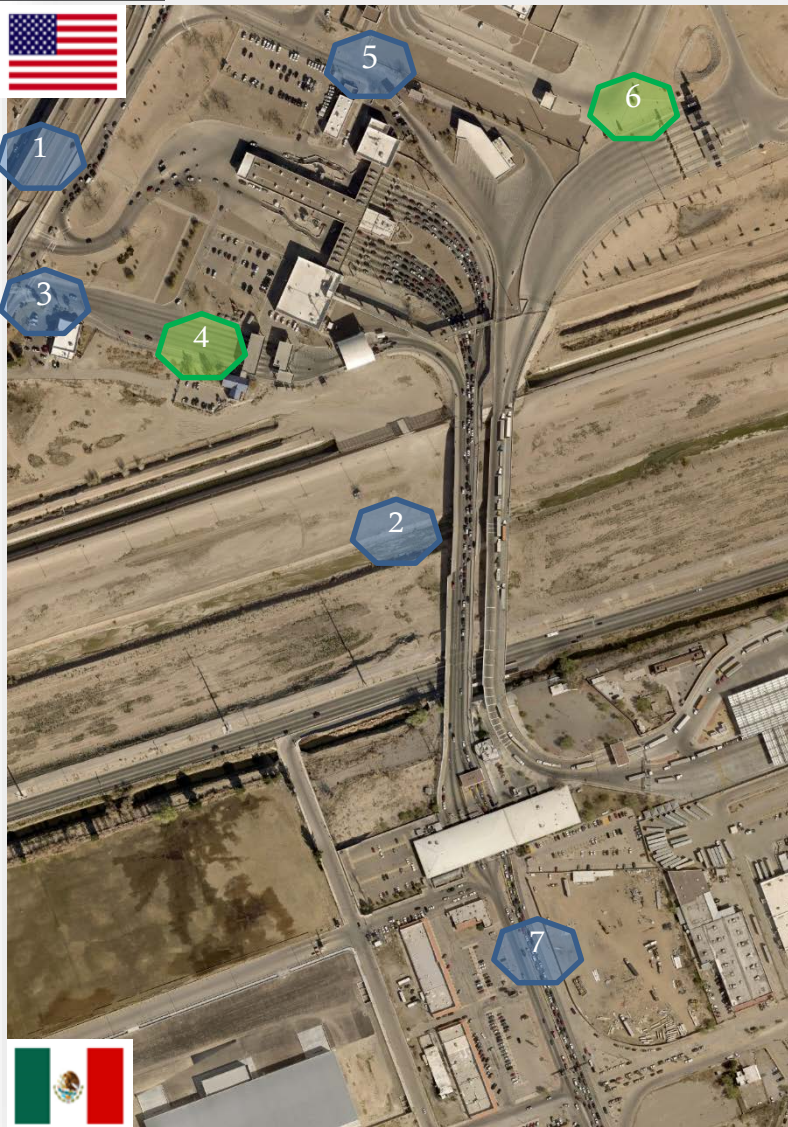
# Potential Improvement Projects



## Ysleta/Zaragoza POE

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### Ysleta/Zaragoza POE



- 1 Redesigned PED waiting/pick-up area
- 2 New dedicated pedestrian bridge (NB/SB) for added bridge capacity
- 3 Intelligent Transportation Systems
- 4 E-Fast Pass-only lane enhancements
- 5 Upgraded electronic toll collection systems
- 6 Unified Cargo Processing program
- 7 Extend Ready Lane segregation (MX)

**47 ideas for improvement total**

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# Pedestrian Border Crossing

## UTEP Capstone Class



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# Things to Consider...



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- ❖ Pedestrian safety and amenities
- ❖ Must accommodate all persons, as required by the ADA
- ❖ Protection from the elements
- ❖ Consider pedestrian behavior and vehicle movements
- ❖ Pedestrian-level light fixtures, raised pedestrian crossings, marked crosswalks, median islands, bulb-outs, pedestrian warning signs and signals, traffic calming techniques, road diets, etc.
- ❖ CBP primary and secondary inspection points
- ❖ Security measures expected at a border crossing
- ❖ COEP pedestrian toll
- ❖ Bicycle considerations
- ❖ Wayfinding signs





# Ready Lane Segregation (MX)

## Lane Assignments and Signage Plan

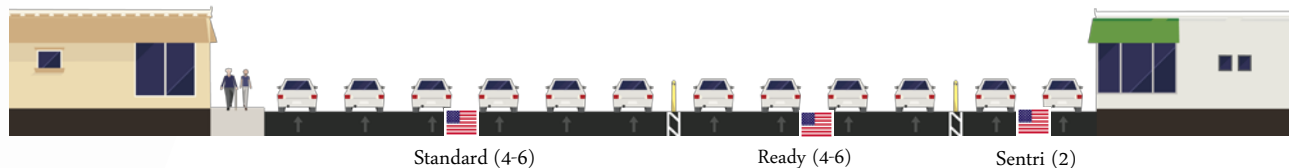


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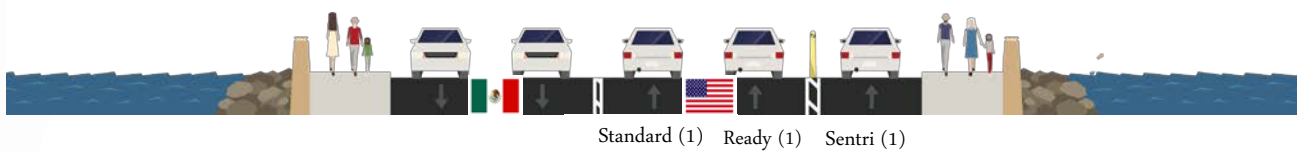
1

CBP Primary



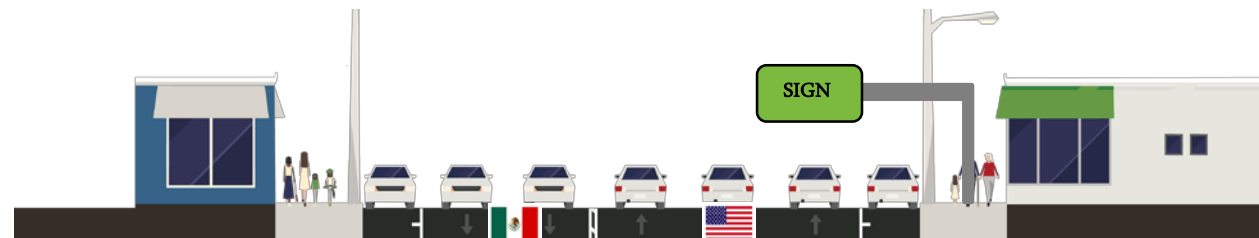
2

Top of Bridge



3

Av. Waterfill



Cross-sections generated in Streetmix



# Comprehensive CIP



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City of El Paso - Capital Projects	Project Stakeholders	Total Budget Allocation				POE				Mode			
		Total	P3	Rider	Other	YSL	PDN	STA	BOTA	Cargo	POV	PED	
ITS Design and Engineering Services	TxDOT	\$ 1,380,996	\$ 1,380,996	\$ -	\$ -	0				0			Design
Intelligent Transportation Systems at YSL	TxDOT	\$ 13,926,714	\$ -	\$ 13,926,714	\$ -				0				
Intelligent Transportation Systems at BOTA	TxDOT	\$ 6,589,363	\$ -	\$ 6,589,363	\$ -			0	0				
Upgrade electronic toll collection system		\$ 2,260,199	\$ 2,260,199	\$ -	\$ -	0	0		0	0	0		
Redesign NB right-turn at BOTA cargo	CBP   GSA	\$ 508,147	\$ -	\$ 508,147	\$ -			0	0				
Traffic control measures at YSL	TxDOT	\$ 943,089	\$ -	\$ 943,089	\$ -	0			0				
Traffic Management Center and Systems Integration	TxDOT	\$ 3,505,280	\$ -	\$ 3,505,280	\$ -	0							
Traffic control measures at BOTA	TxDOT	\$ 475,371	\$ -	\$ 475,371	\$ -			0	0				
Redesigned SB POV, PED and cargo lanes at BOTA	TxDOT   GSA   CBP	\$ 450,797	\$ -	\$ 450,797	\$ -			0	0	0	0		
Redesign SB POV/ PED lanes to improve traffic flow at Stanton	CBP   GSA	\$ 250,000	\$ 250,000	\$ -	\$ -			0		0	0	Programmed	
Comprehensive traffic study downtown	TxDOT	\$ 250,000	\$ 250,000	\$ -	\$ -		0	0		0	0		
El Paso Star at Stanton Pedestrian Plaza		\$ 15,000	\$ -	\$ -	\$ 15,000			0			0		
City Toll Booths Improvements at YSL and Stanton		\$ 200,000	\$ 200,000	\$ -	\$ -	0		0		0			
Redesign SB POV/ PED lanes to improve traffic flow at YSL	CBP   GSA	\$ 100,000	\$ 100,000	\$ -	\$ -	0				0			
Redesign pedestrian waiting/ pick-up area at YSL	TxDOT   GSA   CBP	\$ 337,331	\$ 337,331	\$ -	\$ -	0					0		
Traffic conflicts between POV and Cargo (Paisano Dr.-US-54)	TxDOT	\$ 175,000	\$ 175,000	\$ -	\$ -			0	0	0			
Consolidated payment system for all tolled bridges (US/ MX)	Gob. del Edo. de Chih.	\$ -	\$ -	\$ -	\$ -	0	0	0	0	0	0		
Improve ADA accessibility	Multiple gov't agencies	\$ 1,100,000	\$ 1,100,000	\$ -	\$ -	0		0			0		
Improve pedestrian safety measures along Loop 375	TxDOT   GSA   CBP	\$ 150,000	\$ 150,000	\$ -	\$ -	0					0		
Parking Meter Fleet Upgrades		\$ 700,000	\$ -	\$ -	\$ 700,000								

Total	P3	Rider	Other
<b>\$ 33,317,287.44</b>	<b>\$ 6,203,526</b>	<b>\$ 26,398,761</b>	<b>\$ 715,000</b>



# Requested City Council Actions



## P3 Renewal & Comprehensive CIP Approval

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- (1) That the Mayor be authorized to sign the Section 559 Reimbursable Fee Agreement and the MOU to the Section 559 Reimbursable Fee Agreement between the City of El Paso and the U.S. Customs and Border Protection (“CBP”) whereby the City will reimburse CBP for overtime provided by CBP officers to reduce wait times at the City ports of entry for a reimbursement amount not to exceed \$1.65 million.
  
- (2) That the El Paso City Council approved the list of projects on Exhibit “A” attached hereto, totaling approximately \$33,317,287.44, which establishes: 1) the “Comprehensive International Bridges Capital Improvement Program” as the approved list of International Bridges Capital Improvement Program projects for FY 2019 through FY 2023 and 2) the use of the identified funding sources, and that the City Manager be authorized to make all necessary budget transfers prior to the execution of the projects.



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# Public-Private Partnership (P3) Program Renewal & Comprehensive Capital Improvements Plan December 2018

**Strategic Goal # 1** – Create an Environment Conducive to Strong, Sustainable Economic Development

1.5. Stimulate Economic Growth Through Transit Integration, Cross Border Mobility, Trade and Tourism